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A Design Thinking Mixed-Methods Study on Deliberate Practice and Building Collective Efficacy for Teachers in the Midwestern United States

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A Design Thinking Mixed-Methods Study on Deliberate Practice and Building Collective Efficacy for Teachers in the Midwestern United States

by

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Problem of Practice

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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

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For Kathy

Executive Summary

Educational research identified teacher efficacy as a primary driver for student learning and building a positive school culture (Hattie, 2018). However, understanding how to build and support the self and collective efficacy of teachers remained unclear and an elusive process for in-service teachers. The following research study used a design thinking mixed-methods study to explore how professional development rooted in a criteria of deliberate practice worked to build professional capacity of teachers and increase teacher efficacy (Ericsson, 2020). The research project initially began embedded at an independent school in a Midwestern city before expanding to include 15 in-service teachers representing five different public and private schools, and teaching kindergarten through 12th grade across subject matters. Teacher participants engaged in an eight-week professional development intervention embedded with specific qualitative deliberate practice elements including professional goal setting, deliberate practice planning, and goal reflection and evaluation. The *Teachers' Sense of Self-Efficacy Survey* (Tschannen-Moran & Hoy, 2001) measured pre and post intervention teacher efficacy in three constructs: instructional strategies, classroom management, and student engagement. The results from the study indicated teacher use of deliberate practice consistently resulted in increased teacher efficacy. Over 71% of teachers reported progress on individual goals related to content expertise and student-teacher relationships. Additionally, the post intervention teacher efficacy survey noted substantial increases in teacher efficacy in instructional strategies and student engagement, especially for teachers who completed all deliberate practice elements. The study provided a synthesized framework for future professional development models supported by deliberate practice as a standard of care.

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Chapter One: Introduction

Curricular reform efforts in education during the first two decades of the 21st century centered on a range of initiatives including closing the achievement gap, promoting college and career readiness, core standards of content, and efforts to reexamine how curricular content and teaching was culturally reflective and responsive to all students given the changing demographics of the United States. Much of the attention from educators as each navigated shifting policies from the No Child Left Behind Act of 2001 (2002), the Common Core State Standards (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010) Race to the Top (US Department of Education, 2009), and Every Student Succeeds Act (2015) involved what students and teachers should know and be able to perform (Levitt, 2017). Often the focus was on the content of the curriculum, the fundamental skills students needed, and the curricular tools and methods teachers required to instruct students and raise performative measures. However, reform was not simply a curricular or pedagogical question of what and how students were taught and needed to learn (Hattie, 2018; Marzano et al., 2017). What also drove increased learning for students involved a crucial examination of how teachers learned, how teachers increased professional capacity, how teachers built self and collective efficacy, and how teachers achieved instructional expertise (Grant, 2022; Hattie, 2018).

Teacher Turnover

Heading into the new decade, the teaching profession continued to face a high turnover rate compared with other professions. Thirty percent of all teachers who entered the profession after completing a degree in education left the field before five years of

service (García & Weiss, 2019, p. 13). While health concerns and the COVID-19 pandemic created another reason to exit teaching, stress persisted as the leading factor former teachers cited as the reason for the departure (Diliberti et al., 2021). Teacher turnover rates had multiple consequences for school leaders and organizations such as reduced student achievement, which fractured the delivery of a coherent curriculum, and added costs for schools to replace departing teachers and train new hires (Sorenson & Ladd, 2019 as cited in Diliberti et al., 2021). The problem of teacher turnover and attrition was not specific to only struggling schools and was felt across the educational landscape effecting both public and private schools. Researchers at the National Center for Education Statistics disaggregated teacher turnover data by type of school finding although private school teachers reported greater satisfaction than public school teachers in the school's organizational attributes, private school teachers consistently left the field or moved schools at higher rates than public school teachers (Holton, 2003; Ingersoll, 2001). Schmitz (2017) reported the private school teacher turnover rate was twice as high as public school teachers and the private school teacher turnover rate had been accelerating beyond public school teacher attrition since 1987. In 1987, private school teachers in the third year of teaching held a 73% retention rate whereas by 2008 the retention rate dropped to 45.8% with more than half of private school teachers leaving school by year three (Schmitz, 2017, see Table 1).

Student Enrollment Changes and Persisting Teacher Dissatisfaction

Teacher turnover persisted at a time of student enrollment fluctuation and change in schools. Nearly 30% of teachers who moved or left the private school cited low administrative support followed by other factors such as low teacher input in classroom

decisions and low teacher input in school decisions (U.S. Department of Education Institute of Educational Sciences, 2005, see Table 1). Nonsectarian, private schools had the highest level of dissatisfaction among departing teachers with the administrative support each received from school leaders (U.S. Department of Education Institute of Educational Sciences, 2005). Teacher turnover and dissatisfaction among nonsectarian private school teachers was enlightening, since the same types of private schools saw increased enrollment outpaced other types of private schools, such as Catholic and religious schools during the same period (Murname et al., 2018). Dissatisfaction among all teachers persisted as 41% of all teachers who entered the profession after completing a degree in education left the field before five years of service (García & Weiss, 2019, p. 13). Stress was the leading factor former teachers cited as the reason for their departure from the classroom (Diliberti et al., 2021).

Changing Student Demographics

The changing demographics of students in the United States added to the picture of teacher efficacy. According to the National Center for Education Statistics (NCES, 2021), in 2018, 47% of public-school students identified as White, 15% as Black, 27% as Hispanic, 5.3% as Asian, .4% as Pacific Islander, 1% as American Indian / Alaskan Native, and 4.1% as two or more races (p. 12). The data marked a continuing pattern in the demographic diversity of the country as one group no longer held a majority status. Yet, while the student population continued to diversify, the teaching profession remained demographically idle since 2000 with 79% of teachers still identifying as White (NCES, 2021, p. 16). The struggle to provide a diverse curriculum and culturally responsive pedagogy for all students became another stress factor for teachers whether

the teachers navigated pushback from constituent groups resistant to demographic change or whether the teachers implemented school-wide curricular changes.

Retaining high quality teachers was fundamental when considering the positive relationship teachers had on student learning. Hattie (2012) documented the core role teachers played to sustain measurable improvements for student learning, and subsequent research by Hattie (2018) identified teacher clarity and the collective efficacy of teachers as primary driving forces for student success. The need for high level teachers to remain in the profession was clear. Teachers needed further support to remain in the profession and develop the professional capacity to meet the changing demands of the field including issues of diversity, equity, and inclusion (Kosi, 2020; Morote et al., 2020). Professional development practices were the processes by which a teacher increased professional capacity to become the best version of an educator. Turning to the existing literature, the researcher explored three fundamental aspects of building teacher capacity including building the professional capital of teachers, engaging in collaborative professionalism with other teachers, and finally developing self and collective efficacy for an educational goal, mission, and school community.

Framework Surrounding the Problem

The researcher explored how a better understanding of deliberate practice and educational praxis could potentially help school leaders and teachers enhance professional development programs and build the self and collective efficacy of teachers. Hattie (2018) identified collective efficacy of teachers as a leading factor to improved learning outcomes for students. Teachers had specific professional needs and required multiple avenues for building professional capacity and instructional expertise including

autonomy and agency as individual learners, consistent opportunities to collaborate with peers, and regular access to the knowledge and skills associated with teaching (Costa & Kallick, 2017; Grant, 2022; Nolan & Molla, 2017). Teachers and school administrators sought to raise the professional capacity of teachers through professional development activities fostering resilience and growth (Stoll, 2020). However, when professional development was inconsistent or misaligned to teacher needs teacher efficacy decreased and potentially limited or decreased professional capacity, confidence, and job satisfaction (Smet, 2021). Deliberate practice, defined by Ericsson et al. (1993) and Ericsson (2020), involved a specific criterion of engaged work and feedback by an individual and mentor aimed to develop expertise in a targeted learning domain. Structuring professional development, focused consistently on teacher engagement in reflective methods of deliberate practice, helped advance the educational praxis of teaching and provided a higher standard of care for teachers and students.

Research within the current literature revealed core, systemic variables that potentially hindered the self and collective efficacy of teachers (see Appendix A). The first organizational theme of the variables involved systemic issues that limited or ignored the professional capital and professional capacity of teachers. Costa and Kallick (2017) categorized teachers' need as cognitive, physical, emotional, social, and spiritual in nature. In the school setting, Nolan and Molla (2017) outlined the professional capital of teachers involved in three aspects including (1) individual human capital (knowledge & skills), (2) social capital (collaborative learning communities), and (3) decisional capital (professional agency & autonomy. While Stoll (2020) defined professional capacity as a quality that allowed individuals and social organizations to routinely learn,

change, and grow. The capacity for teachers to respond to the diverse needs of education rested not simply on the desired educational content that met the needs of students. Teaching capacity was also connected to growing the professional capital of teachers, offering consistent avenues for collaborative professionalism, and building confident teachers who displayed self-awareness, resiliency, and collective efficacy for each other and the school (Stoll, 2020). Deliberate practice, centered on building the professional capacity of teachers, equipped teachers with pedagogical skills necessary to respond to a diversity of students and the culture and communities in which the educators taught.

A second theme of the systemic drivers that inhibited self and collective efficacy was administrative communication and clarity. Helsing et al. (2008) suggested school improvement efforts by administrators should let go of the idea of solving educational challenges as perceived technical problems, and instead, school administrators should focus on human relations and communication. Interviewing teachers from Baltimore Public Schools, Bryk et al. (2015) noted how multiple, uncoordinated, and conflicting professional development initiatives and directives aimed at teachers often became overwhelming for teachers to manage. Too often professional development for teachers, as guided by administrators, centered on correcting personnel issues or personal teacher deficiencies rather than recognizing the predominant cause of organizational failures evident in the institutional systems individuals operated within, rather than with the individuals themselves (Nolan et al., 2011).

A third systemic driver was lack of alignment between teachers and other constituent groups. According to Lunenburg and Ornstein (2012), the role of educational leaders aligned with the human relations model of educational management in the same

way teachers' needs were specific to human relations management (Lunenburg & Ornstein, 2012). Successful programs provided consistent opportunities to practice, gave regular feedback through mentoring and coaching, tailored to individuals' specific needs and time in a teacher's career, and involved a network of peers (Desravines et al., 2016). The data from the ISACS Community and Climate Survey (Independent Study School, 2021) revealed a lack of consistency between the faculty constituent group and the administration regarding curriculum and mission alignment.

The fourth systemic driver was feedback and perceptions of accountability for teachers and students. The researched school at the time of the study was an independent private school with students up to sixth grade; students took considerable time and effort to apply to other selective independent, private institutions. The schools' base part of the acceptance on standardized test scores such as the Educational Records Bureau (ERB) Comprehensive Assessment. Teachers expressed a pressure to have students do well on such assessments as a measure of the teachers own ability to education and raised a deeper question on feedback and data for teachers. A primary component of deliberate practice, according to Ericsson (2020) was, "participants need to gain immediate informative and actionable feedback on each performance of the practice task that allows them to make appropriate adjustments to improve" (p. 1115).

Finally, the fifth systemic driver contributed to low efficacy for teachers was the lack of collaboration and community building with other teachers. To provide teachers with authentic avenues for enhancing professional capacity through collaborative learning, Hargreaves and O'Connor (2018a) argued professional development must meet two essential requirements of "solidarity" and "solidity." Solidarity was the establishment

of authentic relationships based upon collegiality and mutual respect and should be fostered prior to deciding upon or acting towards an educational objective (Hargreaves & O'Connor, 2018b). Solidity defined the clarity of a collaborative learning experience for teachers as each co-created educational goals, sought substantive information, practiced with rigor, and reflected on the practical feedback teachers gave and received from each other (DeWitt, 2019; Hargreaves & O'Connor, 2018b). Taken together, Hargreaves and O'Connor (2018a, 2018b) suggested solidarity and solidity provided a model of collaborative professionalism that consistently nurtured the relationship between teachers, fellow educators, and school leaders.

Location

The original study began at an Independent Study School (ISS), described as a private school located in an urban neighborhood of a Midwestern city, serving students Pre-K through sixth grade and accredited through the Independent School Association of the Central States (ISACS). Enrollment for the 2022-2023 school year was 308 students of which 44% were persons of color and included 130 students who received needs-based scholarships (Independent Study School, 2022a, para. 4). The Independent Study School (2022a) reported students attended from 48 different zip codes including urban, suburban areas, and beyond; characterized as an independent school existing beyond the district boundaries of the city school and the political boundary of the Midwest city. According to the United States Census Bureau, the surrounding urban area had an estimated population of 293,310 (about half the population of Wyoming (U.S. Census Bureau, 2021) further defined as 46.4% White, 45.7% Black, and 4.1% as Hispanic. 20.4% of the population is in poverty with a median household income of $45,782; $22,879 less than

the surrounding county (U.S. Census Bureau, 2021, Table 1). Specifically, the surrounding city public school served an estimated 14,769 students pre-k through fifth grade, 3,259 middle school students and 5,788 high school students (City Public Schools, 2018, p. 9). Seventy-nine percent city school students were Black and 100% qualified for free or reduced school based on the most recent district data figures (City Public Schools, 2018, p. 29).

As a private school, ISS was accredited through ISACS, and the school was governed differently than public schools' obligations to local, state, and federal governance. No teacher union representation of professional educators or participation in negotiating school-wide personnel policies existed, and based upon the researcher's experience, employee contracts were individual, one-year agreements between teachers and the school. Regarding professional growth and development, ISS offered two in-service professional development days each school year, access to a network of professional organizations, conferences, and workshops, and a personal development fund (PDF) for each teacher to pursue professional growth opportunities beyond the regular classroom or curriculum budget. ISS teachers were granted $250 each year for a PDF fund and accrue funds from each year up to a maximum of $1,000 (Independent Study School, 2022c, para. 3). Additional language existed in the ISS Faculty Handbook (2022c) stating teachers were granted time away from the teaching obligation to pursue professional development by partnering with the division head administrator and the use of substitute teachers.

Teaching employee supervision and evaluation were clarified in the ISS Employee Handbook (2022c). Beginning teachers participated in an orientation week

before the school year began and were given a mentor teacher during the initial year. All teachers outlined and reviewed pedagogical goals for the school year with the Division Head and were observed at least three times during the year, one of which was a formal observation, and all included a post-observation conference meeting. According to the ISS Employee Handbook (2022c), "teachers' annual evaluations and salaries should be considered confidential" (p. 13). In the 2019-2020 school year ISS took part in the Assessment for Inclusivity and Multiculturalism (AIM) through the National Association of Independent Schools (NAIS). The process included a series of self-study community dialogues and a school climate survey. Overall, the school scored as a high achieving school regarding multiculturalism and inclusivity. On 15 out of 25 Key Drivers, the Research School scored at or above "High Performing Schools" (ISS, 2019, p. 2). On 10 Key Drivers, Research School scored at or above "All Schools" yet was below "High Performing Schools." The key targets for improvement for RS to be designated as a "High Performing School" included overall school morale, especially among the faculty who presented the lowest level of satisfaction with the culture of the school compared to other constituent groups including students, parents, administrators, trustees, and alumni (Independent Study School, 2019).

Teacher morale and satisfaction persisted at lower levels than other constituent groups during the re-accreditation self-study year of 2021-2022. Another school climate survey conducted through ISACS showed only 64% of responding teachers felt the school achieved the mission (Independent Study School, 2022b, Question 2). The school climate score for teachers was 20 points below the benchmark for all ISACS schools and 31 points below the 95% satisfaction rate among ISS parents (Independent Study School,

2022b, Question 2). According to the Researched School (2022b), faculty also showed low scores regarding school communication, equal opportunity for all students, and the ability for the school to know every student. Taken together, the AIM and ISACS school climate data represented a low collective efficacy among teachers at ISS with respect to other constituent groups' level of satisfaction. The context for the problem revealed the professional support and professional development programs structured and provided to ISS faculty was limited to strengthen teacher morale and collective efficacy.

Theory of Action

The question was not whether professional development and instructional coaching for teachers occurred, but whether professional development lacked the criteria of deliberate practice to elevate teaching towards an agency of praxis (Regelski, 1998). Ericsson et al. (1993) observed expert performance in any field required deliberate practice which had a specific criterion that differentiated deliberate practice from other types of preparation, standards-based skills acquisition, and routine endeavors. The researcher's aim was to anchor professional development in a criterion of deliberate practice and to explore how such efforts increased professional capacity, resilience, and self- and collective efficacy for teachers. Dunn and Shriner (1999) observed teachers could identify specific routines leading to improved performance when consistently adhering to a method of deliberate practice. Focusing on improving pedagogical practice rather than meeting content-specific targets, allowed teachers to enhance professional learning, build stronger collaborative relationships, and sustain a desire to continue learning (Gore & Rosser, 2020). Kosi (2020) and Morote et al. (2020) noted a relationship between deliberate practice and resiliency which increased professional

capacity and self-efficacy. If educational leaders intended to build self and collective efficacy for teachers then leaders needed to consistently facilitate the pragmatic praxis of teaching, align organizational values with the needs of teachers, engage and sustain deliberate practices of professional development, and provide instructional support to the professionals engaged in the field.

Research Questions and Hypotheses

For the design-based mixed-methods research study the researcher, in consultation with the Scholar Cohort Lead/Advisor and Leadership, Educational Doctorate faculty designed the following research questions and null hypothesis statement:

Research Question 1: How does professional development for teachers adhere to the theoretical model of deliberate practice, if at all?

Research Question 2: How does the deliberate practice of professional development and instructional feedback inform the professional capital and professional capacity for teachers, if at all?

Research Question 3: How will providing professional development for teachers in accordance with a framework of deliberate practice improve the self and collective efficacy of teachers, if at all?

Null Hypothesis 1: There is no difference between pretest and posttest measures for teacher efficacy.

Using a quantitative testing instrument allowed the researcher to further delineate the general null hypothesis regarding teachers' sense of self-efficacy into sub-hypotheses exploring teacher self-efficacy of instructional strategy (IS), classroom management

(CM), and student engagement (SE) in relation to deliberate practice and professional development resulting in the null hypotheses statements below:

Null Hypothesis 1a: There is no difference between the pretest and posttest measures for efficacy in instructional strategies POSTSUM(IS)-PRESUM(IS) (μ-d=0).

Null Hypothesis 1b: There is no difference between the pretest and posttest measures for efficacy in classroom management POSTSUM(CE)-PRESUM(CE) (μ-d=0).

Null Hypothesis 1c: There is no difference between the pretest and posttest measures for efficacy in student engagement POSTSUM(SE)-PRESUM(SE) (μ-d=0).

Definition of Terms

Collaborative Professionalism: Hargreaves and O'Connor (2018a) used the terms collaborative professionalism to describe the ability of teachers to enhance a teacher's professional capacity through collaborative learning, professional development, and prioritization of "solidarity" and "solidity."

Collective Efficacy: Hattie (2018) defined collective efficacy as the shared belief by teachers in the ability to make progress supporting students' learning needs.

Deliberate Practice: Deliberate practice, defined by Ericsson et al. (1993; Ericsson, 2020) involved a specific criterion of engaged work and feedback by an individual and mentor aimed to develop expertise in a targeted learning domain.

Instructional Expertise: Building from Shulman's (1987) theory of teaching expertise, Grant (2022) identified three aspects of teacher instructional expertise including expert knowledge of content, expert knowledge of pedagogy related to content, and expert knowledge of how to relate and apply pedagogical approaches to specific student needs and contexts.

Praxis: A broad method of inquiry involving reflective and critical action. The word praxis originated in ancient Greece and translated to mean mindful "doing" or "action" (Regelski, 1998).

Professional Capital: In the school setting, Nolan and Molla (2017) suggested professional capital of teachers involved three aspects including (1) individual human capital (knowledge & skills), (2) social capital (collaborative learning communities), and (3) decisional capital (professional agency & autonomy).

Professional Capacity: Stoll (2020) defined professional capacity as a quality that allowed individuals and social organizations to routinely learn, change, and grow.

Professional Development: Professional development of teachers included school leaders (1) understanding and contextualizing the needs of teachers using empathetic listening; (2) facilitating collaborative dialogue that introduced and explored themes of professional capital, professional capacity, resiliency, and efficacy; (3) cooperatively working to establish personal and collective achievement goals regarding pedagogy, curriculum, and instruction; and (4) scaffolding instructional interventions that raised the effectiveness of teaching (Kosi, 2020; Morote et al., 2020).

Resilience: Research by Kosi (2020) indicated teacher resilience came from a process of confronting cognitive dissonance, moving forward through discomfort, engaging in perspective taking and empathic listening, and working collaboratively with teacher peers in spaces of authenticity and shared vulnerability.

Limitations and Bias

Limitations of the study were detailed later in the methodology and critical analysis sections of the research study. The key limitations of the study included a small

sample size and population, variables of time and teacher flexibility, and professional career change by the researcher occurring between the prototyping and testing phase of the study. The initial professional development survey was disseminated to 42 teachers at the initial study school and produced 23 participant responses. As the research process continued, the study would expand beyond the faculty of the initial study school, and ultimately 15 teacher participants were selected for a mixed methods study involving a four–eight-week professional development intervention embedded with various degrees of deliberate practice. The limitation of teacher flexibility and time was due to the asynchronous nature of the professional development intervention. Teacher participants completed the study at different rates of time and with various degrees of deliberate practice. While the limitation prohibited a uniform experience for all participants the opportunity also rendered greater depth and insight regarding deliberate practice and teacher efficacy.

The third limitation involved the teacher moving to a new school and teaching role between the prototyping and testing phases. The researcher began the study embedded at the ISS and gathered preliminary research data at the specific location. Embedding the problem of practice in one context was a limitation in itself and presented a certain degree of bias since the study school was also the school of employment for the researcher. When the researcher transitioned to a nearby public school district, the study was also expanded to other public and private school teachers, including teachers at the researcher's new school which changed the scope and reach of the study, however the nature of inquiry regarding deliberate practice and teacher efficacy remained intact.

Summary

Understanding the background and context for teacher attrition and teacher turnover established a foundation to examine the systemic drivers of low teacher efficacy at the initial study school. A theory of action was crafted to explore how schools supported the professional capital and capacity of teachers, how deliberate practice was incorporated into teacher professional development, and how self and collective efficacy manifested in teachers. Research questions regarding each aspect of the theory of action were created and the hypotheses for each proposed test variable were established. The initial study school was profiled, and limitations and researcher bias were considered in detail. Moving forward, an examination of the literature on the philosophical foundations of practice, established criteria for deliberate practice, theories of educational leadership, and professional development models for teachers was needed to provide a solid foundation for the proposed research study.

Chapter Two: Literature Review

Philosophical Foundations

Reviewing the literature began by exploring the philosophical foundations of practice, praxis, and deliberate practice within a theoretical framework of critical pragmatism. Educators who grounded actions in critical pragmatism shifted the objective of teaching from student performance or achievement of set standards of instruction to more liberating and democratic forms of educational practice continuously seeking to provide standards of care and learning rather than standards of content. A philosophy of pragmatism, as conceived by Peirce (1878) and James (1907), and later applied to education by Dewey (1916, 1938/1969) required validation from individuals who experienced and participated in a social environment of learning and recognized such environments were always changing. Educational theorists, such as Dewey (1897), believed pedagogical and curricular choices teachers made required an ever-changing process of engaging and empowering students and teachers to explore, define, and pursue education tailored to students' needs, situations, strengths, and challenges. Dewey (1897) contended "education is a process of living and not a preparation for future living" (p. 78). The pragmatic process of making the decisions by teachers and students constituted habits of practice which in turn collectively informed and defined a professional praxis of education.

The concepts of praxis and various definitions of practice and practicing were often explored by educators in domains within the broader field of education such as music education, arts, athletics, and other pursuits predicated on consistent practice requirements for an individual to achieve increased levels of performance. Participants in

such domains often sought continuous learning beyond a given moment or educational objective (Regelski, 2005, 2016). Educators seeking to emulate consistent practice habits considered how school administrators, instructional coaches, and teachers defined and used habits of practice to improve educational outcomes for students, raise teacher performance, and inform an overall standard of praxis for the profession. Jorgensen (2006) outlined four “symptoms" of philosophy which included “clarification of terms, exposing and evaluating underlying assumptions, developing systematized theories that connect with other ideas and systems of thought, and addressing questions that are characteristically philosophical” (p. 176). A historical analysis rooted in Jorgensen’s approach guided the researcher’s review of the literature on practice, deliberate practice, and praxis and identified the philosophical foundations, symptoms, and definitions underscoring the human agency of practice as rooted in knowledge and learning.

Clarification of Terms: Practice and Praxis

The terms practice and praxis, as educational theorists understood each, had a long history and multidimensional relationship. Thus, clarifying and categorizing the two terms by researchers was essential to study the relationship of practice and praxis and how each led towards proficiency learning and expertise in each field. The etymology of the word practice pointed back to the Greek term *praktikē* and was often linked with the word habit as in, “The virtues arise in us neither by nature nor against nature. Rather we are by nature able to acquire them, and we are completed through habit”(Aristotle, 1999, p.18). Contemporary psychologists and educational researchers considered practice as a specific activity designed to improve performance by an individual towards a target or objective (Ericsson et al. 1993, 2021; Ericsson, 2020; Macnamara et al., 2014). Ericsson

et al. (1993) introduced the idea of deliberate practice as a framework for identifying "conditions for optimal learning and improvement of performance" in fields such as music, chess, and other domains (p. 367). Ericsson et al. (1993) contended habits of practice accounted for individual progress towards expertise in each field more so than innate talent or ability.

Deliberate Practice

Following Ericsson et al. (1993), educational researchers continued to qualify diverse types of practice. Both Hambrick et al. (2014) and Hüttermann et al. (2014) identified a difference between structured practices, such as how soccer coaches led players in developing individual and team skills on a regular schedule, and solitary practice where an individual participated in training alone with or without specific feedback and guidance from a teacher or coach. Ericsson and Pool (2016) made distinctions between purposeful practice, aimed at improving individual performance, persistent practice involving consistent and sustained effort, and deliberate practice consistently concentrated on a highly specific task informed by immediate feedback. Another quality of practice researchers identified was naïve practice which included activities such as practicing, performing, and playing an activity and may or may not have been done by individuals for the purpose of improving. Since Ericsson et al. (1993), a wide array of educators championed teaching students how to practice as a fundamental component of formal education for all children (Bowman, 2005; Elliot, 1995; Regelski, 2005). Elliot (1995) argued a domain like music, rooted in habits of practice, should not be limited as connoisseur, talent classes for gifted students, or taught as aesthetic appreciation courses for novice participants seeking a well-rounded education beyond

traditional academic core content. Endeavors requiring deliberate practice were valuable because each modeled habit of practice and learning was perceived as valuable in all aspects of education (Regelski, 2005).

Deliberate practice applied to the context of teaching was the core topic of Dunn and Shriner (1999) and rooted in Ericsson et al.'s work (1993). Dunn and Shriner (1999) explored specific habits of teachers defining "deliberate practice as those activities which are highly relevant to improving performance and require significant personal effort to initiate and maintain" (p. 632). Hargreaves and Fullan (2012) suggested teachers required eight years of mentored teaching and practice to become consistent in achieving the intended learning outcomes teachers prescribed for students. Bronkhorst et al. (2014) investigated how teachers balanced deliberate practices for their own professional with techniques crafted for and implemented with students. Bryk et al. (2015) further explored how a "blizzard of guidance" from administrators and other school constituent groups often fractured practice habits of teachers which countered the criteria of clarity and coordination between a pupil and mentor according to Ericsson et al.'s (1993) specification of deliberate practice. Mintrop (2016) emphasized design-based thinking and how improvement in education required empathetic perspectives by school leaders seeking to understand the needs of teachers. Improvement science involved participants and teachers engaged in tasks understood by both as valuable practices, with repetition and feedback, built teaching capacity. Additionally, Mintrop (2016) outlined six principles of improvement science constructed by Bryk et al. (2015) as being problem-specific and user-centered, involving variations in performance, contextualizing the

system which produced outcomes, analyzing evidence, crafting data-informed techniques to drive improvement, and accelerating learning through networked communities.

Praxis, compared with various qualities of practice, was a more encompassing term that involved a broader process of intellectual behaviors and beliefs about human improvement. Praxis went beyond simply meeting standards of efficiency, predictable and predetermined outcomes, and operational proficiency of a particular task or skill. Praxis was understood to be a broad method of inquiry involving reflective, critical action. Like practice, the word praxis originated in ancient Greece and translated to mean "doing" or "action" (Regelski, 1998). Aristotle articulated a nuanced definition for the term praxis functioning as part of a process of intelligent thinking which Aristotle called *dianoia* (Regelski, 1998). In *Nicomachean Ethics,* Aristotle (1999) explained a three-part framework of knowledge (*episteme*) which included theory, technique, and praxis. Theory pertained to universal principles only conceived in the mind. Technique was concerned with the development of a physical skill or action focused on achieving predictable, repeated accuracy (Regelski, 1998). Praxis was a third aspect of knowledge for Aristotle, which involved action, but also involved simultaneous reflective thinking informing and instructing a meaning and a progressive goal to that action for individuals (Aristotle, 1999). Praxis was responsive to different contexts and situations including the diversity of individual capacities engaged in praxis and how standards of care were negotiated, determined, and validated in producing desirable and beneficial results (Regelski, 1998).

Praxis was understood to always be connected to the task of informing future use, adaptability, and change. Praxial educational theory was at the heart of advocacy for

music education and reform efforts expanding the justification for music education in schools because music educators believed music education involved experiential learning rooted in how to praxis (Alperson, 1991; Elliott, 1995). Music education also offered the broader field of teaching and education a framework for utilizing habits of practice within a larger praxis of "mindful doing" (Bowman, 2005). Teaching how to praxis meant teaching students how to build a capacity to continue learning, improving, and actively applying knowledge in new environments. Embracing education as a habit of praxis established the discipline of teaching more on par with fields of study concerned with actions leading to best outcomes in given situations. Regelski (2005) stated, "Most 'disciplines' of study have grown around 'fields' of praxis, such as the sciences, mathematics, and the like" (p. 14) and the fields, and education, required one to be well versed in theoretical knowledge embedded with the need to continuously practice and refine skills and techniques. Increased professional ability by an individual required practice. However, elevating the pursuits to a praxis meant individuals instituted a meaning and intentionality to every action used to constantly inform both the purpose to a given activity and a responsibility for a higher standard of care (Alperson, 1991; Elliott, 1995; Regelski, 2005).

Assumptions about Practice

The next step in analyzing the historical understanding of practice and praxis required clarifying and evaluating certain assumptions about practice. The first assumption was practice did not significantly matter when determining an individual's capacity to reach proficiency or expertise in a certain domain; the age-old question of whether nature or nurture determined success, and the extent of innate talent or ability to

predict certain outcomes. Macnamara et al. (2014) discounted practice as the primary factor of expertise noting limited variance from practice in a meta-study of various activities across disciplines. Challenging persistent notions of innate talent as the leading factor for individual success and expertise in a domain meant dealing with another assumption about practice; all types of practice were the same. Ericsson et al. (1993) introduced the idea of "deliberate practice" as a framework for explaining individual expertise and suggested deliberate practice differed from other types of practice including naive practice, solitary practice, structured practice, and purposeful practice. In response to the assumptions of Macnamara et al. (2014) and Ericsson (2020) outlined key features of deliberate practice noted in Table 1.

Table 1

Criteria of Deliberate Practice

1.	The task must be well defined with a clear goal and be fully understood by the participant.
2.	The participants need to be able to perform the task by themselves
3.	The participants need to gain immediate informative and actionable feedback on each performance of the practice task that allows them to make appropriate adjustments to improve.
4.	The participant needs to be able to "repeatedly perform the same or similar tasks"
5.	The practice task must be designed and performed in accordance with individualized instruction and guidance of a teacher.

Note. (Ericsson, 2020, p. 1115)

Ericsson and Harwell (2019) revised the meta-analysis findings of Macnamara et al. (2014) attributing a 61% variance for individuals who improved learning and performance capacity using deliberate practice compared with other approaches to improvement.

The significance of practice was connected to another key assumption; the quantity of practice rather than the quality of practice was the key determining factor in

an individual's progress towards expertise in a certain endeavor. Popular authors like Gladwell (2008) quantified Ericsson's et al. (1993) model of practice as a generalized notion of "10,000 hours," of practice necessary for an individual to gain expertise. Levetin (2006) further suggested "ten thousand hours of practice is required to achieve the level of mastery associated with being a world-class expert-in anything" (p. 197). A considerable debate and discussion on certain qualifying types of practice such as structured practice, purposeful practice, and deliberate practice and how the different forms of practice produced various results remained among research authors (Ericsson & Harwell, 2019; Macnamara et al., 2014). However, the assumption there was a magic number of hours that determined a standard of expertise was recognized as an oversimplification of the quality of practice (Ericsson, 2020).

A third assumption argued deliberate practice was a form of advanced practice existing without continuity or connection to previous rudimentary skills. Continuity was connected to a key aspect of Dewey's (1938/1969) theory of an educational experience in which present learning was always contextualized by individuals' previous learning experiences and sense of progress. Teachers who sacrificed the practice of core fundamentals in a discipline in search of untethered, advanced practice broke down the learning continuum, or taxonomy of educational objectives, as conceived by Bloom (1956). Expert musicians, athletes, and physicians were constantly attentive to the routine fundamentals of practice (Clear, 2018; Regelski, 2005). Clear (2018) argued experts built and layered higher order thinking on top of the practices each engaged in at the base level similar to Bloom's (1956) taxonomy of learning. Dewey (1938/1969) believed supporting students to find academic success and long-term well-being was a complicated task not

easily defined a simpler approach to mastering a specific skill. However, the two were not related. Dewey's (1938/1969) theory of educational experience suggested continuity must be fostered through transformational teaching, persistence, routine practice, creativity, and collaboration beneficially applied in one situation and then another situation to inform a discipline or habit of learning.

A final assumption about practice was the relationship between practice and praxis. Practice could not be connected to a larger concept of praxis without an intentionality to elevate the purpose and meaning behind methods of practice. Praxis had to encourage persistent engagement, learning, and action in future contexts and situations which required developing new practice habits (Jorgensen, 2006). In similar fashion, teaching students how to praxis went beyond what Regelski (2002) deemed as mere instruction. Praxial education focused the intent of teaching on encouragement, perseverance, and student control of learning (Regelski, 2002). Aligning instruments of deliberate practice into a continuous cycle of reflective praxis required a systemized theory of critical pragmatism.

A Systemized Theory - Critical Pragmatism

Pragmatism appeared in the philosophical literature of Peirce (1878), James (1907), and Dewey (1938/1969), who each derived notions of pragmatic inquiry, or praxis, inclusive of logic, method, and social context (Ormerod, 2020). Peirce (1878) developed the philosophical term pragmatism to explain how theoretical logic considered the purpose and practical application of an object. James (1907) contended, "Pragmatism is uncomfortable away from the facts" (p. 35). Pragmatism was a constant reflection on practice methods as applied in given situations and deemed valid or invalid (James,

1909). Dewey (1938/1969) believed learning involved a continuous cycle of putting theory into practice and observing the outcomes to move forward. For an educational practice to be valid as praxis, the practice needed to be interactive, experiential, and pertain to past, present, and future learning (Dewey, 1938/1969). The essential question for Dewey was how individuals were consistently practicing as informed practitioners in the individual's domain of inquiry.

A cornerstone of Dewey's (1916) educational progressivism was the belief in a democratic imperative for education reflecting and strengthening democratic societies. For Dewey education was not simply about socializing students into existing class structures or individual preparation in content for future economic participation. Dewey (1916) stated, "A democracy is more than a form of government; it is primarily a mode of associated living and forums for individual expression and shared experience" (p. 87). In an educational setting, the mode of associated living included all persons involved including students, teachers, administrators, other school personnel, and community members, creating the legacy of early progressive educational theorists like Dewey. Contemporary understandings of critical pedagogy and human relations management, such as Abrahams (2005), viewed education as a process of individual and social transformation including five essential characteristics; "(1) Education is a conversation, (2) Education broadens views of reality for both students and teachers, (3) Education is empowering, (4) education is transformative, and (5) Education is political" (pp. 4-5). Administrators who recognized the shared transformational capacity of education were best equipped to foster a community of learners including empowered teachers who served as agents of change.

Dewey (1938/1969) suggested the field of education required a pragmatic theory of experience. Experiences were perceived as positive or negative and as promoting growth and learning or inhibiting it. Educators needed to identify criteria for defining a good student experience. Dewey (1938/1969) stated, “The two principles of continuity and interaction are not separate from one another. They intercept and unite. They are [the] longitudinal and lateral aspects of experience” (p. 44). Pragmatism concerned itself with human habits of experience and the ability to learn and persist (Westerlund & Juntunen, 2005). In short, critical pragmatism was the philosophical criteria on which praxis, and the underlying deliberate practices, were built.

Questions and Enduring Understandings

The essential question regarding implementing praxial teaching methods into education returned to the idea of what students, teachers, and school leaders should know and be able to do. Essential questions of what to teach in each time and place were routinely answered by understanding learning was a continuum and an enduring cycle of praxis. Westerlund (2003) argued a learning experience was both an actual product of “doing” and an event of continual reflection and understanding. Westerlund went on and described learning as “the double status of individual experience” (p. 46). The connection, or continuum, was what made critical pragmatism a dynamic philosophical idea potentially guiding praxis for teachers. Dewey (1929) stated: “There is the individual that belongs in a continuous system of connected events which reinforce its activities, and which forms a world in which it is at home, consistently at one with its own preferences, satisfying its requirements” (p. 244).

Westerlund (2003) further defined the process stating, “The phenomenal side of experience is a process of simultaneous doings and under-goings, which means that there is always a continuum from individual action to social action and context” (p. 48). Finally, Westerlund provided an adequate term in “continuum” to define the process of learning through experience. A pragmatic continuum of education included practical, emotional, and intellectual properties of an experience without preference to one or the other (Dewey, 1934). Thus, a historical analysis of praxis, deliberate practice, and the foundational philosophy of critical pedagogy led scholars back to the present moments in which scholars existed. For educational pragmatists, such as Dewey (1934), learning and education were always rooted in the present, in meeting students, teachers, and school leaders where the individual was, and choosing together how collectively, all learners should take the next steps towards future learning.

Deliberate Practice of Teaching and Educational Praxis

In education, deliberate professional development practices for teachers used consistent methods of engagement and promoted learning and professional growth. A continuity of learning inspired pragmatic educational theorists such as Pierce (1878), James (1907), and Dewey (1938/1969) who recognized teaching and learning involved a continuous cycle of putting theory into practice and observing the outcomes to move forward. For an educational experience, such as professional development with teachers, to be valid, the experience needed to be interactive, experiential, and pertain to past, present, and future learning (Dewey, 1938/1969). The essential question was not simply what a teacher knew about a given subject and was able to teach at a given moment, but

how a teacher was consistently practicing, becoming a more informed practitioner in the art and science of teaching.

The debate about deliberate practice was pertinent to the professional development of teachers because without genuine understanding of the capabilities of deliberate practice for the craft of teaching, school leaders and educators were left to engage in diminished habits of practice and inconsistent and isolated outcomes. Ericsson and Harwell (2019) intended for the theory of deliberate practice to apply to collaborative fields like teaching. Dunn and Shriner (1999) specifically applied the criteria of deliberate practice with teachers and noted teachers were able to identify specific routines leading to superior performance over time and observed objective results in an educator's improved ability to teach. Gore and Rosser (2020) documented teachers who described increased levels of professional learning, stronger collaborative relationships, and a desire to continue learning when professional development was shifted to focus on improving pedagogical practice rather than achieving content-specific learning targets. Deliberate practice of teacher-centered professional development focused on increasing professional capacity and allowing for greater emergence of self and collective efficacy (Grant, 2022; Hargreaves & O'Connor 2018a, 2018b; Stoll, 2020)

Schools instituted an organizational mechanism to engage teachers in deliberate practice through the creation and use of Professional Learning Communities (PLC). PLCs were widely used in business fields as a professional practice to build collegiality and collaboration (Leclerc et al., 2012;Vescio et al., 2008). Williams et al. (2008) explored how PLC operated in education including specific organizational characteristics which included leadership, culture, and the ability to build capacity, and the operational

attributes of PLCs which included professional development for teachers, collection and use of data, and promotion of trust within a school community. Several researchers examined how PLCs operated in schools and concluded the use of PLCs created a greater sense of professionalism in teachers, encouraged collaboration with other teachers, improved student learning outcomes, and was only limited in the ability to be consistently used in the daily schedule of teaching. (Antinluoma et al., 2018; Jensen et al., 2016; Williams et al., 2012).

Professional Educators and Teaching

Teachers and school leaders understood education was a complex social endeavor rooted in human relationships (Mayo, 1939) including a psychological and sociological interplay between teachers and students which promoted transformational growth or demanded authoritative compliance and alignment. Dewey (1916) argued faithful democratic societies recognized school communities, acting primarily as social institutions, modeled and cultivated an associated way of living and learning. Teachers were the most direct contact between the school and the student and thus essential in promoting student learning outcomes. Furthermore, teachers who were confident in the ability and the collective work of the institution were powerful motivators for student achievement. Hattie (2018) observed collective teacher efficacy was the highest rated indicator for student learning based on a meta-analysis of the data. Taking the concept to heart, school leaders sought to encourage the highest level of confidence and growth from teachers. To promote growth, educators had to first understand the needs of teachers and the factors capable of building professional capital for teachers.

Needs of Teachers

Like Maslow's (1943) hierarchy of needs, educational researchers found teachers and professional personnel had certain needs to function and excel in the workplace. Costa and Kallick (2017) defined categories of teacher needs (see Table 2).

Table 2

Needs of Teachers

Cognitive Needs	Teachers must be cognitively and emotionally challenged, continually planning for, engaging in, and reflecting on learning experiences
Physical Needs	Teachers must feel safe, secure, healthy, fit, resilient, and strong
Emotional Needs	Teachers must be stress free, in a trustful, non-evaluative environment
Social Needs	Teachers must be collaborative, interdependent, reciprocal, relationships
Spiritual Needs	Teachers must transcend the trivial in curriculum and be dedicated and committed to achieving the larger value of what they do as purposefully leading to a better, more beautiful, and harmonious world.

Note. (Costa & Kallick, 2017)

Educational leaders had to first provide a foundation of support meeting the needs of teachers in order to build the professional capital of teachers. Nolan and Molla (2017) elaborated, as a teacher's needs were met, professional capital grew which expanded individual knowledge and skills (human capital), increased routine collaboration with fellow educational professionals (social capital), and teacher's exercised degrees of autonomy and freedom to make pedagogical and curricular decisions (decisional capital).

Professional Capital

School leaders learned to understand professional capital as a distinction of human capital. From an economics point of view, human capital involved acquiring skills and talents through education, study, or apprenticeship (Smith, 2018). Bourdieu (1986)

explained human capital as a concept of cultural capital and social capital and further explored how institutions and societies balanced various degrees of capital and power. In the school setting, research suggested professional capital of teachers involved three aspects including (1) individual human capital (knowledge & skills), (2) social capital (collaborative learning communities), and (3) decisional capital (professional agency & autonomy) (Nolan & Molla, 2017). Administrators who sought to lead, support, and manage teachers needed to take a balanced approach to building each of the aspects of professional capital; empowering teachers to act upon and be responsive to professional development strategies and personal growth plans.

The professional capital of teachers was used and expanded by teachers within the collaborative design and function of an educational environment. Some institutions embraced a collaborative practice for teacher professional development in line with Dewey's (1916) democratic imperative for education, while others turned towards authoritative models characterized by coerced and mandated alignment strategies, and less interest and attention to building the individual professional capital of teachers. Well-intended efforts to educate and support teachers often went astray when teachers became prescriptive rather than collaborative. Even when educators aimed for collaboration, if forced and imposed upon teachers, or appeared disconnected from a continuity of practice, teacher resentment and further disconnection occurred (Hargreaves & O'Connor, 2018a). Poor models of professional development decreased self and collective efficacy of teachers and worked counter to intended aims to strengthen a community and achieve a mutual goal (Yagolkovskiy, 2015).

Professional Capacity

Professional capacity was recognized as the knowledge and ability to optimize one's performance. Authors of *The Glossary of Education Reform* took the concept further, recognizing professional capacity, "may also encompass the quality of adaptation - the ability of a school or educator to grow, progress, or improve" (Great Schools Partnership, 2014, p. 1). Stoll (2020) defined professional capacity as a quality that allowed individuals and social organizations to routinely learn, change, and grow. Although educators cited indicators for professional capacity and collective efficacy, there was no standardized process for educators to apply the indicators across different situations. A more clearly defined concept of deliberate practice, as articulated by Ericsson et al. (1993) and elaborated upon by Ericsson and Harwell (2019), offered educational researchers a path forward. Professional teachers required deliberate practices designed to raise professional capacity and in turn nurture the emergence of self and collective efficacy and reaffirm teacher confidence and belief in the ability to support student learning.

To provide teachers with authentic avenues for enhancing professional capacity through collaborative learning Hargreaves and O'Connor (2018a) argued professional development must meet two essential requirements of "solidarity" and "solidity." Solidarity was the establishment of authentic relationships based upon collegiality and mutual respect and should be fostered prior to deciding upon or acting towards an educational objective (Hargreaves & O'Connor, 2018b). Solidity is what defined the clarity of a collaborative learning experience for teachers as each co-created educational goals, sought substantive information, practiced with rigor, and reflected on the practical

feedback teachers gave and received from each other (DeWitt, 2019; Hargreaves & O'Connor, 2018b). Taken together, Hargreaves and O'Connor (2018a, 2018b) suggested solidarity and solidity provided a model of collaborative professionalism consistently nurturing the relationship between teachers, fellow educators, and school leaders.

Collaborative professionalism corresponded with a larger societal concept of belonging. Powell and Toppin (2021) offered as an alternative to authoritative and hierarchical systems of power, oppression, and compliance. The key elements of creating belonging in a collaborative environment included allowing for multiple perspectives and identities, encouraging honest self-reflection, and offering "bridges" by which individuals with different views, experiences, and cultures engaged with one another (Powell & Toppin, 2021). In a community of belonging, teachers were not seen as outliers, or less than other individuals engaged in the educational process. Expanding the inclusive environment for learning was a foundational principle of both critical pedagogy and culturally responsive teaching practices arguing education should be a transformational process for all involved including students, teachers, school leaders, and the broader school community (Aronson & Laughter, 2016). Teachers desired more than a professional obligation to serve in school communities responsible for teaching students, but also a sense of belonging in a professional practice valuing individual learning needs and continuously providing opportunities for teachers to build professional capital through self-reflection, collaboration, and resilient action.

Collective Efficacy and Resilience

The collective efficacy of teachers, identified by Hattie (2018) as a leading factor for student learning, was contingent upon pre-existing elements of professional capital

and collaborative professionalism. Efficacy was also understood to transition from the individual, or self, to the collective. Hattie (2018) defined collective efficacy as the shared belief by teachers in the ability to make progress supporting students' learning needs. However, teachers had to first build self-confidence and resilience before teachers could share in a sense of collective efficacy. Research studies by Chen et al. (2020) and DeWitt (2019) demonstrated self-efficacy was a pre determinant for the emergence of collective efficacy. Organizational change of any type, and especially change concerning difficult subjects like race, gender, and socioeconomic status, required self and collective efficacy of teachers, and the ability of all teachers to be resilient when facing uncomfortable and challenging topics. In a study concerning culturally responsive teaching and teacher efficacy, Chen et al. (2020) observed many white teachers diverged from teachers of color. Teachers of color persisted in advocating for necessary changes and found collective efficacy with one another, while white teachers more often indicated a lack of self-efficacy to speak or act with conviction about issues of diversity and inclusion, showed less resilience, and did not progress to a collective role.

When self-efficacy diminished, teachers could not push through difficult challenges using resilience and did not build capacity or collective efficacy. Resilience was contingent upon facing a difficult educational problem or change. Research by Kosi (2020) indicated growth and the emergence of resilience in teachers involved a collaborative process of experiencing cognitive dissonance, moving forward through discomfort, engaging in perspective taking through empathic listening, and working with peers in educational environments allowing for authenticity and vulnerability by professional teachers. Morote et al. (2020) further observed increased resiliency of

teachers was supported through positive relationships, an atmosphere of belonging and inclusion, multiple avenues of participation, and mental health awareness. Resiliency of teachers and other members of a school community emerged as a necessary link between self-efficacy and collective efficacy (Kosi, 2020; Morote, 2020). Researchers such as Hattie (2018) shifted attention towards exploring how educational leadership helped teachers achieve higher levels of professional capacity, self-efficacy, and collective efficacy involving examining management theory, leadership theory, and organizational change processes. At root remained a systemized theory of critical pragmatism and the comprehensive deliberate practices used by all educational professionals which collectively informed a praxis of education.

Educational Leadership

Understanding how organizational management theory, leadership styles, organizational change, and curricular administration informed the professional development of teachers was essential to realizing alignment needs of school communities connected to individual and collective efficacy. Teachers represented only one perspective of multiple constituent groups operating in schools including students, parents, administrators, and community members. Reviewing educational leadership literature addressed how school leaders were successful at building school culture, leading necessary change, clarifying curriculum and instruction standards, and empowered expert teaching through the practice of professional development.

Organizational Management

Organizational management theories in education included practices aligned with individual and group needs for efficiency and innovation. Early management models

grew out of the industrial revolution, such as Fayol's (1949) Fourteen Principles of Management where hierarchical systems of authority when decisions came from the top-down, were clear to the purpose, and promoted maximum efficiency. Critiquing the human relations capacity of the models, Weber (1947) observed, concerning employees, "psychological and social factors in the workplace were ignored" (p. 8). Mayo (1939) believed a human relations model of administrative theory was better suited for fields where human interaction and collaboration were vital and necessitated interpersonal leadership skills important to building the morale and sense of belonging for participants in an organization. The fundamental understanding was social and psychological needs of individuals were powerful foundational forces for the professional capacity of all personnel.

Thus, a human relations model became the basis for educational leadership. Lunenburg and Ornstein (2012) contended communication channels were paramount in a human relations model as each promoted "democratic rather than authoritarian leadership" (p. 10). Members of The National Policy Board for Educational Administration (2015), stated

> This work requires educational leaders to build and strengthen a network of organizational supports—the professional capacity of teachers and staff, the professional community in which they learn and work, family, and community engagement, and effective, efficient management and operations of the school. (p. 10)

School management was indelibly connected to building human/professional capacity. Participatory management models strengthened organizational networks (McGregor,

1960), and worked to fulfill the democratic ideals of Dewey (1916); nurtured and promoted the professional capacity of school leaders, teachers, and students. Despite the development of management theories grounded in human relations, school leaders continued to struggle to implement and manage the complex educational systems of school communities.

In 2017, the Education Policy Center at American Institute for Research (Rowland, 2017) released an examination of principal professional development asserting many principles continued to lack access to relevant professional development (Ikemoto et al., 2014). According to MetLife, Inc. (2013) 75% of principals believed the job to be too complex, and on average over half of all principals left school after a mere three years. In response to the statistics, policy advocates made an assertive call for (1) access to adequate, administrative focused professional development for principals, (2) consistent mentoring and coaching efforts which research showed improved school leader performances, and (3) options for how states and localities could align commitments to educational standards, school funding needs, and community resources to improve outcomes for schools (Rowland, 2017). The findings were not a new revelation. Dating back to 2014, a joint brief from the NAESP and NASSP titled *Supporting Principals in Implementing Teacher Evaluation Systems,* offered specific recommendations to bolster teacher professional capacity (as cited in Childress, 2014). Two key findings included school principals required continuing training, credentialing, and professional development regarding building professional capacity and supervising and supporting teachers. Childress (2014) argued Title II funds be earmarked for such efforts. The second finding was teachers were best empowered with personalized professional

development connected to a professional growth plan and teachers needed adequate time to collaborate with other teachers to practice newly acquired instructional practices.

Leadership Styles

Ancona (2005) suggested leadership in uncertain times required educators to reexamine not only the personal traits or characteristics of a leader, but more importantly the actions leaders do with the organizations including sense-making, relating, visioning, and inventing. Pir (2020) contended, while human-centered leadership required adaptability and resilience by a leader, leadership was also concerned with facilitating shared mindsets of care, abundance, wellbeing, production, interconnectedness, collective and on-going learning, and practice (3:05). Responsive leadership, as defined by Jenkins-Scott (2020), involved developing core attributes of curiosity, humility, empathy, and resilience; all human-centric and collaborative. Leadership attributes worked in tandem with managerial behavior leaders demonstrated including being task-oriented, relationship-oriented, encouraging participation, and distributing leadership within organizations (Jenkins-Scott, 2020; Likert, 1967).

Responsive educational leadership recognized education involved a multitude of individuals engaged in a complex social endeavor and educators often resisted and were unresponsive to factory or machine models of management based on authority, efficiency, and production (Mayo, 1939). Transformational leadership recognized the professional capacity of teachers was part of a broader shared effort to build a culture and an environment conducive to student learning while also strengthening the communal bonds existing within and beyond the school (Bass & Riggio, 2006; Desravines et al., 2016). Another management practice emerging from the research was the idea of

distributive or collaborative leadership (Hauge et al., 2014; Heck & Hallinger, 2009). Administrators who distributed responsibilities and collaborated with other educational leaders let go of some aspects of authority to inspire others. Hauge et al. (2014) found team leadership and collaborative leadership were vehicles of change and school improvement. A similar study by Heck and Hallinger (2009) found distributed leadership increased the academic capacity of the entire school community and improved student learning.

Jenkins-Scott (2020) and Heifetz (2021) stressed human-centric leadership and the human-to-human processes adaptive leaders used raised core attributes of curiosity, humility, empathy, and resilience for both them and others. The approach affirmed the belief education was a human endeavor and not always efficient or linear in practical application. Understanding the human process of leadership gave leaders the ability to shift gears and perspectives from technical goals to individuals who required competency and confidence in achieving the goals (Mayo, 1939). Human-centric leadership did not mean leaders did not assume the authority to make decisions and set directions for organizations. Authoritative leadership was often misunderstood, according to Goleman (2017), who observed authoritative leaders were most likely to achieve the intended results. However, authoritative leadership was different from autocratic, totalitarian leadership characterized by demands and directives never to be questioned by subordinates. Goleman (2017) revealed authoritative leaders accomplished set objectives and did not avoid the responsibility and duty of the position. However, understanding the duties and responsibilities, high performing leaders employed adaptive, human-centric leadership to understand situations and then facilitated, managed, made decisions,

delegated, and communicated a path forward (Goleman, 2017). Successful leaders acted with authority while also being recognized by the teams as supportive and human centric.

Progressive educators had long argued education was about repeatedly and actively pursuing knowledge, seeking democratic cooperation and collective agency, and promoting continued learning through experiential learning. From a pragmatist perspective, teaching and learning rested upon a human process of discovering and rediscovering the validity of an object through action. Again, James (1909) stated, the truth is "true for him who experiences the workings" (p. 177). A pragmatic philosophy of responsive educational leadership involved those who were being led, and the leader, in essential roles mutually verifying and validating learning and growth was taking place. Validation and verification of shared truths and experiences was an essential characteristic of pragmatic philosophy and pragmatic leadership (Dewey, 1938/1969; James, 1909).

Responsive educational leadership was also directly involved with promoting justice, equity, and mutual respect in respective social constructs. Dewey (1897) stated "the school is primarily a social institution" (p. 77). Schools, sports teams, music ensembles, professional learning cohorts, community organizations, and other groups conveyed cultural values and traditions while reproducing and modifying the cultures and organizations. Educational leaders who inspired cultural dialogue and collaborative work crossed lines of social, economic, and political division and had the capacity to inspire learning and democratic discourse and civic participation. Dewey (1916) saw democracy as more than a form of government and rather, "primarily a mode of associated living, of conjoint communicated experience" (p. 87). In Dewey's (1916) mind, schools were to be

places where democracy was not only taught and understood as the principle of American society, but places where democratic living was vibrant and practiced. Through the instrumental practice of democratic values pragmatically applied, reaffirmed the socialization of students and teachers as stewards and participants in society and used as a mechanism for social progress.

Reframing the role of educational leadership as responsive, pragmatic action nurturing the collective capacity to learn breathed life and purpose into shared endeavors such as enacting organizational change, making technological innovations, and seeking justice through ethical and equitable means. Leaders emerged reimagined as facilitators, agents of democratic cooperation, and transformational coaches. According to Fried (2016), teaching and educational designs were to be empathetic, iterative, and interdisciplinary, and should lead to continued learning aligned with Dewey's (1916) "continuity of knowing" which routinely modified and changed a society for the better and was at the heart of progressivism. Responsive educational leadership was about leading habits of practice and meeting the needs of individuals to make the most of the given moment. The practice continuously grounded education and educational leadership in the need to be responsive to a present context and situation.

Reflective practice by educational leaders was a core characteristic of the role and responsibilities of educational leaders. Dewey (1916) believed education was both an individual experience and a collective shared phenomenon in a social context. From Dewey's view, educational leaders needed to model a broad pedagogical praxis embracing leadership and learning as (1) conversational, (2) broadening views of reality for both students and teachers, (3) empowering, (4) transformative, and (5) political in

nature (as cited in Abrahams, 2005, pp. 4-5). Academic and professional frameworks for leaders categorized a broad range of contexts and styles of leadership individuals used to build the professional capacity of themselves and individuals intended to lead, to implement organizational change, and to navigate situations and environments. For example, the Conceptual Framework for the Doctor of Education in Leadership through Lindenwood University specified four domains of leadership including human centric; organizational change; ethics, equity, and social justice, and technology (Lindenwood, 2024. In similar fashion, the *Professional Standards for Educational Leaders* listed 10 leadership standards of practice ranging from establishing a shared vision and core values, articulating professional norms, curriculum and instruction, professional development for teachers, to community engagement and communication (National Policy Board for Educational Administration, 2015).

The needs, responsibilities, and practices of school leaders also aligned with the human relations model of educational management in the same way teachers' needs were specific to human relations management (Lunenburg & Ornstein, 2012). Initiatives such as New Leaders suggested successful programs provided consistent opportunities to practice, gave regular feedback through mentoring and coaching, were tailored to principals' specific needs and time in the careers, and involved a network of peers (Desravines et al., 2016). Further research suggested school improvement efforts had to let go of the idea of solving educational challenges as if the challenges were technical problems and instead focus on human relations and communication. Helsing et al. (2008) contended since schools existed in an ever-changing context confronted with diverse circumstances and individuals the schools must constantly adapt and the adaptive work

called for professional development described as developing, flexible, and open to change.

Goleman (2017) emphasized the emotional intelligence of leaders and the ability to develop "self-awareness, self-management, social awareness, and social skill" necessary to make managerial choices and get results from individuals (p. 1). Coercive, authoritative, affiliative, democratic, pacesetting, and coaching styles of leadership, further categorized by Goleman (2017), were derived from the emotional intelligence and the professional capacity of an educational leader (p. 1). Yukl and Mahsud (2010) stressed the importance of leaders to be flexible and adaptable to the contingencies of leadership, to understand various managerial roles of leadership, and to be well versed in case studies of leadership including managing crisis and the contexts and environments of flexible and adaptive leadership. While understanding how flexible and adaptable leadership achieved measurable results was important, the theories and categorizations often failed to address the fundamental human-centeredness of leadership, especially educational leadership. Leadership implied leading someone and never existed in a vacuum. Heifetz (2021) cautioned adaptive leadership was often misinterpreted and misused by leaders as a mechanism of authoritative management placing technical issues above the human-to-human process of leadership. Collazo (2021) clarified leadership was not simply directing or getting an individual or team to do what you prescribed them to do to solve a problem. Collazo (2021) and Heifetz (2021) believed an authentic and responsive leader cultivated human relationships within an organization, validated a shared vision among all members, and continuously worked to empower the best from themselves and the team as all individuals worked to learn, grow, and improve.

Organizational Change

Leading and managing organizational change was a complex process and required a comprehensive approach and deliberate practice. Hayes (2022) provided a thorough examination of every step of organizational change including diagnosing the need to change, preparing the environment for change, planning change, guiding new practices, sustaining change, and reflection. Every step was considered vital by leaders and organizations to continually validate the process of change, communicate with members of an organization as each experienced change, and most of all learn from the change process which could then be applied by individuals and groups facing new situations and needs (Hayes, 2022).

A fundamental challenge for educational leaders was how organizational change involved turbulence for individuals and groups in an organization. Lewin (1951) resonated with school leaders as they sought change by destabilized existing habits and practices no longer useful or valid, installing new practices, and working until new habits became consistent practices and eventually no longer required guided practice and supervision by organizational managers and leaders. Kotter (1999) proposed an eight-step model for organizational change applied to education. However, Hayes (2022) noted education often resisted efficiency and expediency when long standing community norms and practices were entrenched in an organization. The McKinsey 7S model as designed by Waterman et al. (1980) offered a more cyclical process of change in contrast to the linear approach of Kotter (1999). The Hard Ss of strategy, systems, and structure in some ways mirrored the administrative responsibilities of leaders and managers and needed to be done well to demonstrate competence, trust, and legitimate authority for an

organization. In the same fashion, the Soft Ss of the McKinsey 7S model were style, staffing, and skill and spoke to the professional development needs of teachers and the deliberate practices used consistently to build professional capacity.

Curriculum Alignment

A fundamental challenge for school leaders seeking organizational change was to improve instructional practices through professional development for teachers while also demonstrating adherence to national, state, and local standards of curricula. Honig and Hatch (2004) argued broad level federal, and state standards-based reforms did not come embedded with how school leaders should blend the vision and mission of schools, including professional development for teachers, with new policy mandates. Educators needed to actively build cohesion between the two by aligning instructional practices with standards-based curricula and by ensuring leaders were protected from accountability measures (Honig & Hatch, 2004). The task proved to be complex as curricular cohesion depended to a large degree on the professional experience of educators (Reinhorn et al., 2017), and because teaching in general was a complex social phenomenon involving pedagogical practice, content knowledge, professional collaboration, and student engagement (Roseler & Dentzau, 2013). In a study of six schools, Reinhorn et al. (2017) documented how leaders established cohesion between school needs and accountability mandates by being directly involved in instructional practices and curricular planning and having evaluation protocols and professional development programs providing support to teachers. Similarly, Stosich (2018) found consistent professional development meetings focused on pedagogical practice, in line

with teacher supervision, able to meet Common Core State Standards (CCSS) and students' specific learning needs.

Curriculum alignment and cohesion was not seen as a onetime affair. Rather, educators stressed leadership required a consistent review of the curriculum and renewal of purpose to align student needs with learning expectations (Glatthorn, Jailall, & Jailall, 2017). The annual use of curricular maps aligned federal, state, local, school, and specific classroom learning expectations became a routine objective for high functioning schools (Glatthorn, Jailall, & Jailall, 2017; Jacobs, 2004). Furthermore, Voogt, Pieters, and Handelzalts (2016) observed collaborative design teams, where teachers were tasked with aligning and creating new curricular approaches, improved the pedagogical practice of teachers, rallied stakeholder appreciation, and supported continued instructional change that fostered school improvement.

Curricular Standards

Curriculum alignment regarding a particular course required teachers and administrators to place subject matter into context regarding state standards as well as broader standards of quality educational practice and learning (Missouri Department of Elementary & Secondary Education [MODESE], 2016). For each content area, grade level expectations were articulated in connection to thematic content forming the outline for specific courses. Beyond the state learning standards, frameworks for learning such as P21's Frameworks for 21st Century Learning offered an extended context by which administrators best prepared students. The P21 Framework went beyond subject standards and included interdisciplinary skills, life & career skills, learning & innovation skills, and information, media, & technology skills (Battelle for Kids, 2019). Finally,

courses would also need to meet the standards of learning articulated in a school's mission and vision. For example, if a district had a mission and vision committed to critical thinking, responsibility, and global awareness, then the values needed to be evident in each course's curricula. Administrators who understood how teachers aligned specific courses to the state standards, broader learning frameworks, and connected curricula to the specific vision and mission of their school were best prepared to support professional development practices for teachers promoting teaching expertise and organizational change.

Evidence of the standards went beyond course descriptions. An administrator did not just demand teachers to create curriculums outlining or pointing to standards. Rather, administrators facilitated calendar-based curricular planning and motivated teachers to put the curriculum into action with embedded curricular objectives in each lesson plan and learning activity with students. Jacobs (1997) presented a calendar-based model of curricular planning and mapping school districts used to bring the curriculum guide out of the file cabinet and put the objectives into action during the school year. The curriculum map became a living document, and an administrator immediately assessed the alignment of the curriculum by looking at the calendar planning for a particular subject.

Curriculum Renewal

However, implementing a multidimensional curriculum supporting organizational change meant educational decisions were in a constant state of flux. Curricular choices differed from student to student, classroom to classroom, and year to year. Accepting the constant need for curriculum renewal was a crucial, time-consuming affair for teachers,

and often the focal point of professional development (Briggs, 2007). Briggs (2007) continued, “Continuous curricular planning includes awareness and responsiveness, participation and teamwork, and use of evaluation for adaptive change” (p. 682). Continuous curriculum planning and practice was rooted in pragmatism, critical pedagogy, and the “social praxis” of education (Regelski, 2009). However, because the process required continuous, pragmatic verification in each context of learning, continuous curriculum planning constantly resisted prescribed or generalized manners of instruction in favor of adaptable means of instruction modified by a teacher to best engage students and adapt to student needs and the ever-changing dynamics of learning.

Briggs (2007) presented a precise criterion under the definition “Continuous Curricular Planning;”

Table 3

Continuous Curricular Planning

a.	*Continuous and Frequent Curricular Planning Processes*: A continuous planning department gives frequent attention to appraising the curriculum for renewal and redirection and engages in ongoing planning efforts. It uses organizational structures and processes to facilitate curriculum planning as an ongoing routine.
b.	*Awareness and Responsiveness*: A continuous planning department is attuned to and responsive to internal and external factors that may influence curriculum and is proactive with respect to future influences.
c.	*Participation and Teamwork*: A continuous planning department maintains a high level of faculty involvement in curricular issues
d.	*Use of Evaluation for Adaptive Change*: A continuous planning department gathers and uses relevant information about program successes and failures in the curriculum development process.

Note. (Briggs, 2007, p. 682)

The criteria of continuous curricular planning offered administrators and teachers a process of continuous renewal of a school’s mission, value, and purpose. Curriculum

renewal through continuous planning required an institutional commitment to reflection, reform, and school improvement.

Professional Development for Teachers

Researchers explored how professional development and instructional coaching interventions for teachers raised the collective efficacy of teachers and how specific methods of deliberate practice and coaching informed a praxis for the field of education. The main objective of the approaches was to improve the morale and confidence of teachers in the ability to instruct and inspire learning with the students and the attitude each felt regarding the mission, values, and work of the respective schools and institutions. Hattie (2018) identified the collective efficacy of teachers as a leading factor for improving student learning and educational outcomes. However, to understand how to build collective efficacy in teachers, leaders had to understand the connection between self- efficacy as a predetermining factor for the emergence of collective efficacy (Chen et al., 2020; DeWitt, 2019). Furthermore, Chen et al. (2020) and Kosi (2020) reiterated efficacy was a form of confidence associated with professional and personal resiliency. Research by Kosi (2020) indicated growth and resilience came from a process of individuals recognizing cognitive dissonance, moving forward through discomfort, engaging in perspective taking and empathic listening, and allowing teachers to work collaboratively with peers in spaces welcoming of authenticity and vulnerability. Morote et al. (2020) further observed school wide resiliency efforts were supported through positive relationships, an atmosphere of belonging and inclusion, multiple avenues of participation, and mental health awareness. The resiliency of teachers and the entire

school community working together to learn is what transformed self-efficacy into collective efficacy (Kosi, 2020; Morote, 2020).

Improving collective efficacy of teachers was contingent on certain supportive measures consistently provided to teachers through professional development programs. Professional development programs were implemented as core responsibilities of administrators and instructional coaches and often included; (1) understanding and contextualizing the needs of teachers using empathetic listening; (2) facilitating collaborative dialogue and addressing themes of professional capital, professional capacity, resiliency, and efficacy; (3) cooperatively working to establish personal and collective achievement goals regarding pedagogy, curriculum, and instruction; and (4) scaffolding instructional interventions to improve teaching and student learning (Kosi, 2020; Morote, 2020). Understanding instructional coaching and the role instructional coaches played in meeting the needs of teachers was essential to improving educational outcomes for teachers and students and began by explaining how instructional coaching and coaches served a praxial approach to education and learning and guided the deliberate practices of teachers.

Teaching praxis, as explained by music education scholar Regelski (2016), was the overall reflective process teachers used to improve the standard of care intentionally and continuously, regarding any dimension of teaching and learning. Deliberate practice drawn from Ericsson et al. (1993) outlined core characteristics of deliberate practice with specified key roles and responsibilities of coaches and teaching mentors including:

> The participants need to gain immediate informative and actionable feedback on performance of the practice task that allows them to make appropriate

> adjustments to improve. The practice task must be designed and performed in accordance with individualized instruction and guidance of a teacher. (Ericsson, 2020, p. 1115)

Ericsson (2020) was not simply specifying the characteristics of a learning participant who used deliberate practice, Ericsson (2020) was also indicating a mentor, teacher, or as instructional coach was necessary to provide "immediate informative and actionable feedback," as well as "individualized instruction and guidance" (p. 1115). In many cases teachers lacked the vital characteristics of deliberate practice (Grant, 2022). Furthermore, the insufficiencies diminished the peer-to-peer relationship teachers had between themselves, instructional coaches, administrators, and outside leaders of professional development. Too often teacher supervision, instructional coaching, professional learning communities, and other professional development centered on the introduction of new teaching materials, content, and skills, and lacked consistent mentorship, deliberate practice, data-informed feedback, and performance review responsive to how teachers learned themselves (Bryk et al., 2015). When professional development practices and praxis fell short, resiliency and efficacy failed to emerge (Chen et al., 2020). Therefore, administrators had to reconsider and reimagine how instructional coaches in education corresponded to a traditional role of coaches and the purpose of coaching.

Research-Based Instructional Practice

Aligning a curriculum of what to teach in schools led educators to continue exploring how educators taught. In step with standards-based reform efforts, educators embraced active learning, the integration of technology, and culturally responsive teaching practices which enhanced student outcomes and learning (Ball & Forzani, 2009;

Ladson-Billings, 2006; Peterson-DeLuca, 2016). Active learning and deliberate practice, which were the hallmark featured of music education, athletics, and medical training (Han et al., 2015), centered around skill development through tasks and activities demonstrating student learning (Ball & Forzani, 2009). Applying active learning and student engagement allowed educators to empower students, build relationships, and be recognized by students as teachers with instructional expertise (Peterson-DeLuca, 2016). Active learning also engaged 21st Century Skills of critical thinking, communication, collaboration, and creativity (Battelle for Kids, 2019).

Use of technology was connected to active learning teaching practices because teachers employed the use of technology with greater frequency (Han et al., 2015). Technological integration in the classroom, supported by teacher professional development and training, improved student learning outcomes (Warschauer et al., 2014; Zinger et al., 2017). Zinger et al. (2017) elaborated, technology rich classrooms required teachers to blend technological knowledge, pedagogical knowledge, and content knowledge. In doing so, teachers engaged in another aspect of 21st Century Skills and prepared students for future learning and application.

Another example of research-based improvements to curriculum and instruction was culturally responsive and culturally relevant pedagogies. Culturally relevant teaching used constructivist methods of instruction by promoting academic skills and concepts, engaging students in critical reflection, demonstrating cultural competence, and empowering discussions about power and social justice with students and teachers (Aronson & Laughter, 2016). The pedagogical practice recognized teacher and learner predispositions of race, culture, and ethnicity and demonstrated a correlation with

improved test scores, increased student motivation, self-efficacy, and confidence (Aronson & Laughter, 2016; Lind & McKoy, 2016). Sleeter (2012) contended culturally relevant education required:

> (1) evidence-based research documenting student outcomes, (2) further education of students, parents, teachers, and administrators on what the approach is and looks like in the classroom, and (3) further dialogue with the public regarding teaching in diverse and historically underserved communities. (pp. 578-579)

Culturally responsive teaching focused on diversity and inclusion reduced the achievement gap between student subgroups communities across the educational landscape.

Teacher Supervision and Evaluation

Administrators who understood the needs of teachers were able to create teacher supervision, professional development, and evaluation programs supporting improved student learning (Costa & Kallick, 2017; Nolan & Molla, 2017). Costa and Kallick (2017) contended teachers needed to be cognitively challenged, physically and emotionally secure, able to collaborate socially, and be spiritually invested in the value of the curriculum. At the core were the concepts of professional capital and professional capacity. Professional capital of teachers involved knowledge and skills, collaborative learning communities, and professional agency and autonomy (Nolan & Molla, 2017). Professional capacity of teachers involved the educator's ability to grow, progress, and improve (Stoll, 2020). If instructional practices were to continuously improve, administrators would have to create an environment for collective trust, reflection, and

change. When teachers were confident in both ability and the collective work of the institution to progress, the educator became more motivated to raise student achievement; described as the collective efficacy of teachers a highly rated indicator for student learning based on the meta-analysis by Hattie (2018).

Moving forward, administrators needed teacher supervision and evaluation models in place aligned to curricula and instruction with the vision of the school and state standards which built teacher capacity. Marzano et al. (2017) and the Danielson Framework (2013) were two supervision models widely used across the educational landscape. Both models incorporated a standards-based approach to evaluating teachers focusing on improved practice. The Danielson Framework (2013) used a reflective practice model including self-assessment, use of a professional growth plan, observations, and routine conferencing between administrators and teachers. Schools who implemented the Danielson Framework in cohesion with alignment practices to meet the Common Core State Standards were able to encourage teacher growth, improve instruction, and raise student achievement (Stosich & Bae, 2018).

Data and Assessment

Leadership in education emphasized understanding and use of assessments and data analysis as tools implemented to increase teacher capacity and improve student achievement. Dixon and Worrell (2016) explained formative assessments provided student data in an ongoing process to improve student learning and instruction and diagnosed problems, whereas summative assessments provided data concerning student retention and the application of information at the end of a course, unit, or learning cycle. Citing the National Research Council, Dixon and Worrell (2016) argued formative and

summative assessments should be used collaboratively as an instructional practice, yet in the era of standards-based reform and school accountability, summative assessments were the most widely used metric to determine student achievement.

Assessment was a prominent feature of data-driven school leadership (DDSL) efforts promoting responsiveness to student data as essential to building the professional capacity of teachers and raising student achievement (Bernhardt, 2017; Sun et al., 2016). Sun et al. (2016) synthesized a framework of DDSL to include data-based goal setting, developing teachers' decision-making capacity, building a data-wise culture in schools, and improving instruction based on data. While identifying the benefits of DDSL, researchers also voiced caution regarding the use of data in education. Bernhardt (2017) emphasized the authentic use of data by school leaders was to continually guide instruction and school improvement and school leaders should avoid narrow applications of data to simply demonstrate compliance and accountability rather than seek deeper learning. Principals and teachers often saw data from different perspectives, and without collaboration and invested leaders, teachers were overwhelmed by data and unclear of how to apply data to improve instruction (Hubbard et al., 2014; Sun et al., 2016).

Instructional Leadership

Instructional leadership by educational leaders meant understanding standards of content, the broad scope and sequence of specific disciplines, and the curriculum and curricular planning needed to deliver instruction. Instructional leadership also required administrators to have sound understandings of pedagogical practices beyond the delivery of content. Finally, instructional leaders had to be able to empower and encourage

teachers through professional development designed to build the professional capital, professional capacity, and the collective efficacy of the entire faculty.

Instructional Standards of Practice

High quality teaching and instructional practice was facilitated by administrators who understood lesson designs promoting student engagement and active learning, responsive teaching practices incorporating social-emotional learning in addition to content, and efforts to welcome a diversity of learners. First, regarding lesson design and active learning, Wiggins and McTighe (2005) developed a framework titled "Understanding by Design" based on research in cognitive psychology and student achievement studies. Key features of Understanding by Design included students demonstrating understanding through active performance and use of skills. The "backwards" design of lessons established clear objectives and goals (enduring understandings) consistently measured during all phases of a lesson through formative and summative assessments. Teachers coached for understanding of core competencies rather than attempting to disseminate knowledge (Wiggins & McTighe, 2005). In the researcher's experience, Understanding by Design has been well established as an instructional model in Missouri and other states and provided a common language of teaching.

Several instructional models addressed student behavior and social-emotional learning. Responsive Classroom was described as a teaching practice rooted in promoting social and emotional competencies (including cooperation, assertiveness, responsibility, empathy, and self-control) and academic competency (Center for Responsive Schools, 2024) The Center for Responsive Schools (2024) instructional model included practices

of interactive modeling, teacher language, logical consequences, and interactive learning structures. Administrators used models such as Responsive Classroom (Center for Responsive Schools, 2024) to inform and support *how* teachers teach in balance with *what* they teach. A cost benefit study conducted by American Institutes Research (2015) demonstrated social and emotional learning models increased reading and math scores over a three-year period. Rimm-Kaufman and Sandilos (2011) also demonstrated such programs raised student and teacher levels of self-efficacy.

Responsive Classroom connected to another key area of instructional practice, welcoming a diversity of learners. A guiding principle included "what we know and believe about our students—individually, culturally, developmentally—informs our expec-tations, reactions, and attitudes about those students" (Center for Responsive Schools, 2024, principle 5). Diversity as an instructional practice meant incorporating elements of Critical Pedagogy (Freire, 1972) as well as Culturally Responsive Teaching (Gay, 2010) and Culturally Relevant Teaching (Ladson-Billings, 2006). Each instructional practice refocused administrators and teachers on understanding students including the student's culture, environmental context, and learning needs.

Professional Development

Another piece of instructional leadership for administrators involved supporting and facilitating meaningful professional development for faculty and staff in accordance with adult learning theory and build collective efficacy or the shared belief the institution was progressing at reaching the intended goal. Adult Learning Theory was rooted in Knowles (1980) who distinguished adult learning or andragogy from childhood learning or pedagogy. Teachers required certain cognitive, physical, social, emotional, and

spiritual needs to be met in order to be successful in the classroom (Costa & Kallick, 2017). Beyond meeting these essential needs, administrators could focus on what teachers required as educators, how teachers continued learning, and how teachers could practice to improve teaching.

Understanding what teachers need to grow allowed an administrator to focus on building professional capacity. *The Glossary of Education Reform* defined professional capacity as, “the quality of adaptation - the ability of a school or educator to grow, progress, or improve” (as cited in Great Schools Partnership, 2014, para. 1) Administrators who embraced and incorporated supervision models associated with growth and professional capacity such as Marzano et al. (2017) and Danielson (2013) supported teachers’ ability to reflect and improve the teacher's pedagogical practice. The key was teachers embraced and, in many cases, designed individual growth plans and were unobstructed or defensive about administrative observation and supervision.

Another element of teacher professional development was understanding the importance of collective teacher efficacy. Hattie (2018) listed collective teacher efficacy as the most influential aspect on student learning according to the latest meta-analysis of data. Administrators understood teachers needed to be confident in the work and ability to make a difference in the lives of students. Well beyond test scores, grades, and other data metrics student achievement came down to building strong relationships convincing people to persist in education even through challenging times, setbacks, while maintaining a long-term outlook supporting a child’s growth into adults (Grant, 2022).

Instructional Coaching

A more contemporary and personalized aspect of professional development programs in schools involved instructional coaches who served to provide constructive guidance for teachers and raise academic achievement by students. However, the concept of instructional coaching and instructional coaches compared to more traditional definitions of coaching remained unclear. Vince Lombardi famously said, “winning isn’t everything, it’s the only thing” (as cited in Hartley, 2015, para. 13). On the face of the statement, it appeared coaching was most concerned with a final score, the summative metric, and a definitive assessment rendering a judgment of success or failure for a team or individual. While measurable performance, accomplishing objectives such as winning games and contests, and achieving other specific goals were often associated with coaching, the ethical and character development of participants was also highly valued and defined success (Hartley, 2015). Upon closer reflection, the ethics of Lombardi’s statement were considered more deeply. Lombardi accepted outcomes like winning and losing as ingrained in activities like football. However, Lombardi further emphasized coaches, teachers, students, and players had to transcend success or failure in each moment in order to remain consistent to ethics of challenging work, responsibility, and perseverance (Hartley, 2015).

Performance-based subjects such as sports, music, theater, and so on, were often misunderstood to exist on the periphery of educational curricula and generally concerned with students developing narrow-specialized skills. However, Amaro (2020) detailed key benefits students who participated in sports took with them after the student left the playing field including increased self-awareness and self-confidence, the ability to

collaborate with teammates and understand how individual actions made a difference towards a collective goal, and finally how habits of practice formed the foundation for success in other aspects of life. Many coaches embraced an ethical duty to educate and instill values in players to achieve success and goals, leaving a lasting impact beyond the game or activity (Hartley, 2015).

Successful coaching was concerned with human relations just as much as coaching was about getting participants to learn content or execute a task successfully. For example, training programs to certify coaches through the National Federation of State High School Associations (NFHS, 2020) guided prospective coaches in developing a coaching philosophy, core values, and student-centered coaching perspective. A key question from NFHS was whether a prospective coach intended to either coach the game's skills or the players' needs. Many of the most successful coaches regarded coaching as practicing high quality teaching. John Wooden won 10 championships at UCLA in 12 years. According to Davis (2014), Wooden held true to the same pedagogical principles of teaching honed as an English teacher early in Wooden's career. Wooden avoided defining success in terms of winning and losing, and stated success was, "peace of mind attained only through self-satisfaction in knowing you made the effort to do the best of which you're capable" (Wooden, 2009). Thus, a philosophy of coaching was perceived as more than eliciting achievement from players and students, the philosophy of coaching empowered students to be the best the student could be.

Furthermore, choosing a coaching philosophy based on teaching students rather than simply the content and skills required in a sport, meant balancing ethical standards of practice and fairness articulated by Kohlberg (1981) with the ethic to care and

understand the perspective of each player articulated by Gilligan (1982). An ethical choice existed for all coaches and teachers of all levels of society considered. If teaching and coaching was only about skills and content, then the craft of teaching was about efficiently maximizing achievement and production. Standards, routines, and even the suppression of the individual were all means to achieve a desired end in line with the economic consumer model or factory model critiqued by Biesta (2009) and Horvath (2021). On the other hand, if coaching and teaching was ethically bound to participants first, the goal was instead always about promoting self and collective efficacy in the ability to continue learning and improving together; something at work bigger than the game.

Putting a coaching philosophy into practice required making decisions about core values, defining the values within a team or organization, and consistently communicating the values with the team. Values could be viewed in the same way the Multiple Ethical Paradigms of care, critique, professionalism, and justice framed a process of how to act and interact with each other (Shapiro & Gross, 2013). Also, the values were embedded in consistent activities and routines. The values were, as Cliffe and Solvason (2021), the educative practices informing how each member should act and operate within the organization. Successful coaches regularly articulated the values with players as what defined the collective integrity of a shared program. For example, Coach Gary Pinkel, who was the head football coach at the University of Missouri from 2001-2015 established “Mizzou Made” as a criteria of core values that all players embraced, and when offering guidance to other coaches, Pinkel and Matter (2017) challenged coaches to establish core values and actively pursue the values together with their teams.

Perhaps the most famous example, Wooden's "Pyramid of Success" was held as a model of core values bonding interpersonal and intrapersonal habits with one another and continuously crafting the necessary building blocks for a successful team (Wooden, 2019).

The next part of successful coaching involved putting a coaching philosophy and core values into action using deliberate practice. A popular video on social media was Deion Sanders, the head football coach at Jackson State University. In the video, Sanders (2021) suggested too many players and coaches practiced just to practice implying a practice without purpose or intent. Sanders (2021) emphasized players should know and understand the purpose of practice in any endeavor, and for Sanders's practice was always the pursuit of greatness. Much of the information resonated as motivational coach-speak aimed to motivate and inspire players. However, Sanders was backed up by research concerning practice. Ericsson and Harwell (2019) also suggested practice was often misunderstood in education and in coaching. Deliberate practice, or practicing with purpose, meant using specific criteria which in turn grounded and guided activities, aligned the practices with core values, and had a fundamental goal to keep learning and improving (Ericsson & Harwell, 2019). Shapiro and Gross (2013) further explained how coaches used deliberate practice to habitually instill a standard of critique and reflection with players. Deliberate practice involved self-reflection, honest evaluation, adapting to new situations, and making changes, which were all fundamental practices of successful coaches and teachers.

Ericsson et al. (1993) and Ericsson (2020) were also connected to Path-Goal Theory. Citing House and Mitchell (1974) and Northouse (2016), Anderson (2016)

explained Path-Goal Theory involved leaders, or coaches, motivating participants with certain behaviors and actions including (1) communicating directives and providing clear structure to employees, (2) implementing support measures and considering the welfare of all employees as human beings, (3) opening and maintaining avenues of participation and allowing employees to execute decisional capital and autonomy, and (4) designing achievement oriented tasks, providing opportunities for performance, and setting challenging goals to promote learning. A responsive educational leader serving as a coach and mentor to fellow teachers had to understand the cognitive, physical, social, emotional, and spiritual needs teachers required to feel validated as professionals who cared for students (Costa & Kallick, 2017). Leader understanding was connected to a path-goal ability to align the varying motivational needs of participants such as affiliation, structure, control, and self-perception of task ability with the corresponding leadership behaviors described above (directives, supports, participation, and achievement-oriented tasks). Furthermore, aligning motivations with responsive leadership behaviors shifted the attention towards an expectancy of certain outcomes, as suggested by (Metcalf, 2017), and led to deeper professional work and practice.

Nolan and Molla (2017) suggested, as needs were met, teachers were able to build professional capital which included individual knowledge and skills (human capital), routine collaboration with fellow educational professionals (social capital), and degrees of autonomy and freedom to make pedagogical and curricular decisions (decisional capital). As a professional development intervention progressed, path-goal leadership behaviors needed to continue to be aligned with outcomes and motivational needs. In doing so, teachers received constructive, positive feedback from peers and mentors

perceived as essential requirements of Ericsson (2020). As the cycle of praxis moved from reflective dialogue, through deliberate practice, and to performance and evaluation, the educational leader and coach could both celebrate the success of achievement-oriented tasks and return the cyclical process back towards new endeavors and new opportunities to learn. Fong (2020) emphasized how leaders needed to facilitate creativity and iteration, should not be afraid of taking risks, learning from failure, and trying new perspectives because the main goal was to consistently craft a better team and environment for learning, and not simply solve what was in front of the leader. Completing such an interactive process and intervention with professional educators offered a valid process for raising and sustaining collective efficacy for teachers. Transformational learning, and transformational leadership were the mechanisms of action utilized to achieve certain goals of intervention.

Whereas responsive educational leadership constituted the philosophical theory grounding educational leadership for teachers, transformational coaching, deliberate practice, and sustained habits praxis. Blake and Mouton (1964) recognized leadership and management styles rooted in team management and coaching produced high degrees of concern for relationships and task completion. Transformative leadership was first explored by Burns (1978) to describe the difference between transactional and transformational leaders. Transactional leaders managed exchanges between leaders and a group designed to maintain status quo power structures, while transformational leaders worked to change (or transform) the culture of an organization for the better (Burns, 1978; Kuhnert & Lewis, 1987). Bass and Riggio (2006) crafted a framework in which transformational leaders modeled and influenced behaviors, inspired, and motivated

individuals, considered team member's individuality, and encouraged creativity and innovation. Transformational coaching, as crafted by Vanderpol (2019), was derived from earlier frameworks, and explored how senses of being and self-actualization could be enhanced and brought forth and realized through coaching.

Dewey (1938/1969) suggested in the book *Experience and Education,* education required a theory of experience. The essential problem confronting educational leaders, instructional coaches, and teachers was how to instill in learning participants "the most important attitude...the desire to go on learning" (Dewey, 1938/1969, p. 20). To meet the task Dewey developed a basic theory of an educational experience including student interaction with a subject or discipline and the continuity or continued learning linking one experience with the next. Dewey (1938/1969) stated, "The two principles of continuity and interaction are not separate from one another. They intercept and unite. They are...longitudinal and lateral aspects of experience" (p. 44). Dewey's theory of experience offered a framework to understand and explore current approaches to action based, active learning like teaching. Active learning was a broad concept in reference to curriculums centered on skill development and critical thinking through tasks, activities, and project-based learning (Ball & Frozani, 2009). Active learning had implications for students and teachers. Han et al. (2015) found in a research study centered on the pedagogical practices used to train professional educators, active learning strategies improved student performance and the instructional designs of teachers. There was a reciprocal positive outcome during the shared experience between a teacher and a pupil within a discipline. Han et al. (2015) compared the approach to pedagogical and coaching methods often found in medicine, musical training, and athletics. Another benefit of

active learning approaches including technology was to gather information, gain feedback, render efficiency, and elevate the learning experience.

Wiggins and McTighe (2005) developed “Understanding by Design” as a curricular instructional model emphasizing interactive learning. Fulfilling the second aspect of Dewey’s theory of experience, the model was chiefly concerned with continuity or enduring understanding verified by student application and performance. To facilitate the process Wiggins and McTighe (2005) repositioned the teacher from the controller and distributor of knowledge to a coach and encourager of understanding. Teachers who served as coaches to student learning became participants in the mutual educational experience and, through critical pedagogy, resolved the balance between teacher and student (Freire, 1972). With a cooperative learning environment teachers became more responsive to understanding the needs and identities of the students which were also key elements of culturally responsive teaching (Gay, 2010) and culturally relevant teaching (Ladson-Billings, 2006).

Teachers across the curriculum gathered insight from observing coaches in action and the philosophies and pedagogical practices working to support experiential and active learning. Elliott (2013) was a leading music education researcher who cited the praxial justification of musical study and music teaching because the practice promoted critical thinking, identity development, and cultural sharing through music making. Abrahams (2005) observed music teachers using deliberate practice in association with critical pedagogy regarded education as a conversation, broadening views of reality for both students and teachers, empowering, transformative, and political. Finally, O’Toole (2005) contended empowering music education programs promoted awareness of and spaces for

the multiple identities of students and teachers and did not limit the scope of music education to only instructional technique. The same can be said for transformational athletic coaches and teachers in all fields. Teachers coached student understanding and growth through immersive learning experiences and facilitated interaction, active learning, deliberate practice, and repetition. Educators also understood how the moment, the game, the piece of music, or the learning activity was part of a longer learning continuum (Amaro, 2020; Shapiro & Gross, 2013). Connecting teaching with coaching fulfilled the aspects of Dewey's theory of experience by making teachers and students partners exploring mutual learning.

Summary

The review of the literature involved exploring the philosophical foundations for practice and self-improvement and contextualizing how deliberate practices were used in the field of education and the degree to which education served as a professional praxis. The literature review also revealed how complex motivations for the professional development of teachers worked as features of educational leadership, organizational change, and instructional coaching. In summary, teachers were faced with a multitude variables involving how to practice and improve in the craft of teaching, and often these variables conflicted or contradicted one another. Moving forward, the research aimed to craft and test a new prototype of professional development to better serve teachers and students.

Chapter Three: Methodology and Results

The aim of the researcher's problem of practice was to explore how existing professional development for teachers either aligned or did not align to a criterion of deliberate practice and professional praxis. Furthermore, the study sought to explore how aligning professional development for teachers in deliberate practice would, or would not, increase professional capacity, resilience, and the emergence of self and collective efficacy of teachers. The methodology for the research project involved a mixed-methods approach rooted in design thinking. Design thinking was well suited to examine the psychological and sociological aspects of education, teaching, and learning that often resist linear paths of development or factory models efficiency (Mayo, 1939). After reviewing the origins of design thinking and acknowledging the human-centric, iterative nature of the process, the methodology was carefully crafted and aligned with each core stage or phase of design thinking including empathy, defining, ideation, prototyping and intervention design, and testing. The design thinking process involved action research and during every step of the process the researcher was embedded in the work of teaching, engaging, and collaborating with other practicing educators, responding to constructive feedback and evidence, and in the end developing a dynamic and relevant prototype aimed to be used and tested for the benefit of teachers and school communities.

Design Thinking Process

The design thinking process was an iterative inquiry model used by educational researchers to explore a complex or "wicked" problem facing society. The stages of inquiry and action in design thinking included empathy, defining, ideation, creating a prototype or intervention, and finally testing. The scholar practitioner found the design

thinking process lacked a linear path, and often involved moving back and forth from one stage of inquiry to another as new information was gathered, examined, and applied. While design thinking was crucial to creating applicable responses to improve outcomes, the main purpose of design thinking was to develop the research mindsets of the individuals involved in design thinking. Worosz et al. (2020) observed, by using design thinking, students became more inquisitive and evidence-minded regarding the multiple processes and relationships contributing to problems and became more critically aware of how researchers thought about complex issues.

During the first stage of design thinking empathetic listening activities were often used to gain deeper understanding of the issues facing teachers. Hastings et al. (2018) explained how empathy interviews, focus groups, shadowing, and other observations allowed a researcher to gather information about an issue and the participants dealing with an issue. The empathy stage involved collecting quantitative and qualitative data including hard data, feelings, emotions, and beliefs participants may have revealed through shared oral and written reflection and revealed through body language and other non-verbal manners. Hastings et al. (2018) emphasized empathy involved observing, engaging, and immersing the researcher in a particular problem, context, and situation.

Defining was the process of organizing and making sense of data. When in the define stage, the researcher looked for common themes and revealed the needs of teacher participants; with consideration for ambiguity, complexity, and context as the researcher crafted potential problem statements, addressed a problem, and offered a new outcome. The define stage involved both analyzing data into parts to qualify and quantify data, and involved synthesizing, or bringing data together, to craft a direction for ideation.

Hastings et al. (2018) emphasized the ideation phase involved quantity of ideas and possible solutions more than quality during the ideation stage. The point of ideation was to explore a diversity of options available related to teacher efficacy and provide more desirable outcomes. Empathy mapping and other resources were used to generate reflective discussions. Ideation also lead back to the empathy and defining stage as a research individual or team realized not every voice or perspective had been revealed or included in a discussion. Gallagher and Thordarson (2020) stressed accessibility of design thinking to all individuals and was particularly focused on inclusivity and broad participation. Frequently an individual returned to initial stages of empathetic listening and observation redefining a problem in a more representative fashion. Again, the nonlinear approach emphasized the iterative nature of the design thinking process.

The prototype and testing phase of design thinking involved crafting a plan of action and intervention with a problem of practice. According to Gallagher and Thordarson (2020), the prototype stage process involved narrowing down and evaluating applications regarding fidelity, potential success rate, and other issues. Prototyping involved empathetic and open discussions validating all voices as multiple paths of actions were hypothesized and explored. Testing included putting an intervention into action, observing, and documenting the results, reflecting on outcomes, and publishing the findings for future use (Gallagher & Thordarson, 2020). Although a particular process of design thinking culminated with testing, the process also began further exploration and returned the broad process back to the other stages.

In response to Gallagher and Thordarson's (2020) call to be accessible and inclusive with the design thinking process, the researcher created a diverse cross section

of teachers and administrators involved in the deliberate practice of teaching, professional development, and instructional coaching to inform a broad professional praxis of teaching. The scholar practitioner's problem of practice involved examining whether instructional coaching and professional development met the requirements of deliberate practice articulated by Ericsson (2020). The aim of the intervention was to raise the self and collective efficacy of teachers using an intervention model engaging participants in reflective, deliberate practices. At the outset of the study the researcher was embedded at the independent school location teaching fifth and sixth grade social studies, fourth-sixth grade instrumental music, and serving as Coordinator of the Diversity, Equity, Inclusion, and Justice (DEIJ) Committee. The researcher had the ability to work vertically with social studies teachers from first grade through middle school, the ability to work horizontally across the curriculum from core academic subjects to specialist courses in music and athletics, and the ability to work with community members and administrators who were responsible for professional development and teacher supervision and evaluation, and to communicate with teachers from different schools. Ultimately, the end-users of the research intervention and study were teachers and administrators charged with supporting teachers to improve pedagogical practices, build teacher efficacy, and achieve the intended learning outcomes for students.

At the outset of the study the stakeholder team included the Dean of Students and Performing Arts Director at the initial study school (ISS). The person was also a close colleague in the arts department, organized the master schedule, and was directly engaged with serving student needs and partnering with teachers regarding professional needs and support. The stakeholder team also included the Head of School who was primarily

responsible for fulfilling the school mission, aligning the practices of the school to the directives of the Board of Trustees, and setting and achieving a strategic plan for the school. A final member of the stakeholder team included the science teacher and faculty representative on the school improvement team and accreditation team. Teachers from multiple curriculum committees were also asked to participate in the design process and provide input and engagement. The intention was to best examine current practices and areas for improvement informing a larger praxis of teaching, instructional coaching, and professional development working to elevate the caliber of work of the educators at the school.

Empathy Phase

The empathy phase included five questions used in an open-ended survey titled Professional Development and Deliberate Practice Survey (see Appendix B) with faculty from the independent study school. The survey received 23 responses out of 42 faculty consisting of a 54.76% response rate. After listing each research question the researcher analyzed results from each question using a close coding of keywords driven from the research questions, Ericsson's (2020) criteria of deliberate practice. The researcher also used the Text IQ software feature within the Qualtrics Survey program to target, identify, and highlight keywords. After an initial analysis of each survey question, the researcher shared initial findings and linked preliminary research data with the three research questions for the study (see Table 4).

Table 4

Qualtrics Open-ended Survey Questions (Empathy Builder)

Q1.	What do you believe are the qualities of a strong professional development program for teachers?
Q2.	Describe professional development activities that either met or did not meet your specific professional growth needs as a teacher.
Q3.	How are choices about professional development opportunities and professional goals made in your organization? Describe your voice in making decisions and choices about professional development.
Q4.	Describe how your professional schedule allows, or does not allow for consistent time to regularly practice and collaborate with other teachers regarding professional learning and growth?
Q5.	Describe the support and feedback, if any, you receive for professional learning and growth? Explain your answer.

Initial Findings of the Empathy Phase

The open-ended survey produced key themes pertaining to the professional capital of teachers and the ability of teachers to engage in deliberate practice aimed to increase professional learning. Nolan and Molla (2017) elaborated, as a teacher's needs were met, professional capital grew which expanded individual knowledge and skills (human capital), increased routine collaboration with fellow educational professionals (social capital), and teacher's exercised degrees of autonomy and freedom to make pedagogical and curricular decisions (decisional capital).

Survey Question 1. *What do you believe are the qualities of a strong professional development program for teachers?*

Keywords connected to autonomy and decisional capital included specific | needs | differentiated | choice | self | individual | individualized | goal | apply | applicable. The survey found 69.7% of teachers identified the terms as core qualities of strong professional development programs. Keywords connected to collaboration and social capital included collaborative | collaboration | team | working together | dialogue | mentor

| teachers | colleagues | school-wide. Results of the survey indicated 52.7% of respondents regarded collaboration and other issues of social capital as vital for strong professional development. Keywords connected to knowledge, skills, and human capital included professional | expert | effective | innovative | informative | knowledge | skills. Of responding teachers, 47.83% regarded issues of knowledge, skills, and human capital as key factors of strong professional development. Keywords connected to deliberate practice included time | timely | follow-up | follow-through | coach | support | feedback | practice. Additional research results demonstrated 39.13% of teachers regarded issues of deliberate practice as related to strong professional development.

Positive encouragement for teachers included key words such as empowering | positive | encouraging | reflective | powerful | meaningful. Only 17.39% of responding teachers cited aspects of positive encouragement in connection to strong professional development for teachers. Administrative guidance and leadership included key words such as administration | administrative | board | alignment | supervision | evaluation | assessment | principal | division | head. Only 13.04% of responding teachers indicated the keywords as core aspects of strong professional development.

Survey Question 2. *Describe professional development activities that either met or did not meet your specific professional growth needs as a teacher.*

Results of the survey indicated 56.5% of teachers experienced professional development activities designed by the school both met and did not meet specific individual growth needs for teachers. A group of teachers who only identified negative experiences with school professional development offerings represented 34.78% of respondents; 26% of teachers indicated the most successful professional development and

professional learning growth came from experiences beyond the professional development offerings made directly by the school while 8.6% of the responding teachers cited positive professional development offerings improved teacher growth.

Connected to the above findings, 56.52% of teachers indicated autonomy, choice, and decisional capital as primary factors regarding professional development activities promoting teacher growth; 52.7% of teachers also indicated time for follow-up, follow-through, and support as vital indicators of professional development programs either met or did not meet teacher needs. Knowledge and skills (human capital) and collaborative opportunities (social capital) were identified by 43.48% and 39.13% of teachers respectively. Issues of administrative guidance and leadership were not cited by any teachers as an indicator of positive or negative professional development.

Survey Question 3. *How are choices about professional development opportunities and professional goals made in your organization? Describe your voice in making decisions and choices about professional development.*

The survey indicated a widespread lack of clarity regarding how decisions about professional development opportunities and the setting of professional goals were made within the organization. Of the responding teachers, 95.65% of respondents used words such as ‘not sure, don’t know, unclear, and no idea’ regarding aspects of professional development. Issues of decisional capital, 43.48% of respondents and professional collaboration, 43.48% of respondents, were primary among teachers regarding how professional development decisions should be made. Secondary concerns of adequate time and support and actionable knowledge and skills pertaining to specific teacher learning environments were also recognized by respondents as motivating factors in

making positive decisions about professional development offerings. Administrative leadership, guidance, and positive encouragement lagged in teacher comments regarding factors related to making professional development decisions.

Survey Question 4. *Describe how your professional schedule allows, or does not allow for consistent time to regularly practice and collaborate with other teachers regarding professional learning and growth?*

Responding teachers cited a lack of consistent meeting structures, adequate practice time, and time for collaboration as key indicators that hindered teachers' ability to regularly practice professional learning. The survey revealed 73.91% of respondents indicated issues of time were central to maintaining a schedule promoting professional learning. Furthermore, 76% of the subgroup regarded lack of time as a negative or persistent problem; 17.6% responded the schedule both allowed time and did not allow time for regular practice. Only 5.8% mentioned issues of time as a positive aspect of the school's schedule conducive to professional learning.

Results of the survey demonstrated 47.83% of responding teachers cited collaboration and collaborative issues connected with the schedule and time for regular practice of professional learning. Additionally, 72.7% addressed collaboration as lacking and the schedule prevented time for collaborative learning; 27.2% identified professional development structures which had been or were currently in place, yet still commented the structures were insufficient in producing consistent collaborative learning.

Survey Question 5. *Describe the support and feedback, if any, you receive for professional learning and growth? Explain your answer.*

Teachers had an intense sense of feedback regarding professional learning which included direct feedback from administrators and supervisors, collaborative feedback from other teachers, and student and parent feedback. The survey indicated 80.95% of responding teachers recognized feedback was central to professional learning. Of the subgroup, 58.82% of teachers reported high satisfaction with feedback from the school including 35.29% of teachers who mentioned direct feedback from administrators, and 23.52% of teachers reported feedback from colleagues, students, and parents. The respondents indicated 41.17% of the subgroup who identified “feedback” in the response were either neutral or dissatisfied in the feedback or lack of feedback each received regarding professional learning, although some cited a lack in seeking out direct feedback.

The initial findings suggested a clear positive of the school's professional development program was the feedback issue. Teachers cited feedback as a core practice of strong professional development supporting professional learning. Educators desired feedback and indicated positive communication after feedback from the supervising administrators, colleagues, students, and parents. Additionally, teachers indicated poor professional development often lacked feedback, follow-up, and follow-through. Another positive and potential challenge was structuring professional development and in-service opportunities to meet a teacher’s needs. According to the survey, 65.1% of respondents reported professional development opportunities met teacher's needs. However, 56.5% of teachers experienced professional development activities designed by the school both met and did not meet specific individual growth needs for teachers; 34.78% of teachers only identified negative experiences, and 26% indicated opportunities beyond the school’s

offerings were most likely to meet a teacher's needs. The findings supported a hierarchy of needs the survey data demonstrated beginning with individual needs associated with autonomy, freedom, and decisional capital, followed by collaborative opportunities for teachers to build and exchange social capital, and human capital of knowledge and skills about teaching and education that best informed and was applicable to teacher's students and classrooms.

The fundamental challenge or area of concern regarding professional development was regarding communication, clarity of how professional development choices were being made for teachers, and how teacher voice was included or not included in designing a professional development program for the school. Additionally, time for practice, implementation, and follow-up were key areas for improvement, as identified by teachers. The survey results indicated the schedule was not conducive to supporting deliberate practices of professional development to promote professional learning and sustained growth. In addition to the open-ended survey, the researcher used faculty observations to create a teacher empathy map (see Figure 1)

Figure 1

Empathy Builder: Teacher Empathy Map

What Teachers Hear	What Teachers Think and Feel
• Multiple and often uncoordinated initiatives aimed to raise teaching performance and student outcomes. • A wide array of communication from students, parents, administration, other teachers, and professional resources.	• Teachers can feel isolated and disconnected from peers. • A lack of consistency and clarity with collaborative structures such as committees and PLCs. • Confused about competing administrative channels of communication and directives.

• Feedback on how students are meeting, or not meeting, learning standards. • Pressure to have students matriculate to the next level of education (secondary schools, college, and careers) • A call to set and establish professional growth goals and seek out professional development. • A call to be mindful of personal wellness, health, and self-efficacy.	• Teachers understand individual strengths and areas of improvement to be better teachers. • Teachers work best when collaborating with other teachers and have a network of mentors and supportive colleagues. • Supported, encouraged, and empowered when teachers self-direct their own professional learning.
What Teachers Say and Do • Make choices and prioritize what teachers can best get done to support the students. • Teachers often prioritize time with students and direct teaching over professional development opportunities taking time away from students and meeting learning objectives. • Young teachers feel overwhelmed and leave the field after only 3-5 years of teaching. • Teachers are not meeting school objectives and the school mission at higher rates than other constituent groups.	What Teachers See • Teachers often see themselves and the students in the classrooms and teaching. • See discrepancies, lack of clarity, and lack of equity regarding professional support. • Only the teacher and student point of view regarding school policies and feedback. • Teachers do not see or hear administrative priorities or feel the alignment of the school board desire from administrators to achieve strategic plans. • Teachers have a limited purview of the entire school operation.

Ideation Phase

A key part of the design thinking process was generating stakeholder feedback, ideation, and prototyping workable solutions to be tested to measure deliberate practice of teachers and the ability for deliberate practice to increase collective efficacy. Each step was intended to build buy-in from key constituent members regarding recognition of the problem of practice and the collaborative effort to address the issue and move forward. Harold (2020) emphasized the importance of a researcher gaining feedback early and

often and further detailed four categories of feedback including information scent, affordances, counterbalancing, and desirability. Each of the concepts underscored the empathetic awareness and listening the researcher needed to consistently demonstrate to encourage open conversation and to authenticate the responses from stakeholder members. For example, being mindful of an "information scent" was a key issue in the discussion with teachers on the stakeholder team. Both in the open-ended survey responses, and repeatedly in the two meetings, the primary schedule and individual teacher schedules were brought up regarding professional development and professional learning opportunities for teachers. The calendar was also a primary topic of conversation. The information scent revealed the researchers had to gain a strong grasp of each teacher's schedule and how the schedule and calendar were crafted to give adequate space and time for the professional learning and deliberate practice of teachers; connected to issues of affordance and counterbalancing. Teachers were only afforded so much time in the schedule for planning, professional learning, and deliberate practice. As stakeholders discussed the preliminary research findings about deliberate practice and professional development a common theme was to refer to issues of time, the schedule, and the calendar as impediments to more opportunities for professional learning for teachers. The stakeholder feedback provided a competing duality regarding the desirability of teachers for deliberate practice and professional learning. Teachers indicated the desire for consistent feedback and time to practice teaching and professional learning, however teachers also indicated a lack in the desire for additional work in competition against the teaching activities and responsibilities perceived as stress and feeling overwhelmed to deliver for students.

The ideation process included both an in-person meeting on May 2, 2023, and an on-line brainstorming activity. A consistent limitation of the study included the constraint of time in the schedule and with the calendar as teachers and administrators navigated the last weeks of the school year. Liedkta (2018) described ideation as a process of "social technology" including immersion, sense making, alignment, emergence, and action. However, the type of creative and social interaction required time and space. The researched school had previously held professional development retreats where ideation activities took place. However, the current schedule limited such space and time. Ideation activities were often timed to generate feedback and many responses as stimuli for creativity; however, the time factor was out of necessity. Nonetheless, the scholar practitioner believed ideation provided ample feedback on professional learning opportunities and underscored persisting problems that resisted deliberate practice efforts for teachers and may have contributed to low levels of self and collective efficacy reported by teachers (see Table 5).

Table 5

Focus Group Notes and Responses to Guiding Questions

Q1.	Through surveys that identify areas of interest, more time available for PD, workshop style opportunities on PD days that could be led by a combination of in house and outside of NCS experts. Give choices, when possible, think about aligning curricular areas, grade level teams, make sure everyone has someone to bounce ideas off, choices, when possible, of these activities (summer, after school, weekend, in-service days, online, video etc.). Ask teachers what they need. Aligned to the feedback you are getting from observations. Need to be self-aware. Aligned with observations. Do you get regular feedback? Some teachers invite feedback and space. Some teachers get nervous. Feedback is good.

Q2. Giving teachers the opportunity to practice something they would normally embed in the classroom, and then setting up peer partnerships where you can have a buddy who you observe and give feedback to in the same area.

Choices mixed with commonalities, so everyone can dive into an interest area, but balancing out that we all have some of the same training, being deliberate about what new teachers need to know, Time to share when teachers attend workshops or events so others can learn from them.

Do less. Synthesize. Do one thing. Pick one thing and own it, hone it for the year. Balance and choice. Give teachers a choice. Everyone has different disciplines. Teachers sometimes need to step in. Bounce ideas off other teachers. Able to collaborate with similar subject areas. Connect with other teachers from other schools. Network beyond the school. Time to network. Veteran teachers to new teachers. Mentoring programs. Professional growth plans aligned to where a person is in their career and their goals. Time and the schedule.

Q3. Identify a goal at the beginning, observe with this goal in mind, feedback (including suggestions for other teachers to observe) would be focused on the same goal, teachers recording themselves teaching and then self-assessing with their goal in mind.

Partners or Triads of teachers to work together on feedback, continued pop ins by admin or mentors, regular check in on formal goals that may have been set, sharing successes, and highlight teachers more in bulletin/assembly/FL.

It's a cultural thing. Every teacher must have a plan and a program. It's not seen as a negative. Balance and choice. It's tricky.

As ideation moved into initial prototyping, the teaching team began initial discussions of the planning instruments used by teachers to align with the schedule and calendar, provided essential instruction to students as informed by course curricula, and the professional growth plans teachers needed to meet individual and collective goals for professional learning and practice. Widen et al. (2021) stressed the prototyping process intended to move from low fidelity to high-fidelity and required beginning with quick drafts not fully developed, but rather generative ideas for a test module. Dam and Siang (2022) suggested four important points with prototyping including “(1) Just start building, (2) Do not spend too much time, (3) Remember what you are testing for, and

(4) Build with the user in mind" (para. 24). Following the insights, the researcher began developing a Deliberate Practice Lesson Planning Tool (See Appendix C) for teachers to use as a mechanism for charting and reflecting on the deliberate practice of teaching. The lesson plan instrument served as a regularly used calendar-based planning tool, aligned to curricular designs already established and required by teachers including links to assessment data, and featured the specific professional learning goals and targets of the teachers including aspects of instructional expertise (content mastery, pedagogical mastery, and student to teacher relationship mastery) articulated by Grant (2022), Hattie (2018), and Shulman (1987).

Define Phase

As the researcher worked through the empathy stage with the stakeholder team and teacher participants certain issues developed and shifted the focus of the discussion away from central questions regarding the deliberate practice of professional development by teachers. The core questions of the study included how deliberate practice, as constructed by Ericsson et al. (1993) and Ericsson (2020) aligned with teacher needs for professional capital and improved professional capacity, and whether implementing deliberate practice with teachers promoted the emergence of self and collective efficacy for teachers. The first issue was the schedule and timing of the study. Teachers and administrators were already engaged in the regular procedures of the school year, implementing current teaching practices and professional development programs, as well as working through a re-accreditation process and the beginning of a new strategic plan initiative. A key finding from the literature review indicated teachers were already confronted with a "blizzard of guidance" from multiple constituent groups regarding how

to improve teaching and learning practices (Bryk et al., 2015). To combat the challenge, the researcher shared the need to streamline and clarify communication with teachers, and to emphasize the intent of the study was not to add another task or more work for teachers, but rather to help craft more efficient and teacher-centered practices of professional learning aimed to raise efficacy and morale among teachers.

A second issue was the concern among an administrator member of the stakeholder team who noted teacher survey participants may be overly negative in the responses or used the teacher survey to vent or voice disagreements with school administrators and the organizational directives had been implemented by the administrators. Acknowledgment existed some disagreements over school decisions had persisted over time, been observed in previous school climate surveys, and communication channels with some teachers had degrees of stress. Returning the conversation to the central questions of deliberate practice, professional capital of teachers, and efficacy involved maintaining the current study was about present matters of teacher satisfaction and future action(s) members of the stakeholder team could take to improve learning outcomes.

Achievement goal theory, as reviewed by Day and Tosey (2011), involved both positive and negative orientations regarding expertise and performance. Individuals who were positive in goal orientation sought to demonstrate expertise and performance, while individuals who were negative in orientation sought to avoid subjects that indicated insufficient expertise in a skill or knowledge and often deflected and rationalized under performance. A crucial step in the process was focusing on cultivating a growth mindset

for all members, adhering to community norms of collegiality and respect, and an accurate reading of data to inform authentic and responsive action.

Finally, the lack of understanding and familiarity from administrator and teachers regarding collective efficacy of teachers, professional capital, and deliberate practice challenged the focus of the define stage. The ideas worked in favor of the research study, which included grounding each concept and definition in the literature and presenting concepts as a foundational rationale for acting. Professional capital as understood by Nolan and Molla (2017) included individual human capital - knowledge and skills, social capital - professional collaborations, and decisional capital - autonomy and voice. Collective efficacy of teachers was a key indicator for student learning as identified by Hattie (2018). Finally, deliberate practice was a well-defined criterion defined by Ericsson et al. (1993) and Ericsson (2020) contended specific habits of action were the chief architects of expertise in a domain rather than innate talent or context. In conclusion, the empathy stage clarified understanding the needs of teachers to build professional capital and capacity, using deliberate practice, and the emergence of collective efficacy were hypothesized to be contingent upon one another, and understanding the relationship between each of the concepts was the core problem of practice explored in the research study. The researcher used the following questions to guide the design thinking process into the ideation phase including a focus group session for participating teachers see Table 6.

Table 6

Guiding Questions for Ideation Phase

Q1.	How may educators align professional development to meet the needs of teachers by building professional capital that includes autonomy, collaboration, and applicable knowledge and skills for individual teaching?
Q2.	How may educators align and ensure professional development meets the deliberate practice requirements of consistent, regular practice time for professional learning tethered to specific learning goals?
Q3.	How may educators ensure consistent collaborative feedback for teachers measuring professional growth, including resiliency, and the emergence of self and collective efficacy?

Prototype Phase

The researcher explored how Ericsson's (2020) model of deliberate practice and Hattie's (2018) identification of collective efficacy for teachers served as a prototype model of reflective practice teaching participants could use in the testing phase of the study. The prototype included a plan to deliver a three-session professional development asynchronous course to participants exploring Ericsson's (2020) characteristics of deliberate practice in association with the three aspects of instructional expertise in teaching including content expertise, pedagogical expertise, and relational expertise (Grant, 2022; Shulman, 1987). The professional development course was supported by a pre-course information session and pre-course survey measuring participants' knowledge of deliberate practice, instructional expertise, professional capacity, and self and collective efficacy of teaching.

The asynchronous course was conducted over a four to eight-week period aligned with the first semester of the school year for each participating teacher. The course was uploaded and delivered to participants through a web platform created by the researcher titled and the module series was titled Deliberate Practice and Teacher Professional

Development and included a video introduction and survey, reflective exercises on deliberate practice, participant's goals to improve instructional expertise, and space for open-ended responses for each module (Elder, 2023). With the participant's consent a one-on-one interview, conducted by the researcher and each participant, accompanied the third module which took place approximately in the fourth week of the course. The final module included a post-survey a mirror of the initial survey and measured self and collective efficacy of teacher's instructional expertise and examined if the deliberate practice intervention and professional development sessions resulted in increased professional capacity and growth as self-determined by teachers.

The researcher used the following plan to organize the participant schedule and collection of data (see Table 7).

Table 7

Deliberate Practice and Teacher Professional Development Plan

Prototype Intervention Plan	Requirements	Time Commitment
Session 1: *Initial information session and pre-intervention survey on Professional Development of Teachers* (See Appendix A & Appendix C).	Pre-intervention survey on deliberate practice and professional development. Tschannen-Moran and Hoy (2001)	10-15 minutes. The session will occur in week one of prototype implementation.
Session 2: *Module 1 on Deliberate Practice and Instructional Expertise: Goal Setting*	The participant will view and read Module 1 materials, participate in reflective response, and establish professional goals for deliberate practice.	30-60 minutes. The session will be completed in week one of prototype implementation. Each participant may independently do additional work.
Session 3: *Module 2 on Deliberate Practice and Instructional Expertise: Resiliency*	The participant will view and read Module 2 materials, participate in reflective response, and review goals for deliberate	30-60 minutes. The session will be completed in week four of prototype implementation. Each

	practice with resiliency plan. Participants will establish professional growth goals for each aspect of instructional expertise: content mastery, pedagogical mastery, and relational mastery.	participant may independently do additional work.
Session 4: Interview with participants. (Optional)	Researcher conducts an online interview with each participant: Supporting Resiliency and Professional Growth. Modified interview questions about deliberate practice and teaching.	20-30 minutes. The interview will be scheduled by the researcher with each participant upon the receipt of a signed consent form.
Session 5: *Module 3 on Deliberate Practice and Instructional Expertise: Self and Collective Efficacy of Teachers*	The participant will view and read Module 3 materials, participate in reflective response, and measure efficacy towards professional growth.	30-60 minutes. The session will be completed in week eight, final week, of prototype implementation. Each participant may independently do additional work.
Session 6: *Final meeting*	Post-intervention survey and reflection. Tschannen-Moran and Hoy (2001)	10-15 minutes. The post intervention survey will be completed at the end of the eight-week intervention. Total Time: Approximately between 2.5-4 hours of time.

All participants were given an informed consent form to review and sign. The introduction session and concluding session were recorded and uploaded to the same platform as all the other modules and participants viewed and responded at the participants' convenience. The interviews were also scheduled at the convenience of each participant and did not exceed 20 minutes in length. The modules were asynchronous and could be viewed and worked through at a pace chosen by the participant. The only fixed dates were the launch of the intervention, interview times, and the conclusion of the intervention window.

Prototype Description: Module Components and Testing Instrument

The optional professional development tools and open-ended surveys were constructed as the qualitative elements of the prototype research methodology. The participant responses were designed to be thematically coded and tabulated using the same TextIQ feature of the Qualtrics software program used during the empathy building phase. Furthermore, the optional feature for participants allowed the researcher to explore varying degrees of deliberate practice, goal setting, and goal reflection as teachers worked through the modules. The qualitative elements served to analyze the three underlying research questions concerning deliberate practice and professional capacity.

Research Question 1: How does professional development for teachers adhere to the theoretical model of deliberate practice, if at all?

Research Question 2: How does the deliberate practice of professional development and instructional feedback inform the professional capital and professional capacity for teachers, if at all?

Research Question 3: How will providing professional development for teachers in accordance with a framework of deliberate practice improve the self and collective efficacy of teachers, if at all?

The intervention included three professional development modules containing videos exploring deliberate practice and teacher professional development. The first module was titled “Introduction and Deliberate Practice Planning for Teachers.” The initial module one video included an introduction to the study, educational challenges facing teachers, roots of practice, the criteria of deliberate practice, the goal of instructional expertise, and instructions for goal setting and deliberate practice planning.

The second module was titled “Resilience & Progress.” The author explored the professional needs of teachers, professional capital and professional capacity, professional development and collaboration, instructional coaching for teacher growth and resilience, and further instructions for teachers to reflect on the educator’s goals for deliberate practice. The third module was titled “Collective Efficacy.” The accompanying video included reviewing the needs of teachers, the foundations of self-efficacy, collective efficacy of teachers, reviewing the criteria of deliberate practice, and final instructions for retaking the *Teachers' Sense of Self-Efficacy Survey* (see Appendix D). Modules two and three also included an option for teachers to schedule an open-ended interview with the researcher to reflect on individual goals and inquire about any additional information from the video series. The entire asynchronous professional development program was intended to be completed within 4-8 weeks and for all participants to be finished with the program by the end of the first semester of the school year.

The first two modules were embedded with a deliberate practice planning tool teachers could download and use for personal use crafting and reflecting on goals for deliberate practice. Teachers would be encouraged, but not mandated, to share the goals and reflective progress in an open-ended survey after each module. The first open-ended survey, titled “Deliberate Practice Planning - Goal Setting” to be completed after module one included the following questions:

1. Describe your professional growth goal related to content and knowledge of your subject area. How do you want to improve your expertise in content?

2. Describe your professional growth goal related to pedagogy and knowledge of how to teach your subject area. How do you want to improve your expertise in pedagogy?
3. Describe your professional growth goal related to student-teacher relationships and knowledge of how to communicate and connect with your students. How do you want to improve your expertise in student-teacher relationships?

In similar fashion, module two included another open-ended survey, titled “Deliberate Practice Planning - Goal Reflection” containing the following questions:

1. Describe your professional growth related to content and knowledge of your subject area. How have you made, or not made, progress related to this goal or demonstrated resilience?
2. Describe your professional growth goal related to pedagogy and knowledge of how to teach your subject area. How have you made, or not made, progress related to this goal or demonstrated resilience?
3. Describe your professional growth goal related to student-teacher relationships and knowledge of how to communicate and connect with your students. How have you made, or not made, progress related to this goal or demonstrated resilience?

The *Teachers' Sense of Self-Efficacy Survey* developed by Tschannen-Moran and Hoy (2001) served as the quantitative pre and post intervention testing instrument for research participants. Tschannen-Moran and Hoy (2001) conducted three studies aimed at testing the correlation between two factors of teachers' self-efficacy. Previous studies had

difficulty measuring teaching efficacy due to two factors: teachers' perception of their ability to teach and achieve intended outcomes, and teachers' general efficacy in teaching and the ability to control circumstances beyond the perceived educational environments. Tschannen-Moran and Hoy (2001) adapted and modified an instrument for testing teachers' self-efficacy based on previous work by Bandura (1977) and Bandura et al. (1996). The result was the *Teachers' Sense of Self-Efficacy Survey*, which paired personal teacher efficacy with reliable and valid general factors of teaching in context, including instructional strategies, classroom management, and student engagement. Using the quantitative testing instrument allowed the researcher to further delineate the general null hypothesis regarding teachers' sense of self-efficacy into sub-hypotheses exploring teacher self-efficacy of instructional strategy (IS), classroom management (CM), and student engagement (SE) in relation to deliberate practice and professional development resulting in the null hypotheses statements below:

Null Hypothesis 1a: There is no difference between the POSTSUM(IS)-PRESUM(IS) (μ-d=0).

Null Hypothesis 1b: There is no difference between the POSTSUM(CE)-PRESUM(CE) (μ-d=0).

Null Hypothesis 1c: There is no difference between the POSTSUM(SE)-PRESUM(SE) (μ-d=0).

The level of significance was established as α=.05. Tschannen-Moran and Hoy (2001) was a series of three separate studies aimed to test a more stable correlation between two factors of self-efficacy of teachers including (1) teachers' perception of their ability to teach and achieve an intended outcome, and (2) teachers' general efficacy in teaching and the ability a teacher needed to control circumstances beyond the context and

circumstance of an educational environment. Tschannen-Moran and Hoy (2001) systematically adapted and modified a new instrument for testing the self-efficacy of teachers rooted in previous work by Bandura (1997, 2001). Bandura's original 30 item scale was recalibrated by Tschannen-Moran and Hoy (2001) to 52 items for an initial test before being limited again to 32. A second test limited the scale to 18 before a final test settled on the *Teachers' Sense of Self-Efficacy Survey* (Tschannen-Moran & Hoy, 2001) and included a 24-item long form instrument and a 12 item short form instrument both measured using a 9-point Likert scale. The result of the study presented the field with a more stable and correlated instrument, *The Teachers' Sense of Efficacy Scale*, pairing the personal efficacy of teachers with reliable and valid general factors of teaching in context and included elements of instructional strategies, classroom management, and student engagement. For this study the researcher used the 24-item long form. Survey questions (7, 10, 11, 17, 18, 20, 23, 24) measured efficacy in instructional strategies, survey questions (3, 5, 8, 13, 15, 16, 19, 21) measured efficacy in classroom management, and survey questions (1, 2, 4, 6, 9, 12, 14, 22) measured efficacy in student engagement. The lowest possible score for each construct was eight, and the highest possible score was 72.

Testing Phase

The testing phase began during the fall of 2023. The Qualtrics surveys were published and the website www.fromtheconfluence.com and the interactive video module series became active. The researcher contacted potential teacher participants at the initial study school as well as from the researcher's new school location. Additional teachers were solicited for the study via email and a social media post on Facebook, Instagram, and LinkedIn. An email participant request explained the purpose of the study, the time

commitment for participants, and the various modules participants would complete. The recruitment material contained a link to Qualtrics and the Lindenwood University Informed Consent Form. Once informed consent was obtained, participants completed a short four-question Participant Information Survey indicating the participant's name, email address, teaching status, and years of experience and were then directed to take the pre-intervention *Teachers' Sense of Efficacy Scale* developed by Tschannen-Moran and Hoy (2001) (see Appendix D). Participants then moved at an individual pace through the three modules, interacted with the optional goal setting survey, deliberate practice planning tool (see Appendix C), individual interview, and goal reflection survey, and culminated study participation by retaking the *Teachers' Sense of Efficacy Scale.*

Throughout the testing phase the researcher adhered to research protocols established in the approved Improvement Science Internal Review Board research application including securing all personally identifiable information from participants, protecting participant privacy and confidentiality, and deliberately working to mitigate any potential risks involved with research participation. All survey data from both the pre and post *Teachers' Sense of Efficacy Scale*, including personally identifiable information collected only for purposes of data correlation and authentication, was secured through the secure, and password protected Qualtrics site. Responses to survey questions, reflective question responses, and deliberate practice plans completed by participants, and any follow-up interview transcripts were collected and stored on Qualtrics and through Lindenwood University's secure password protected cloud network via the Office 365 Notebook application with the researcher's password accessed only using a password-protected computer. The researcher used a letter/number when inputting results into the

IBM SPSS data analysis program and when reporting the results, ex: P1, P2, and P3; All participants remained anonymous.

Limitations

A possible risk during the prototyping and testing phase was participants were spending additional time and enduring extra professional development and planning beyond the normal workload as teachers without any direct benefits or advantages. To mitigate the risk the researcher crafted deliberate practice tools designed to accommodate and possibly enhance existing professional development structures in place in the teaching contexts of participants. The researcher additionally offered a certification of completion documenting participation in the study and the additional professional development work done by each participant. Another risk was the unintentional exposure of data gathered in the study. Participants shared reflections on the professional development supports and methods of professional practice each participated in at the participant's respective schools and educational contexts. Again, all data collected were stored on a password-protected computer, data were reported in an anonymous manner, and no school, school district, or other identifying information were disclosed in the researcher's dissertation or any future publications of the research findings.

A final risk involved teacher engagement with deliberate practice, resilience, and issues of self and collective efficacy of teachers. According to research presented in the review of the literature, teachers may struggle to find confidence and resilience in teaching and in the field of education. Examining and discussing such topics may have been uncomfortable for participants, involve cognitive dissonance, and could have resulted in negative thoughts by participants about teaching experiences and perceived

lack of efficacy. Participants had the option to withdraw from the study at any time without penalty. Teachers offered substantial and constructive feedback on teachers' sense of efficacy related to teachings, and the information may guide better-designed professional development programs to engage the professional capital of teachers and potentially raise the professional capacity of teachers to support student learning. Furthermore, examining whether deliberate practice aligned with existing professional development practices aimed to build instructional expertise and whether deliberate practice worked as a predictor of the self and collective efficacy of teachers could serve to model teacher training programs for future teachers and offer meaningful support for veteran professionals.

Results

The researcher aimed to gather 8-15 participants for the testing phase. Ultimately, 15 teachers sufficiently participated in the research study defined by watching all three professional development modules and taking both the pre and post intervention *Teachers' Sense of Efficacy Scale* surveys. Eight teacher participants represented three separate suburban public schools with varying degrees of student diversity, socioeconomic status, and academic proficiency. Seven teachers represented two independent private schools including the initial study school located in an urban neighborhood of a moderately sized city and another school located in a suburb of the same metropolitan area. The teachers ranged across grade level and subject matter from K-12th grade. Of the 15 participants, one teacher indicated 5-10 years of teaching experience, two teachers indicated 11-16 years of teaching experience, eight teachers indicated 17-25 years of teaching experience, and four teachers indicated over 25 years of

teaching experience. No pre-service teachers or teachers with less than five years of teaching experience were included in the study, nor were any responses from participants who were no longer actively teaching in grades K-12.

The first teacher participant began the module series on September 28, 2023. Teachers worked independently through the modules beginning the professional development course at different times during September, October, and November. The research study was closed on January 10, 2024. The average time for teachers to complete the study was 5.47 weeks. Completion time varied based on how engaged participants were with the optional open-ended responses and deliberate practice planning tools as well as other factors in the various teaching schedules. Teachers were given a general timeline and plan of activities for the course but were also given freedom to work asynchronously and at their own desired pace to complete the professional development intervention.

Regarding the deliberate practice planning, goal setting, and goal reflecting resources, 12 of the 15 teacher participants (80%) completed the goal setting open-ended survey and used the deliberate practice planning tool (see Appendix C) after module one. Seven of the 15 participants (46.7%) completed the goal setting survey *and* completed the goal reflection open-ended survey. Three teacher participants (20%) completed all of the video modules and took the pre and post efficacy surveys, minimally participated in goal setting and goal reflection open-ended surveys, and gave little to none completed evidence of deliberate practice planning. The qualitative results demonstrated varying degrees of deliberate practice and engagement and were explored during the critical analysis of the data phase. All open-ended responses were stored in the Qualtrics

database and thematically coded for indications of teacher progress and alignment to the underlying research questions. The process followed the same method as the open-ended survey completed in the empathy stage used to gain preliminary research data.

The scaled quantitative responses from the pre and post *Teachers' Sense of Efficacy Scale* surveys was transferred from Qualtrics to an excel spreadsheet and inputted into the IBM SPSS software program for data analysis through Lindenwood University's Apporto interface. The scaled responses for each participant were organized into subcategories of teacher efficacy including instructional strategies (IS), classroom management (CM), and student engagement (SE) in accordance with Tschannen-Moran and Hoy (2001). Furthermore, the scaled responses from participants were organized into four groups of deliberate practice participation during the study including all teacher participants, goal setting participants, goal setting & goal reflecting participants, and survey only participants. Data collection and organization allowed for greater depth and examination regarding teacher efficacy and deliberate practice. The data was then prepared for critical analysis including exploring the descriptive differences between pre and post-intervention responses. The scholar practitioner tested underlying assumptions, specifically normality and outliers for the different construct-subgroup combinations, in the data, and then conducted multiple parametric paired samples *t*-tests to examine any differences in responses related to deliberate practice. The nonparametric Wilcoxon Signed Rank, used when the normality assumption was violated or the presence of outliers, was used to for data analysis and validity.

Qualitative Analysis: Open-ended Participant Responses

The qualitative element of the mixed-methods study involved the open-ended responses teacher participants provided while working through the modules of the professional development intervention. The researcher began analysis with the goal setting process where 12 of the 15 teacher participants completed after taking the initial *Teachers' Sense of Self-Efficacy Survey* and watching the first module titled "Introduction and Deliberate Practice Planning for Teachers." Intervention teachers were prompted to create personal goals for deliberate practice and to optionally document goals in a three-question open-ended survey titled "Deliberate Practice Planning – Goal Setting." Each survey question was examined using a closed-coding criteria exploring key themes aligned with the criteria of instructional expertise in teaching established by Grant (2022) including content, pedagogy, and student-teacher relationships. The closed-coding also incorporated the three constructs of teacher efficacy indicated by Tschannen-Moran and Hoy (2001) including instructional strategies, classroom management, and student engagement. Each question was also cross-referenced for themes associated with the other constructs of efficacy and element of instructional expertise.

Goal Setting Survey – Question 1: *Describe your professional growth goal related to content and knowledge of your subject area. How do you want to improve your expertise in content?*

Keywords connected to content expertise and instructional strategies included *instruction* | *assessment* | *learning* | *content* | *read* | *write* | *practice* | *expertise* | *improvement* | *skills* | *math.* The closed-coding indicated 83.3% of the participants used one or more of key terms to establish a personal goal related to content and knowledge of

the subject area. Keywords connected to pedagogy and classroom management included *classroom* | *pedagogy* | *behavior* | *management* | *discipline* | *organization* | *environment* | *positive* | *restorative* | *justice.* Closed-coding indicated 8.3% participants used one or more of the terms to establish a personal goal related to pedagogical expertise, classroom management, and how to teach the subject area. Keywords connected to relational expertise and student engagement included students | voice | engagement | children | agency | choice | confidence | efficacy | relationships | background | identity. Twenty-five percent of the participants used one or more of the terms to establish a personal goal connected to relational expertise, student-teacher relationships, and knowledge of how to communicate and connect with students.

Goal Setting Survey – Question 2: *Describe your professional growth goal related to pedagogy and knowledge of how to teach your subject area. How do you want to improve your expertise in pedagogy?*

Keywords connected to pedagogy and classroom management again included classroom | pedagogy | behavior | management | discipline | organization | environment | positive | restorative | justice. Only 8.3% of participants used one or more of the terms to establish a personal goal related to pedagogical expertise, classroom management, and how to teach the subject area. Keywords connected to relational expertise and student engagement again included students | voice | engagement | children | agency | choice | confidence | efficacy | relationships | background | identity. In contrast, 58.3% of the participants used one or more of the terms to establish a personal goal connected to relational expertise, student-teacher relationships, and knowledge of how to communicate and connect with your students. Keywords connected to content expertise and

instructional strategies again included instruction | assessment | learning | content | read | write | practice | expertise | improvement | skills | math. Finally, 75% of the participants used one or more of the terms to establish a personal goal related to content expertise and knowledge of the subject area.

Goal Setting Survey – Question 3: *Describe your professional growth goal related to student-teacher relationships and knowledge of how to communicate and connect with your students. How do you want to improve your expertise in student-teacher relationships?*

Keywords connected to relational expertise and student engagement again included students | voice | engagement | children | agency | choice | confidence | efficacy | relationships | background | identity. Closed-coding indicated 91.7% of the participants used one or more of the terms to establish a personal goal connected to relational expertise, student-teacher relationships, and knowledge of how to communicate and connect with your students. Keywords connected to content expertise and instructional strategies again included instruction | assessment | learning | content | read | write | practice | expertise | improvement | skills | math. Coding showed 41.7% of the participants used one or more of the terms to establish a personal goal related to content expertise and knowledge of the subject area. Finally, keywords connected to pedagogy and classroom management again included classroom | pedagogy | behavior | management | discipline | organization | environment | positive | restorative | justice. Again, only 8.3% of participants used one or more of the terms to establish a personal goal related to pedagogical expertise, classroom management, and how to teach the subject area.

The teacher responses to the goal setting survey indicated content expertise and instructional strategies were primary drivers of goals across all questions for teacher professional development and deliberate practice. Responses involving keywords of instructional strategies and content expertise accounted for 66.7% of all responses. Relational expertise, student-teacher relationships, and student engagement was another core driver of teacher goals across all questions. Responses involving student engagement keywords accounted for 58.3% of all responses. Finally, classroom management and pedagogical expertise was the lowest driver of teacher goals with keywords accounting for only 24.9% of all responses. The findings were interesting when considering how the deliberate practice of goals setting not only supported growth in teacher efficacy in a corresponding construct related to a teacher's goal but also growth in other constructs of teacher efficacy.

The second open-ended survey embedded in the professional development intervention was titled "Deliberate Practice Planning – Goal Reflection." The survey was presented at the end of the module two video "Resilience & Progress." The aim of the survey was for teachers to receive, reflect, and respond to self-reported progress made and deliberate practice sustained on professional development goals. The three-question survey was identical to the goal setting survey structure and format concerning content goals, pedagogical goals, and student-teacher relational goals. The only addition was asking how have teachers made, or did not make, progress related to each goal and or demonstrated resilience. Seven teachers completed both the goal setting and goal reflection surveys. The open-ended responses were close-coded for themes associated

with Ericsson's (2020) criteria of deliberate practice and for words associated with growth, progress, resiliency, and efficacy.

Keywords connected to deliberate practice and efficacy included progress | growth | feedback | action | collaboration | support | informative | improvement | learning | positive | capacity | resilience | efficacy | confidence | success. Regarding question one, 71.4% of participants indicated progress and growth towards a teaching goal related to content expertise and or improving instructional strategies. Regarding question two, 28.6% of participants indicated progress and growth towards a teaching goal related to pedagogy and or improving classroom management. Finally, regarding question three, 71.4% of participants indicated progress and growth towards a teaching goal related to relational expertise and student engagement.

Overall, each qualitative element provided a degree of depth regarding the deliberate practice of teachers and worked to both guide deliberate practice and self-reflection by teachers as well as document findings in a dynamic fashion compared to the quantitative survey results of the *Teachers' Sense of Self-Efficacy Survey.* The descriptive analysis of the open-ended responses contextualized the underlying research questions regarding deliberate practice and professional capacity. The qualitative research evidence suggested consistent use of professional development rooted in the criteria of Ericsson's (2020) deliberate practice resulted in higher rates of self-reported progress towards individual teaching goals and increased professional capacity by teachers.

Quantitative Findings & Teacher Efficacy Scale Analysis

Reviewing the quantitative results from the *Teachers' Sense of Self-Efficacy Survey* began by analyzing the descriptive differences in pre and post survey scores for

each dependent paired sample by individual question and by the established constructs of teacher efficacy in instructional strategies, classroom management, and student engagement. The descriptive differences for each construct of teacher efficacy were also disaggregated by degrees of deliberate practice participation including all participants, goal setting participants, goal setting & reflecting participants, and survey only participants. The descriptive differences for each construct and each subgroup of participants based on degree of deliberate practice were included in Table 8.

Table 8

Descriptive Statistics for Differences in Teacher Efficacy

Differences in Teacher Efficacy (N)	Mean Difference	SD	Skewness	Kurtosis
All Participants (15)				
Efficacy in Instructional Strategies	3.53	4.033	.861	.581
Efficacy in Classroom Management	3.27	5.189	-.016	-.667
Efficacy in Student Engagement	5.80	1.439	1.439	2.167
Goal Setting Participants (12)				
Efficacy in Instructional Strategies	3.75	4.393	.757	.091
Efficacy in Classroom Management	3.33	5.033	-.004	-.199
Efficacy in Student Engagement	5.67	5.176	1.480	1.780
Goal Setting & Reflecting Participants (7)				
Efficacy in Instructional Strategies	5.29	4.751	.417	-.602
Efficacy in Classroom Management	5.14	5.398	-.581	.129
Efficacy in Student Engagement	7.71	5.851	.951	-.081
Survey Only Participants (3)				
Efficacy in Instructional Strategies*	2.67	2.517	-.586	.
Efficacy in Classroom Management*	3.00	7.000	-.000	.
Efficacy in Student Engagement	6.33	2.082	-1.293	.

Histograms and boxplots were generated through the IBM SPSS software for all questions, constructs, and participant subgroups. All distributions presented a visual normality of data and were mound-shaped, and a moderate skew of the data existed to the

right. The data presented an extreme outlier regarding overall increase in teacher efficacy in student engagement. The Shapiro-Wilk test was used to test for normality all descriptive differences for all constructs, and all subgroups of deliberate practice. The coding of descriptive differences was indicated as differences of efficacy in instructional strategies (DIFFIS), differences of efficacy in classroom management (DIFFCM) and differences of efficacy in student engagement (DIFFSE). Each subgroup of participants based on degrees of deliberate practice was coded as A - all participants, G - goal setting participants, R - goal & reflecting participants, and S - survey only participants. All tests of normality were included in Table 9. Sub hypotheses regarding normality were established for each construct of teacher efficacy and for each degree of deliberate practice with the level of significance established as α=.05.

Table 9

Test for Normality

Shapiro-Wilk Test		Statistic	df	Sig.
All Participants (15)				
	DIFFIS(A)	.926	15	.237
	DIFFCM(A)	.951	15	.548
	DIFFSE(A)	.870	15	.034
Goal Setting Participants (12)				
	DIFFIS(G)	.933	12	.411
	DIFFCM(G)	.966	12	.862
	DIFFSE(G)	.832	12	.022
Goal Setting & Reflecting Participants (7)				
	DIFFIS(R)	.931	7	.562
	DIFFCM(R)	.963	7	.847
	DIFFSE(R)	.893	7	.290

Due to the small sample size of the Survey Only Participants, the researcher omitted this group of data for tests of normality. Each construct and degree of practice was measured

against a null hypothesis (Ho): the distribution was not normally distributed, or the alternate hypothesis (Ha): the distribution was normally distributed.

For all participants, N=15, the DIFFIS(A), DIFFCM(A), and DIFFSE(A) p-values were .237, .548, and .034, respectively. All p-values were > α (.05) except for DIFFSE(A) which had a slight departure from normality. After data analysis the researcher rejected the null hypothesis regarding normality for DIFFIS(A) and DIFFCM(A) and failed to reject the null hypothesis regarding normality for DIFFSE(A). For Goal Setting Participants, N=12 the data was similar to the total sample analysis as the DIFFIS(G), DIFFCM(G), and DIFFSE(G) p-values were .411, .862, and .022, respectively. Again, all p-values were > α (.05) except for DIFFSE which had a slight departure from normality. The researcher rejected the null hypothesis regarding normality for DIFFIS(G) and DIFFCM(G) and failed to reject the null hypothesis regarding normality for DIFFSE(G). For Goal Setting & Reflecting Participants, N=7, the DIFFIS(R), DIFFCM(R), and DIFFSE(R) p-values were .562, .847, and .290, respectively. All p-values were > α (.05). The researcher rejected the null hypothesis regarding normality for decision for DIFFIS(R), DIFFCM(R), and DIFFSE(R).

Since the total sample size was 15 participants and various subgroups ranged from 3-12 participants, the researcher conducted a dependent paired samples *t*-test to see if teacher efficacy scores improved for each construct after participating in the intervention modules and for various groups based upon degrees of deliberate practice. A null hypothesis for each construct of teacher efficacy was evaluated to determine a broad understanding concerning the underlying research question and general hypothesis about efficacy and deliberate practice. The null hypothesis for each construct stated: there is no

difference post-test minus pre-test (μ-d=0). The alternative hypothesis stated: there is an increase post-test minus pre-test (μ-d>0). The level of significance was established as α=.05. The results for each construct of teacher efficacy and for group based on degrees of deliberate practice were provided in Table 10. Again, the researcher omitted the Survey Only Participants group due to the small sample size.

Table 10

Paired Samples Tests

	Paired Differences		95% Confidence Interval of the Difference			Significance	
	Mean Diff	SD	Upper	Lower	t	Cohen's d	p value
All Participants							
Instructional Strategies	3.533	4.033	1.300	5.767	3.393	.876	.002
Classroom Management	3.267	5.189	.393	6.140	2.438	.630	.014
Student Engagement	5.800	4.663	3.218	8.382	4.817	1.244	<.001
Goal Setting Participants							
Instructional Strategies	3.750	4.393	.959	6.541	2.957	.854	.007
Classroom Management	3.333	5.033	.135	6.531	2.294	.662	.021
Student Engagement	5.667	5.176	2.378	8.955	3.793	1.095	.001
Goal Setting & Reflecting Participants							
Instructional Strategies	5.286	4.751	.892	9.680	2.944	1.113	.013
Classroom Management	5.143	5.398	.150	10.136	2.521	.953	.023
Student Engagement	7.714	5.851	2.303	13.126	3.488	1.318	.007

Degree of freedom (df) for each group was 14, 11, and 6 respectively.

For All Participants, N=15, teacher efficacy in instructional strategies POSTIS-PREIS showed a mean increase in scores of (M = 3.533, SD = 3.731). The one-degree-of-freedom instructional strategies construct was significant at the specified $p < .05$ level, $t(14) = 3.393$, $p < .002$, CI [1.300, 5.767]. Teacher efficacy in classroom management POSTCM-PRECM showed a mean increase in scores (M = 3.267, SD = 5.189). The one-

degree-of-freedom classroom management construct was significant at the specified $p < .05$ level, $t(14) = 2.438$, $p < .014$, CI [.393, 6.140]. Teacher efficacy in student engagement POSTSE-PRESE showed a mean increase in scores ($M = 5.800$, $SD = 4.663$). The one-degree-of-freedom student engagement construct was significant at the specified $p < .05$ level, $t(14) = 4.817$, $p < .001$, CI [3.218, 8.382]. Therefore, the null hypothesis for each construct was rejected and the researcher concluded efficacy scores were higher after the deliberate practice intervention for All Participants regarding each construct of teacher efficacy.

For Goal Setting Participants, N=12, teacher efficacy in instructional strategies POSTIS(G)-PREIS(G) showed a mean increase in scores of ($M = 3.750$, $SD = 4.393$). The one-degree-of-freedom instructional strategies construct was significant at the specified $p < .05$ level, $t(14) = 2.957$, $p < .007$, CI [.959, 6.541]. Teacher efficacy in classroom management POSTCM(G)-PRECM(G) showed a mean increase in scores ($M = 3.333$, $SD = 5.033$). The one-degree-of-freedom classroom management construct was significant at the specified $p < .05$ level, $t(14) = 2.294$, $p < .021$, CI [.135, 6.531]. Teacher efficacy in student engagement POSTSE(G)-PRESE(G) showed a mean increase in scores ($M = 5.667$, $SD = 5.176$). The one-degree-of-freedom student engagement construct was significant at the specified $p < .05$ level, $t(14) = 3.793$, $p < .001$, CI [2.378, 8.955]. Therefore, the null hypothesis for each construct was rejected and the researcher concluded efficacy scores were higher after the deliberate practice intervention for Goal Setting Participants regarding each construct of teacher efficacy.

For Goal Setting and Reflecting Participants, N=7, efficacy in instructional strategies POSTIS(R)-PREIS(R) showed a mean increase in scores of ($M = 5.286$, $SD =$

4.751). The one-degree-of-freedom instructional strategies construct was significant at the specified $p < .05$ level, $t(14) = 2.944$, $p < .013$, CI [.892, 9.680]. Teacher efficacy in classroom management POSTCM(R)-PRECM(R) showed a mean increase in scores ($M = 5.143$, $SD = 5.398$). The one-degree-of-freedom classroom management construct was significant at the specified $p < .05$ level, $t(14) = 2.521$, $p < .023$, CI [.150, 10.136]. Teacher efficacy in student engagement POSTSE(R)-PRESE(R) showed a mean increase in scores ($M = 7.714$, $SD = 5.851$). The one-degree-of-freedom student engagement construct was significant at the specified $p < .05$ level, $t(14) = 3.488$, $p < .007$, CI [2.303, 13.126]. Therefore, the null hypothesis for each construct was rejected and the researcher concluded efficacy scores were higher after the deliberate practice intervention for Goal Setting and Reflecting Participants regarding each construct of teacher efficacy.

Finally, a Wilcoxon Signed Rank test was also administered to test the validity of the quantitative survey data including all 24 survey questions and all three constructs of efficacy. The results of the Wilcoxon Signed Rank test measured potential effect size and indicated a category of small, medium, or large effect size based on Cohen's d criteria. The finished results were included in the table below. 10 of the survey question differences between pre and posttests demonstrated a small effect size of deliberate practice equal or greater than .1, 14 questions demonstrated a medium effect size of deliberate practice equal or greater than .3. Two constructs of teacher efficacy demonstrated large effect sizes of deliberate practice equal or greater than .5. The teacher efficacy constructs of instructional strategies and student engagement produced large effect sizes of .537 and .623 respectively. The construct of teacher efficacy of classroom

management produced a medium effect size of .375, while the overall effect size of all questions post the intervention of deliberate practice produced a large effect size of .568.

Table 11

Wilcoxon Signed Rank Test Effect Size – All Participants

Question	Construct	z	p	r	Effect Size
Q1	Student Engagement	-2.157	.0155	.394	Medium
Q2	Student Engagement	-2.636	.004	.481	Medium
Q3	Classroom Management	-.690	.245	.126	Small
Q4	Student Engagement	-1.812	.035	.331	Medium
Q5	Classroom Management	-.632	.2635	.115	Small
Q6	Student Engagement	-2.588	.005	.473	Medium
Q7	Instructional Strategies	-1.540	.062	.281	Small
Q8	Classroom Management	-1.634	.051	.298	Small
Q9	Student Engagement	-2.658	.004	.485	Medium
Q10	Instructional Strategies	-1.823	.034	.333	Medium
Q11	Instructional Strategies	-1.406	.08	.257	Small
Q12	Student Engagement	-2.066	.0195	.377	Medium
Q13	Instructional Strategies	-.302	.3815	.055	Small
Q14	Student Engagement	-1.406	.08	.257	Small
Q15	Classroom Management	-2.310	.0105	.422	Medium
Q16	Classroom Management	-1.628	.0515	.297	Small
Q17	Instructional Strategies	-.966	.167	.176	Small
Q18	Instructional Strategies	-2.111	.0175	.385	Medium
Q19	Classroom Management	-1.461	.072	.267	Small
Q20	Instructional Strategies	-1.414	.0785	.258	Small
Q21	Classroom Management	-2.170	.015	.396	Medium
Q22	Student Engagement	-2.636	.004	.481	Medium
Q23	Instructional Strategies	-2.489	.0065	.454	Medium
Q24	Instructional Strategies	-1.897	.029	.346	Medium
IS total	Instructional Strategies	-2.764	.003	.505	Large
CM total	Classroom Management	-2.050	.02	.374	Medium
SE total	Student Engagement	-3.412	.0005	.623	Large

Summary

The design thinking process proved to be iterative and dynamic during the study. The problem of practice moved from the researcher building trust among fellow teachers, to establishing a foundation for the research method rooted in empathy and understanding the needs of teachers, to defining the problems facing teachers regarding professional

development, deliberate practice, resilience, and collective efficacy. The Professional Development and Deliberate Practice open-ended survey provided valuable results in the context of the study school and the broader educational environment. The results also reaffirmed previous school survey data and persisting indicators about teacher efficacy and confidence. Key stakeholders participated in the ideation process and focus group sessions. Time and time again the design thinking process served as an ongoing cycle of deliberate practice refining, redirecting, and clarifying goals for designing a professional development intervention prototype.

The adage - theory will only take you so far - became a reality as the design thinking process moved into the prototyping and testing phase. Bringing the module series to life, as well as the deliberate practice materials embedded in the accompanying website served as the first step in sharing the educational research and providing the intended support for teachers. As the researcher changed teaching positions in the new school year and transitioned from a private elementary school to a public middle school, the scope of the research broadened and opened the possibility of wider array of teachers from diverse schools to participate in the study. The testing phase proved to be a final iterative and vibrant experience as teachers expressed autonomy in setting professional goals for teaching, collaborated with the interactive study, gained new information to use deliberate practices, find resilience, and expressed increased levels of efficacy in teaching.

Chapter Four: Critical Analysis – Integration into Practice

Critical Analysis

Critical analysis and discussion of the mixed-methods study identified two key values gained embedding deliberate practices into professional development programs for teachers. First, the research study observed deliberate practice as a means of increasing professional capital and capacity. The qualitative research elements embedded in the professional development models supported the claim. Teachers were guided through the deliberate practice of goal setting and were given autonomy to craft professional goals aligned to instructional content, pedagogy, and student-teacher relationships. Instructional content and student-teacher relationships were primary drivers for teacher goal creation, much more so than pedagogy and classroom management. The results indicated 83.3% of teachers who completed a content goal for teaching aligned the goal with key words associated with instructional strategies. The results for student engagement were even higher as 91.7% of teachers who completed a student-teacher relationship goal aligned the goal with key words associated with student engagement. Even though pedagogy goal alignment to classroom management lagged behind the other constructs, teachers still aligned pedagogical goals to instruction and student engagement. The critical analysis demonstrated teachers who use deliberate practice goal setting were able to specifically target areas for improved professional capital and capacity.

Beyond goal setting, certain teachers used the deliberate practice of goal reflection and self-reported progress made towards professional teaching goals. Teachers who fulfilled all the deliberate practice criteria of Ericsson (2020) indicated higher levels of satisfaction in the ability to gain professional capacity. 71.4% of teachers who watched

all three modules, completed the goal setting open-ended survey, used the deliberate practice planning tools, and completed the goal reflection open-ended survey self-reported progress made on individual professional goals for instruction and student engagement. These findings were further substantiated when compared with the quantitative results of the *Teachers' Sense of Self-Efficacy Survey*.

The paired samples *t*-tests supported deliberate practice as a method of increasing teacher efficacy in instructional strategies, classroom management, and student engagement, and revealed significant data for all teacher participants, especially teacher participants engaged in goal setting and goal reflection. Teachers who engaged in deeper levels of deliberate practice by setting goals and reflecting on progress towards those goals demonstrated higher results than teachers who only set goals and watched the module videos or who only took the pre and post survey and watched the module videos without engaging in goal setting or goal reflection. There were also sizable differences across constructs of efficacy. Improved efficacy scores in student engagement outperformed the other two constructs of instructional strategies and classroom management in every group level of deliberate practice. Even when the mean increases for Survey Only Participants failed to demonstrate significance for instructional strategies and classroom management, the data-maintained significance for deliberate practice as a method of increasing efficacy in student engagement.

Depth of deliberate practice as a method of increasing teacher efficacy was further supported when examining the confidence intervals from the paired samples *t*-tests. The confidence interval for Goal Setting & Reflecting Participants suggested in 95 out of 100 samples the intervention of deliberate practice produced between .892 and 9.680 higher

scores of teacher efficacy in instructional strategies. For the construct of classroom management, the confidence interval suggested that in 95 out of 100 samples deliberate practice produced between .150 and 10.136 higher scores of teacher efficacy. For student engagement, the confidence interval suggested in 95 out of 100 samples the intervention produced between 2.303 and 13.126 higher scores of teacher efficacy. The scholar practitioner summarized in Table 12 additional detail on the findings from the paired samples *t*-tests showing the mean increases, standard intervention, confidence intervals, and significance levels for all constructs of teacher efficacy and for all groups of participants based on degrees of deliberate practice.

Table 12

Paired Differences for All Subgroups of Deliberate Practice

	Paired Differences		95% Confidence Interval of the Difference		Significance
	Mean	SD	Upper	Lower	P value
All Participants					
Instructional Strategies	3.533	4.033	1.300	5.767	.002
Classroom Management	3.267	5.189	.393	6.140	.014
Student Engagement	5.800	4.663	3.218	8.382	<.001
Goal Setting Participants					
Instructional Strategies	3.750	4.393	.959	6.541	.007
Classroom Management	3.333	5.033	.135	6.531	.021
Student Engagement	5.667	5.176	2.378	8.955	.001
Goal Setting & Reflecting Participants					
Instructional Strategies	5.286	4.751	.892	9.680	.013
Classroom Management	5.143	5.398	.150	10.136	.023
Student Engagement	7.714	5.851	2.303	13.126	.007
Survey Only Participants					
Instructional Strategies*	2.667	2.517	-3.585	8.918	.104
Classroom Management*	3.000	7.000	-14.389	20.389	.268
Student Engagement	6.333	2.082	1.162	11.504	.017

Discussion

Critical discussion of the mixed-methods research findings acknowledged certain challenges, constraints, and criticism of the study, and suggested new paths for future research concerning teacher professional development, deliberate practice, and teacher self and collective efficacy. The findings from the study underscored the principles of design thinking and the core argument from the literature review arguing education works best when sustained as a habit of praxis. Embracing teaching and learning as an unending continuity of praxis affirmed the legacy established by Dewey (1916) who approached education through a lens of critical pragmatism validated through experience and interaction. When limitations of the study were recognized as through-points to continued learning, rather than definitive failures and ends, the continuum was enhanced and strengthened rather than torn asunder.

A primary constraint of the study was the sample size of teacher participants. This was especially relevant to a quantitative study using the *Teachers' Sense of Self-Efficacy Survey*. Tschannen-Moran and Hoy (2001) was a series of three separate studies with 224, 217, and 410 participants respectively. The studies included preservice and in-service teachers and covered a diversity of demographics including race, gender, and experience. The initial scope of the scholar practitioner's study was intended to target one specific teaching faculty embedded at one study school. Even when the study expanded to include 15 teachers from five different schools including public and private schools, no additional demographic questions were asked of participants beyond active teacher status, and experience levels. Of the final 15, the researcher knew each teaching participant, had knowledge of the collaborative teaching teams participants worked with, and, in some

cases, had deep knowledge of the professional development programs required and utilized by particular schools. Part of the reason identifying questions were kept to a minimum was because initially embedding the work in one particular school and indicating such features as subject area, gender, race, and so forth, even of anonymous participants, would essentially reveal who the participant was. A valid critique of the study was how demographic data and teacher characteristics should have been enhanced once the study moved beyond one school. The researcher had knowledge of and could have disaggregated teacher data by grade level, subject taught, gender, and type of school. Comparative data would benefit future research studies about professional development, deliberate practice, and teacher self-efficacy. However, the researcher for the purpose of the study did not establish research questions, hypotheses, or gain participant and IRB approval for those constructs during the earlier stages of the design thinking process, and thus did not change the methodology or teacher participant characteristic questions before the start of the testing phase.

Additionally, the essential variable being explored in the study was not the validation of a factor or construct of self-efficacy requiring a large sample size or a subgroup comparison of teachers. Tschannen-Moran and Hoy (2001) previously established stable inter-correlations between two factors of personal teaching efficacy and general teaching efficacy as well as three constructs of teaching efficacy in instructional strategies, classroom management, and student engagement. The need for a valid testing instrument was why the researcher chose the *Teachers' Sense of Self-Efficacy Survey.* At the core of the researcher's study was an exploration of professional development rooted in deliberate practice, defined by Ericsson et al. (1993) and affirmed by Ericsson (2020),

and whether deliberate practice supported the emergence of resilience and teacher self-efficacy. Deliberate practice required sustained observation and interacting participant commitment to a more in-depth intervention of professional development than just taking a survey. In the end the sample size of participants replicated a cohort model of in-service and experienced teachers who sustained degrees of deliberate practice for several weeks with multiple interactive components including a video module series, goal setting, and goal reflection, and the pre and posttest self-efficacy survey.

A second constraint of the study was the asynchronous flexibility of the intervention and the broad timespan participants had to complete the modules, the goal setting, and the goal reflection elements. Teachers were given flexibility to coordinate participation in the research study around individual working schedules. During the empathy, define, and ideate stages the researcher had been embedded at the original study school and time was coordinated with original stakeholder members who participated in empathy mapping, open-ended surveys, and a focus group session on ideating a prototype for testing. If the researcher's professional teaching role continued at the study school the professional development intervention would have been controlled and limited to a particular teaching team and school, which would have been an additional limitation.

Opening the study to a broader network of teachers presented a more dynamic and diverse study. However, as participants completed the study asynchronously some participants chose various degrees of participation. Some participants only watched the video modules as professional development and took the pre and post efficacy survey, some teachers completed the goal setting and practice plans and the survey, and some teachers completed all tasks including goal setting, goal reflection on deliberate practice

planning, and the surveys. The degrees of participation provided depth and richer examination of deliberate practice and the ability to raise efficacy which the quantitative analysis supported. Regarding the qualitative responses embedded in the intervention modules, the open-ended responses provided valuable insight on what mattered to teachers indicated through individual teacher goal setting and goal reflection. However, not all teachers completed all aspects, and some teachers may have completed more tasks if the intervention was in person, had a more coordinated time structure, or was at the same study school.

Another issue of the study was flexibility for the teachers completing the modules at varying intervals of time. Certain teachers were done in four weeks, and some took eight weeks. Some teachers completed the modules and then immediately took the post efficacy survey, and other teachers completed the modules but waited to take the survey later and had to be reminded to take the post survey before the study was closed. Time between modules and taking the post survey may or may not have influenced teacher responses. Additionally, teachers were working through the challenges of being active teachers confronted with the day in and day out requirements of various teaching roles. Teachers ranged in grade levels from kindergarten through 12th grade and across subject matter. Certain teachers were pressed with outside motivations to produce academic growth for the students through multiple assessments, and other teachers did not work with similar pressures, but undoubtedly faced different pressures. There was no established methodology used to control for the diversity of teacher roles. However, the research concluded the benefits of a broader study with greater teacher diversity beyond one school outweighed the limitation. If the study was conducted again, a more organized

cohort model could be developed to account for teacher diversity and to establish a more collaborative experience for participants.

A final issue involved the researcher changing professional roles during the study. At the outset of the study the researcher was embedded in the work of the initial study school as a faculty member, program coordinator who helped craft and deliver professional development at the school. Over the past five years, the researcher worked to distribute and analyze multiple school community surveys measuring, among other things, teacher confidence and teacher self-efficacy. The researcher created and implemented curriculum across grade levels and subject areas in collaboration with many of the existing teaching faculty. Finally, the researcher recently served on the steering committee for the reaccreditation of the school, chaired a subcommittee on equity and inclusion, and coauthored multiple chapters of the school's self-study accreditation report. If the research study remained embedded only at the original study school, the scope and depth of professional development intervention may have been much different. The researcher would have been able to utilize existing professional development structures, professional learning communities (PLCs), and consistently monitor and communicate the feedback and iterative responses of the intervention during the testing phase. For example, the asynchronous video presentations could have been done in person rather than published only online.

Considering the issues of the researcher changing roles, opening the study to a broader network of teachers presented a more usable research design and professional development intervention program for future research, including studies seeking a larger sample size. The role change also removed a degree of bias with a researcher only

conducting research at the school in which the teacher worked. The broader research sample provided a continuity of experiences for a diversity of teachers across multiple schools as each accessed and interacted with the professional development modules and allowed teachers autonomy in choosing professional development goals beyond offerings emphasized by a particular school, and the process maintained the integrity of the deliberate practice criteria even as freedom was granted for teachers to use deliberate practice at various degrees. If the study had remained embedded at one school, the researcher may have controlled the degree of participation by teachers and, intentionally or unintentionally, limited the autonomy and freedom of teachers to use deliberate practices as each teacher needed or were capable of during the study. The broadening of the research allowed teachers to choose, or not choose, goal setting, deliberate practice planning, and goal reflection elements embedded in the professional development intervention. As teachers self-selected various degrees of practice the experience brought a new level of depth and comparative data to the research study with pertinent implications for future studies on deliberate practice and its ability to support resilience and emergence of self-efficacy.

Moving beyond addressing the challenges, constraints, and issues involving the research study, critical analysis must consider the foundational research questions and hypotheses presented at the outset in Chapter One.

Research Question 1: *How does professional development for teachers adhere to the theoretical model of deliberate practice, if at all?*

The researcher answered Research Question One during the empathy stage through the *Professional Development and Deliberate Practice Survey* given to 42

faculty at the initial study school. 95.65% of 23 respondents expressed a lack of clarity on how professional development choices were made at the school. 56.17% of respondents indicated the lack of time as a central issue, and only 27.2% of respondents indicated having adequate time for practicing professional development strategies. Given that Ericsson's (2020) criteria for deliberate practice and included (1) clearly defined and fully understood goals, (2) the ability to individually perform tasks, (3) timely, informative, and actionable feedback, (4) repetition and regular practice, and (5) collaborative guidance from other teachers and administrators, it was concluded that professional development for teachers at the initial study school did not adhere to a theoretical model of deliberate practice as defined by Ericsson et al. (1993) and Ericsson (2020). The researcher concluded comparative data from other teacher satisfaction surveys would indicate similar findings across the educational landscape.

Research Question 2: *How does the deliberate practice of professional development and instructional feedback inform the professional capital and professional capacity for teachers, if at all?*

Deliberate practice by the teachers in the research study engaged all aspects of professional capital, as defined by Nolan and Molla (2017) including acquiring individual human capital (the knowledge & skills expressed in the video module series), using social capital (the creation of a new cohort and collaborative learning community of teachers who interacted with the researcher, and to a degree each other), and using decisional capital (having the autonomy to create and reflect on individual professional goals). The clarity and understanding of the professional development intervention was tethered to a goal of instructional expertise in teaching as defined by Grant (2022). Teachers were

following deliberate practice as they created goals for instructional expertise in content, pedagogy, and student-teacher relationships, and reflected on progress made towards those goals. Teachers used deliberate practice in connection to professional capacity, as defined by Stoll (2020), through reflective responses embedded in the professional development intervention detailing their ability to learn, change, and grow. Furthermore, 71.4% of participants who completed all aspects of the professional development deliberate practice including the video modules, goal setting survey, planning tools, and goal reflection surveys indicated progress and growth towards their individual teaching goals for content expertise and student relational expertise.

Research Question 3: *How will providing professional development for teachers in accordance with a framework of deliberate practice improve the self and collective efficacy of teachers, if at all?*

Answering Research Question Three was the primary purpose of the *Teachers' Sense of Self-Efficacy Survey.* All Participants indicated significant growth teacher self-efficacy after engaging in deliberate practice embedded in the professional development intervention. Furthermore, teachers who adhered to the fullest degree of deliberate practice offered in the intervention and used goal setting, practice planning, and goal setting, indicated higher scores of self-efficacy that teachers who only set goals and watched the module videos or teachers who only took the pre and post after watching the videos. Ericsson's (2020) key argument about the original criteria of deliberate practice was the ability deliberate practice had, more so than innate talent, to build expertise deliberate practice required specific criteria. In a sense, teacher participants who did not complete all aspects of the professional development failed to meet the standard of

deliberate practice affirmed by Ericsson (2020), and those teachers were more aligned to novice practice, purposeful practice, or intentional practice. Although all participants saw increases in self-efficacy scores after the intervention, the teachers that engaged in deliberate practice saw higher levels of improvement in teacher self-efficacy.

The mixed-method answers to the fundamental research questions allowed the researcher to determine deliberate practice as a powerful framework for professional development capable of addressing core issues of teachers' professional capital and supported change, learning, and growth for the professional capacity of teachers. The findings of the study allowed the researcher to reject *Null Hypothesis 1*: *There is no difference between pretest and posttest measures for teacher efficacy.* Across all groups of teacher participants, and across all constructs of teacher efficacy, including instructional strategies, classroom management, and student engagement, the professional development intervention with deliberate practice produced higher scores of teacher self-efficacy. Improvement in teacher efficacy in student engagement saw the highest improvement after engaging in the professional development intervention. Participants who completed all aspects of deliberate practice raised teacher efficacy in student engagement by a mean score of 7.714. These findings underscored the value of teacher self-efficacy and the collective efficacy of teachers, as indicated by Hattie (2018) had to support student engagement and learning.

Integration into Practice

The researcher's critical analysis of the study suggested four key priorities for integration into the broader field of education and teaching: a method of educational praxis supported by deliberate practice, a synthesized framework for teacher professional

development, emphasis on transformational leadership and instructional coaching, and finally affirming democratic values for teachers and students. Each key priority was detailed as followed to offer a path forward for continued research on teacher professional development and teacher efficacy.

Educational Praxis Supported by Deliberate Practice

The first key priority taken from the study for integration into practice involved a need to integrate deliberate practice into teaching, professional development, and the broader domain of education and school systems; more than a simple play on words. Ericsson et al. (1993) articulated specific, high standards for deliberate practice including (1) clearly defined and fully understood goals, (2) the ability to individually perform tasks, (3) timely, informative, and actionable feedback, (4) repetition and regular practice, and (5) collaborative guidance. Ericsson (2020) reaffirmed the criteria of deliberate practice and pushed back against criticism that talent or another attribute beyond the locus of control of individuals was a more valuable predictor of expert achievement. While Ericsson (2020) acknowledged individuals possessed a diversity of characteristics that may or may not support achievement including grit, resilience, confidence, efficacy, or perceived degrees of talents, the core characteristic all expert practitioners maintained, across domains, was the use of deliberate practice. Achieving expertise in teaching required deliberate practice.

The scholar practitioner found a habit of praxis embedded with deliberate practices had the ability to elevate teaching and learning towards a professional praxis rather than a haphazard array of educational initiatives. Ericsson et al. (1993) began the study of deliberate with the exploration of virtuoso musicians, chess masters, dancers,

athletes, and other performing artists, before later research on deliberate practice expanded to teaching and the domain of education (Grant, 2022). Music educators had long argued the importance of practice as not only a tool for student achievement but as justification for why music education, and other performance-based disciplines, mattered in schools (Elliot, 1995, 2013, Regelski, 1998, 2005, 2016). Furthermore, music educators integrated deliberate practices into a larger agency of praxis defined by "making practical judgments, guiding the action taken, and evaluating the 'goodness' of results" (Regelski, 1998, p. 29).

The underlying problem of practice at the beginning of the study was teacher attrition, lack of teacher satisfaction, and the negative consequences low teacher efficacy had on student achievement. Beneath the surface of teacher dissatisfaction, the study revealed teachers lacked clarity about professional development and were often bombarded by a "blizzard of guidance" with layers upon layers of educational initiatives (Bryk et al., 2015, p. 64). When initiatives were not rooted in deliberate practice integrated as part of an overall agency of praxis, teachers suffered and self-efficacy had the potential to decrease. On the other hand, the results suggested when professional development was embedded with deliberate practice and anchored to an agency of praxis, teacher self-efficacy increased and gave greater potential for increased collective efficacy of teachers. The findings argued teacher efficacy, like learning itself, was validated through continuous habits of practice. The study reaffirmed progressive education involved a continuity of interactive learning experiences for teachers and students. Dewey (1916) stated, "The educational process has no end beyond itself, it is its own end" (p. 89). Integrating deliberate practice, design thinking, and agencies of praxis are

iterative, dynamic, and offer viable methods for students and teachers to learn together and for schools to grow, thrive, and continue moving forward.

Expanded Study and Changing Roles

Between the prototyping phase and the testing phase the researcher's teaching role changed. After serving at the initial study school for five years as a music and social studies teacher and working as a team member and coordinator for the diversity, equity, and inclusion faculty committee, the scholar practitioner accepted a new position at a nearby suburban, public school district working as a teacher and school improvement team member at the middle school level. The administration and faculty of the initial school supported the continuation of the research study at the school including teacher participation in the testing phase. While the nature of study as an embedded problem practice specific to a single school community changed, the new role offered the potential to expand the study to other schools, both public and private, and to a broader range of grade levels including middle school and high school teachers working beyond the primary level of the initial study school. The limitations and benefits of the expanded study were discussed in detail during the critical analysis of the data.

Transformational Leadership & Instructional Coaching

A third key priority involved school administrators, instructional coaches, and other educational professionals tasked with leading and supporting teachers in response to necessary changes schools needed to make to best serve student learning. The literature explored how educational change models were often adapted by school leaders from the business world including creating urgency for a needed change, disrupting existing cultures, challenging antiquated organizational systems and practices, and implementing

new programs to raise efficiency and school achievement (Hayes, 2022; Kotter, 1999). Professional development for teachers was a necessary part of educational change, and the researcher did not explore any fundamental problems with the need for educational changes in teaching and learning. A problem observed by the researcher was how change directives were implemented, how teachers understood or were aware of school leaders' perspectives about change, and how teachers were incorporated into a shared process of change. The researcher contrasted business models of organizational leadership with human-centric models of educational leadership when designing and implementing the study. According to Heifetz (2021) and Collazo (2021), adaptive, authentic, and responsive school leaders focused on cultivating human relationships, validating shared vision, and empowering themselves and teachers to learn, grow, and improve. Integration of educational leadership centered on promoting shared values and interprofessional competence could serve as more vibrant models for teachers and the field of education (Martens & Dehaes, 2003; Wang & Zorek, 2016).

School leadership included instructional coaching for teachers. The synthesized framework for teacher professional development and the criteria of deliberate practice used in the study offered key aspects for improving the coaching of teachers. First, the intervention tools were not designed as transactional processes created for the purpose of implementing a particular school improvement initiative already established and beyond the teachers' control. Teachers co-created improvement goals based on the synthesized framework instead of being given a mandate for instructional change or improvement. Second, reflective feedback and self-study was intended to influence behavior, inspire, motivate, recognize individuality, and encourage creative change by participants (Bass &

Riggio, 2006; Vanderpol, 2019). Finally, the goal of coaching was not a target of achievement, but rather a higher sense of self satisfaction and efficacy concerning the teachers' ability to teach and gain instructional expertise. School leaders often looked to the world of sports and performance embedded with assessment data measuring wins and losses. However, a trademark of expert coaches was how each transcended winning and losing and defined success in terms of an individual's ability to maintain core values and principles which raised individual confidence and efficacy and in turn supported peak performance. Implementing transformational coaching tethered to a synthesized framework for teacher professional development offered a pyramid of success for instructional coaches and teachers.

A Synthesized Framework for Teacher Professional Development

A second key priority involved the need for a synthesized framework for teacher professional development. The first criteria of deliberate practice, according to Ericsson (2020), involved creating clear, and well-understood goals with specific target for improvement. Based on preliminary research at the study school, the researcher observed professional development goals for teachers often lacked clarity, were not mutually created by teachers, administrators, and students, and were elusive other than achieving adding a new layer of professional work for teachers. During the empathy building phase, the initial study school reported 95.65% of teachers were unclear about why or how professional development initiatives were chosen by the school. School change initiatives, including professional development programs were supported by important reasons and tethered to improving student learning, raising school climate, and instilling vibrancy into a school culture. The researcher experienced professional development

initiatives in diversity, equity, and inclusion with good intentions for supporting teachers, students, and families anchored in the mission and values of the school. However, fostering the resilience needed by teachers to embrace professional development, collaborative learning, and organizational change required clearing communicating goals, prioritizing the needs of teachers related to the goals, and addressing how such initiatives directly connected to building professional capital and capacity, enhancing teacher expertise, and improving teacher self and collective efficacy (Chen at al., 2020: Kosi, 2020; Morote et al., 2020).

The professional development intervention created during the study involved designing and utilizing a synthesized framework for teacher professional development included in Figure 2.The framework presented each purpose for teacher professional development through the three video modules of the professional development intervention. The process used design thinking and was iterative with the ability to cycle back and forth between categorical purposes for teacher professional development as teachers needed. Integrating a synthesized framework for teacher professional development allowed teachers to gain clarity and individual purpose regarding professional development due to the application aligned with some particular aspect of teacher expertise. The framework also provided categories for reflective feedback for teachers and connected progress towards individual goals towards building collective teacher efficacy and not only fulfilling administrative initiatives.

Figure 2

Synthesized Framework for Teacher Professional Development

Professional Needs	Expertise in Teaching	Teacher Self-efficacy
Needs of Teachers (Costa & Kallick, 2017) • *Cognitive* • *Physical* • *Emotional* • *Social* • *Spiritual*	**Instructional Expertise in Teaching** (Grant, 2022) **Content** • *Expert knowledge of content*	**Teacher Self-efficacy** (Tschannen-Moran & Hoy, 2001) **Instructional Strategies** • *Efficacy in the ability to provide content to students.*
Professional Capital (Nolan & Molla, 2017) • *Human capital* • *Social capital* • *Decisional capital*	**Pedagogy** • *Expert knowledge of pedagogy related to content*	**Classroom Management** • *Efficacy in the ability to manage classroom success and the learning environment*
Professional Capacity (Stoll, 2020; Hargreaves & O'Connor, 2018a) • *Authentic relationships* • *Co-creating goals* • *Substantive information* • *Reflection & Feedback*	**Student Relationships** • *Expert knowledge of how to relate and apply pedagogical approaches to specific student needs and contexts.*	**Student Engagement** • *Efficacy in the ability to relate to students support individual student achievement.*

Liberating Teachers and Students

The final key priority from the research study was advocating a reaffirmation of the democratic values of freedom, equal opportunity, and justice to the professional development for teachers. Dewey (1916) connected education, teaching, and learning to a higher call for the preservation of democracy and democratic principles arguing

democracy was not only a form of government, but also required an associated way of living together. Education and teaching had the capability of being more than an economic instrument for the procurement of student achievement, test scores, and the momentary evidence of student learning produced at particular times and places. Dewey, and other progressive educators believed education was a living process justified through its shared experiences, interactions, and the associated meaning rendered with students and teachers through democratic practices rooted in mutual regard and respect.

The study initially began in the context of school efforts to promote diversity, equity, and inclusion and a needs assessment examining why professional development programs often failed to achieve certain goals for teachers, students, and school communities. Community survey data indicated teachers lacked resilience and self-efficacy resulting in needed change. Educators long argued the merits of social justice education, critical pedagogy, and emancipatory practices education and schools. The researcher suggested teachers, when given freedom, and empowered with deliberate practices supporting instructional expertise, not only became efficacious of one's teaching abilities, but more responsive and capable of serving the diverse needs of the students. When teachers felt a sense of belonging, bridges were built among students and each educator became increasingly capable of facilitating a shared culture representing a diversity of views and experiences (Powell & Toppin, 2021). Thus, teachers could be stewards of democratic values as each modeled and practiced democratic association with students securing the blessings of liberty and learning both in school and beyond as Dewey (1916) intended.

Conclusion

The inception for the research study began far before crafting a problem of practice examining teacher efficacy in particular school settings and before a review of the literature regarding the professional development of teachers, educational leadership, theories of professional capital and capacity, or exploring the foundational philosophy of critical pragmatism guiding a progressive, and democratic approach to education and learning. The seeds of the study began with a young music student excited to play the violin who simply wondered how to get better at playing an instrument. As the student grew and pursued music, alongside sports like basketball and baseball, the student was eager and even joyful, at times, to practice. The student would play for hours upon hours learning new skills and new ways to perform songs that spoke to him. However, like many educational journeys, setbacks occurred, moments of doubt creeped into the student's mind, and a fear of lacking enough innate talent to reach one's highest aspirations and dreams threatened to harden a fixed mindset. In those moments, when toughness and grit alone could not help the student to prevail with any sense of improvement, the student uttered words he never once dared speak aloud, "I'm going to quit."

However, the author of the study did not quit studying music, and through resilience and deliberate practice, the researcher pursued music performance from the age of four to the university level and beyond and enjoyed an enriching diversity of experiences in music and music education. Before learning how to deliberately practice, the key human element in turning the heart and soul of the researcher away from giving in and giving up on music was a teacher who told him not to quit. Her name was Kathy.

Teachers like Kathy, and other countless coaches and educators along the way served as personal champions for the researcher through his journey in music, music education, athletics, and even earning an educational doctorate dedicated to the craft of teaching. Teachers modeled persistence and were the guiding hands showing the way forward. For the researcher, those experiences nurtured and reinforced a belief all teachers could learn to support student efficacy in the power of learning and practice, not because expert teaching ensured student success as an outcome or product, but because success could be redefined by an expert teacher, as a student's sense of purpose, self-confidence, and self-efficacy in a personal choice to keep going and keep learning. Those were the reasons teachers became teachers at all, and they remained the core reasons so many teachers returned to classrooms every day, in spite of growing teacher dissatisfaction, lower efficacy, and teacher attrition.

Teachers deserved the same support students needed for autonomy, collaboration, and opportunities to demonstrate resilience as they pursued individual goals for instructional expertise, and teachers deserved the ability to self-reflect on their own sense of efficacy in content, pedagogy, and relationships with students. Teachers deserved deliberate practice serving as a continuous mechanism working to elevate the professional status of teachers in the schools and in the broader communities. Teachers knew and understood the benefits of deliberate practice, and the value self-efficacy and individual confidence had on a student's ability to learn. Teachers had been sharing those benefits and values with students since the beginning of education and schooling. The time had come to return these benefits and values back to teachers.

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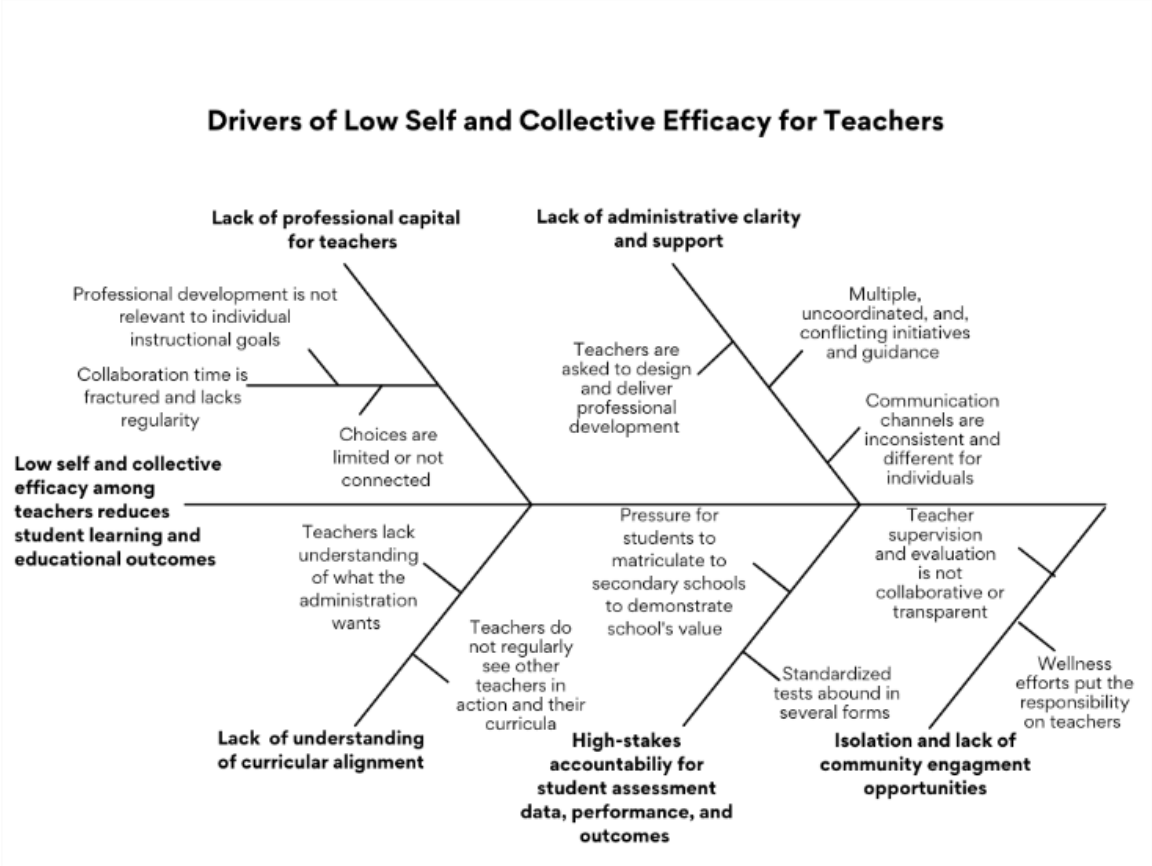
Appendix A: Drivers of Low Self and Collective Efficacy for Teachers

Fishbone Diagram



Appendix B: Professional Development and Deliberate Practice Survey

- What do you believe are the qualities of a strong professional development program for teachers?

- Describe professional development activities that either met or did not meet your specific professional growth needs as a teacher.

- How are choices about professional development opportunities and professional goals made in your organization? Describe your voice in making decisions and choices about professional development.

- Describe how your professional schedule allows, or does not allow for consistent time to regularly practice and collaborate with other teachers regarding professional learning and growth?

- Describe the support and feedback, if any, you receive for professional learning and growth? Explain your answer.

Appendix C: Deliberate Practice Planning Tool

Weekly Deliberate Practice Plan for Instructional Expertise in Teaching:

Describe your professional growth goals or each aspect of instructional expertise as defined by Grant (2022) and Shulman (1987) including content mastery, pedagogical mastery, and student-teacher relational mastery. *Document the progress you made towards each goal including frequency & consistency of practice, evidence of learning & data, and collaborative feedback & coaching support from other educators and administrators.*	
Content Mastery Goal:	Frequency of Deliberate Practice:
	Data & Evidence of Learning:
	Collaborative Feedback, Mentoring, & Coaching:
Pedagogical Mastery Goal:	Frequency of Deliberate Practice:
	Data & Evidence of Learning:
	Collaborative Feedback, Mentoring, & Coaching:
Relational Mastery Goal:	Frequency of Deliberate Practice:
	Data & Evidence of Learning:
	Collaborative Feedback, Mentoring, & Coaching:
Additional Notes on Deliberate Practice & Professional Growth:	

Appendix D: Teachers' Sense of Efficacy Survey (Tschannen-Moran & Hoy [2001])

Teachers' Sense of Efficacy Scale[1] (long form)

Teacher Beliefs	How much can you do?								
Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.	Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal
1. How much can you do to get through to the most difficult students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2. How much can you do to help your students think critically?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3. How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4. How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5. To what extent can you make your expectations clear about student behavior?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7. How well can you respond to difficult questions from your students ?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8. How well can you establish routines to keep activities running smoothly?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9. How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10. How much can you gauge student comprehension of what you have taught?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11. To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12. How much can you do to foster student creativity?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
13. How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
14. How much can you do to improve the understanding of a student who is failing?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15. How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
16. How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
17. How much can you do to adjust your lessons to the proper level for individual students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
18. How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
19. How well can you keep a few problem students form ruining an entire lesson?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
20. To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
21. How well can you respond to defiant students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
22. How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
23. How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
24. How well can you provide appropriate challenges for very capable students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Biographical Information or Vitae

Brian Elder has served as an educator for over 20 years teaching music, social studies, coaching athletics, and serving as a program coordinator for innovative learning practices and equity and inclusion. Mr. Elder has been recognized for teaching excellence by the National Education Association (NEA), the Missouri Scholars Academy, and has presented teaching clinics on music, coaching, and responsive teaching practices at a variety of schools and conferences. After earning Bachelor of Arts degrees in Music and Political Science at the University of Missouri and pursuing music professionally, Mr. Elder began his teaching career and completed a Master of Music Education degree through Boston University. His masters' thesis focused on redesigning school curricula to be authentic and reflective of student voice and culture. In 2019, Mr. Elder finished an Educational Specialist Degree in Educational Administration at Lindenwood University and became one of the initial cohort candidates of the redesigned Leadership, Educational Doctoral program at LU in membership with the Carnegie Project of Educational Doctorate (CPED). Mr. Elder lives in St. Louis, Missouri with his wife and two sons, and continues to love playing music, coaching sports, and traveling with his family.