Leadership, Organizational Routines, and Innovation:

A Study of the Implementation of Project Based Learning in Three Elementary Schools

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A Capstone Project

Presented to

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by

Jennifer Hertzberg, Ed.S.

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EXECUTIVE SUMMARY

This study examined how school leaders, including principals and teachers from three elementary schools, translated a district aim, Project-Based Learning, to promote new pedagogy within their buildings. Each school utilized organizational routines and practices, such as School Innovation and Improvement Planning (SIIP), Collaborative Learning Teams (CLTs), and school-embedded Professional Learning and Development (PLD). However, the ways in which these practices were specifically used to further the implementation of Project Based Learning were quite varied.

The literature examined for this project included a broad review of implementation research, as well as a focus on implementation literature specific to Project Based Learning. In addition, the topics of organizational routines, principal leadership, and teacher leadership were discussed as they relate to the ways schools interpret new policy and enact changes to instruction. Thus, the intersection between implementation and organizational routines and practices underscored the conceptual framework for this study.

The conceptual framework was heavily influenced by Crossan, Lane, and White's Organizational Learning Model (1999) and Leithwood's Core Leadership Practices (2012). According to Leithwood, principals set the direction for their schools, build capacity in their staff, redesign their organization to fulfill the scope of new policy, and manage the teaching and learning program. While examples of these essential practices were present within each school, there were very few similarities in routines and practices

that existed among these school sites. This finding validated an assumption regarding autonomy and school leadership. Principals often utilize their independence to selectively elevate routines and practices to implement new pedagogy within their schools.

This study took place between February and March 2019 and utilized semi-structured interviews, surveys, and focus groups to target principal and teacher understanding of PBL, as well as to determine what organizational routines and practices, if any, were used to support the uptake of PBL within schools. To identify possible factors that might encourage or inhibit the implementation of PBL, semi-structured interviews with principals, and surveys and focus groups with teachers, revealed factors unique to their schools. It is important to note that only teachers in grades three and five participated in the focus groups, as these grade levels were transitioning to more authentic means of assessment for end-of year testing. Data analysis included triangulating responses from central office, school principals, and teachers within a cross-case analysis and yielded insights regarding the instructional coherence between central office and schools.

This study revealed that principals and teachers perceived professional learning as integral to PBL implementation, while CLTs were not typically used to plan for PBL; rather, teachers used common planning time outside of CLTs to create and refine inquiry-based, authentic learning experiences. SIIP goals were developed to target a specific number of PBL experiences, but these goals did not appear essential to the uptake of

PBL. Furthermore, SIIP goal targets were not well-known to all staff, nor consistently revisited throughout the year.

Additional findings revealed that there were discrepancies between Title I and non-Title I schools. These differences included principal involvement in the implementation process, as well as access to technology and resources to advance PBL. While these factors illuminated issues regarding equity within this district, they did not prevent the uptake of new pedagogy in the less affluent school. Accessing central office PBL support also varied between schools.

As a result of inconsistencies in schoolwide implementation of new pedagogy, recommendations were made to strengthen principal leadership and teacher efficacy through targeted professional learning and development that supports system, school, and individual growth.

Keywords: curriculum implementation, program implementation, active learning, instructional improvement, instructional innovation, teaching methods, teacher professional development, professional learning communities, organizational routines, instructional practice, instructional leadership.

Jennifer Hertzberg
Department of Leadership, Foundations, and Policy
Curry School of Education
University of Virginia
Charlottesville, Virginia

APPROVAL OF THE CAPSTONE PROJECT

This capstone project, "Leadership, Organizational Routines, and Innovation: A Study of the Implementation of Project Based Learning in Three Elementary Schools," has been approved by the Graduate Faculty of the Curry School of Education in partial fulfillment of the requirements for the degree of Doctor of Education.

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Capstone Chairperson (David Eddy-Spicer, Ed.D.)

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Capstone Committee Member (Sara Dexter, Ed.D.)

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Capstone Committee Member (Michelle Beavers, Ed.D.)

March 30, 2020
Date of Defense

DEDICATION

This work is dedicated to my family, most especially my grandparents, Sam and Bernice

Hertzberg, who while not with me today, are forever in my heart.

To my parents, Howard and Robin Hertzberg, for their support, and to my sister, Dr.

Shari Saideman, for paving the road to higher education by technically becoming the first

Dr. Hertzberg, even though she published under her married name.

To my colleagues, I dedicate this project to you. I am in awe of the many ways you foster

innovation within schools across the county. Thank you for sharing your friendship with

me and becoming my extended family.

I am eternally grateful to my professors at the University of Virginia who helped me

navigate this learning journey. Through this program, I learned so much about leadership,

resilience, and who I aspire to be.

Veni. Vidi. Vici.

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SECTION ONE: INTRODUCTION

Nesting County Public Schools (NCPS)[1] introduced a new strategic plan that

endeavored to have schools develop more engaging, rigorous, and authentic learning

experiences for all students during the 2016-2017 school year. To address this specific

district aim, NCPS adopted Project Based Learning (PBL), a method for instruction that

promotes student-centered learning through inquiry and investigation, and in which

students seek solutions for open-ended problems. Successful implementation of such

instructional innovation relies heavily on the quality of teacher instruction (Barron &

Darling-Hammond, 2008) and principal leadership (Dove & Freely, 2011), thus

providing the impetus for a closer look at the interconnections among policy, system, and

school that forward new pedagogy (Spillane et al., 2002). This consideration of wider

systemic characteristics in the conceptualization of implementation emphasizes how it is

critical to consider how those who are responsible for implementing change interpret new

policy, and how their interpretation of new policy influences the practices that allow new

initiatives to take shape and sustain their momentum within schools.

Organizational routines at the school level demonstrate where leadership and

policy intersect. Looking closely at how leadership reinforces or refines three localized

school routines, including School Innovation and Improvement Planning (SIIP),

Collaborative Learning Teams (CLTs), and school-embedded professional learning and

development, offered insight into how these practices impact school change.

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[1] Pseudonyms have been used to protect confidentiality for personal and place names and
for public documents used in my research.

Conceptualizing PBL in NCPS

The development of a long-term strategic plan yielded numerous aims for Nesting County Public Schools. Adopted by the School Board in July 2015, exactly two years after Dr. Torres' introduction as Superintendent, the plan was communicated to school-level leadership without articulating the supports necessary to operationalize the outcomes that were proposed. The implementation of Project Based Learning across all schools and grade levels was one of many goals, and soon after the plan's launch, a new learning model and additional expectations associated with Portrait of a Graduate attributes were released. This rapid succession of aims complicated the uptake and implementation of PBL in Nesting County schools.

The strategic plan, known as Spark, included the goals and actions NCPS forwarded to expeditiously "close achievement gaps, support teachers, provide resources to schools, and help students succeed in life" (NCPS, 2015). Reflecting the input from the entire NCPS stakeholder community, the plan defined four comprehensive goals including student success, a caring culture, a premier workforce, and resource stewardship. These goals formed the core of NCPS's Portrait of a Graduate (PoG) and furthered its expectation that all students will graduate with skills that reflect excellent communication, collaboration, critical thinking, global citizenship, as well as develop into goal-oriented, resilient learners; the competencies necessary for student success, not just in Nesting County Public Schools, but as contributing members of society (NCPS, 2015). In addition, a framework was introduced during the 2016-2017 school year to

engender a deeper understanding of best practices for teaching and learning that encourages the advancement of PoG skills.

Known as the NCPS Learning Model (Figure 1), the tenets of PBL (e.g., inquiry-based, student-centered learning environment, performance-based assessment to demonstrate mastery, and learning that is driven by real-world problem-solving) are all deeply embedded within each of its four quadrants.

Figure 1

NCPS Learning Model

Learner-Centered Environment

Meaningful Learning Experiences

Best Practices for Teaching and Learning

Purposeful Assessments

Concept-Based Curriculum

Note. This graphic was adapted from the original NCPS model.

This Learning Model provides support and clarity to teachers regarding expectations for instruction, particularly as schools have been tasked to refine the ways in which they plan, teach, assess, and reflect on the learning experiences that are developed for students. Project Based Learning, as deemed by the county, represents an enhanced instructional practice (NCPS, 2015).

Problem of Practice

        Establishing coherence among the intentions behind Spark, the NCPS Learning Model, and NCPS's 200 schools presented many challenges. These challenges include the ways in which schools define, or redefine, their organizational routines and practices to support Project Based Learning. At present, NCPS has two dedicated personnel who are specifically tasked with helping schools understand the principles of Project Based Learning and how PBL relates to integrated, content-based instruction and assessment. These specialists are also flanked by other central office personnel who connect PBL to their department mission and responsibilities. However, while the district offers centralized support to schools through targeted professional development, such as PBL classes and CLT planning opportunities, there is a tacit burden placed on school-based leadership, including administration and teachers, to carry out the implementation of Project Based Learning. Therefore, tantamount to successful implementation, district leadership must understand how to leverage school-based leadership to promote instructional change, as well as harness the specific drivers that impact instructional change in schools (Fullan, 2014). This suggests that schools and central offices that work together to negotiate district demands with the needs of schools (Honig & Hatch, 2004), as well as provide opportunities for ongoing reflection and feedback to ensure alignment (Agullard & Goughnour, 2006), can create the conditions necessary to sustain new instructional practices.

Research has shown that instructional innovation is reinforced by leaders who encourage risk-taking and foster entrepreneurship (Moreno et al., 2013), and, more importantly, who support reflection through routines and practices that "generate a continual dynamic of learning and improvement within their schools" (Schleicher, 2012, p. 49). To help guide schools in supporting such innovation, this capstone project studied one facet of the NCPS Strategic Plan, Spark; specifically, how the NCPS Learning Model was understood and implemented by school leadership and teachers in order to adopt Project Based Learning to promote the acquisition of Portrait of a Graduate skills. Implementation of Project Based Learning was examined through three longstanding routines that currently exist at every school in some form. These include: School Improvement Planning (SIIP), the Collaborative Learning Team (CLT) cycle, and school-embedded PBL-related Professional Learning and Development (PLD) opportunities.

The Conceptual Framework

The conceptual framework for this study emphasizes the importance of routines in initiating and sustaining the implementation of Project Based Learning. In this study, I assumed that schools, based on their individual needs, utilized their SIIP, CLT cycle and PLD in a variety of ways to forward Project Based Learning.

Theories of organizational learning, as these apply to education and schools, ground the conceptual framework as it underscores that the adoption of new instructional techniques relies on how policy is understood and interpreted by school-based leadership, and that the promotion of new ideas between the individual, group, and organization

requires recurrent practices (Wiseman, 2007), such as organizational routines. Wiseman (2007) defines organizational learning as "a cyclical process through which knowledge that is learned on an individual or group level is objectified on the organizational level, institutionalized and embedded in the organizational memory" (p. 1113). This indicates that the implementation of Project Based Learning is furthered by routines that cultivate administrator and teacher sensemaking, and that the institutionalization of new ideas occurs through "the design of the systems, structures, and procedures of the organization" (Crossan et al., 1995, p. 347). CLTs, for instance, also described as a *professional community of learners* (Astuto et al., 1993), provide opportunities for administrators and teachers to "continuously seek and share learning and then act on what they learn," (p. x) thus providing an opportunity to build teacher capacity individually and collectively to support student learning. "This arrangement has also been termed communities of continuous inquiry and improvement" (Shaughnessy, 1998, p. 1).

The conceptual framework blends Crossan, Lane, and White's 4I Framework (1999), which includes the processes of intuiting, interpreting, integrating, and institutionalizing, with core leadership practices of school leaders (Leithwood, Harris, and Hopkins, 2008). The framework connects to organizational learning in that it explains how individuals and groups process new policy and relate it to the needs of the organization. The 4I Framework is based on four key assumptions that suggest that each of the 4Is are related in "feed-forward and feedback processes across the levels" (Crossan et al., 1999, p. 523), demonstrating a high regard for reflective practice, and that the

processes associated with the 4Is are progressive in nature. While some of the processes are unique to the individual learner, such as intuiting, other processes relate strategically to teacher teams and the school, as the organization seeks to integrate and institutionalize new teaching methodology.

Table 1

4I Framework

Learning/Renewal in Organizations: Four Processes Through Three Levels		
Level	Process	Input/Outcomes
Individual	Intuiting	Experiences
		Images
		Metaphors
	Interpreting	Language
		Cognitive map
		Conversation/dialogue
Group	Integrating	Shared understandings
		Mutual adjustments
		Interactive systems
Organization	Institutionalizing	Routines
		Diagnostic systems
		Rules and procedures

Note. Reprinted from Crossan, M., Lane, H., & White, R. (1999). An organizational learning framework: From intuition to institution. *The Academy of Management Review*, *24*(3), p. 525. (https://www.jstor.org/stable/259140). Copyright 1999 by Academy of Management. Reprinted with permission.

Core practices of school leaders include contextualizing the needs of their school to promote dialogue about new pedagogy. This includes the processes of intuiting and interpreting new policy. These two processes, coupled with how teachers integrate new understandings about instruction, reinforce the need, development, and sustainability of routines. Synthesizing the practices of successful school leaders, seven claims are evidenced throughout several empirical studies (Leithwood et al., 2008). These claims represent how leadership impacts teaching and help teachers institutionalize new pedagogy. The second of these claims asserts the following: "Almost all successful leaders draw on the same repertoire of basic leadership practices" (Leithwood et al., 2008, pp. 27-28).

Due to the scope of this study, which aimed to understand how leaders interpreted and implemented a specific aspect of a district strategic plan, the second of these claims is most relevant to the conceptual framework. According to Leithwood and his colleagues, the basic leadership practices that leaders draw upon include: 1.) Building vision and setting directions; 2.) Understanding and developing people; 3.) Redesigning the organization; 4.) Managing the teaching and learning program. Simplifying the nomenclature to four core leadership practices, Leithwood (2012) identifies setting directions, developing people, redesigning the organization, and improving the instructional program as fundamental to the daily work of a principal. These four core leadership practices represent how leaders intuit and interpret policy to improve teaching and learning through their school's commitment to organizational routines. The routines

under focus in this study, including School Innovation and Improvement Planning, Collaborative Learning Teams, and Professional Learning and Development, align with those four functions and forge the connection in this study between the processes of interest and research-based practice.

In this study, the routines that were examined within each school reside within the categories of setting directions (School Innovation and Improvement Planning), structuring the workplace (Collaborative Learning Teams), and developing people (Professional Learning and Development opportunities embedded within the school). This study evaluated the impact of the school leader, as well as the teacher, on the implementation of Project Based Learning. The ways in which these routines coupled with the implementation of Project Based Learning was identified.

Purpose of the Study

NCPS has not defined the ways principals and teacher leaders should seek to translate Portrait of a Graduate and, more specifically, Project Based Learning within their schools. Therefore, this capstone project studied a specific facet of the NCPS Strategic Plan, and narrowed in on how the NCPS Learning Model was understood and implemented by school leadership and teachers in order to adopt Project Based Learning that supports the tenets of Portrait of a Graduate. Findings from this research considered how the role of the principal can shape and support the implementation of innovative teaching practices, as well as how teacher participation in organizational routines, such as school innovation and improvement planning, collaborative teams, and school-embedded

professional learning and development, can foster schoolwide success in the adoption of new pedagogy.

Research Questions

1. How does school leadership, in three elementary schools, interpret recent district changes around Project-Based Learning (PBL)?

    a. In what ways, if any, are teacher leaders and principals attending to district changes around PBL?

    b. How does school leadership perceive the district as supporting or hindering their implementation of PBL?

2. In what ways do the following organizational routines and practices support the implementation of Project Based Learning in the three elementary schools?

    a. School innovation and improvement planning

    b. Collaborative learning teams

    c. School embedded professional learning and development opportunities

3. In what ways do external and internal conditions, such as district requirements and school demographics, influence leadership practices regarding the uptake of PBL?

Research Design

This research was conducted as a cross-case synthesis in which I explored and compared the organizational routines and practices that exist within three NCPS elementary schools. "In a case-based approach, the goal is to retain the integrity of the

entire case and…synthesize any within-case patterns across the cases" (Yin, 2018, p. 196). Since there is noticeable diversity within NCPS, this study triangulated practices that exist within schools of varying socioeconomic demographics: Owl Elementary School, an affluent school, Heron Ridge Elementary School, a school whereby 23% of its students receive free and reduced lunch, and Bluebird Elementary School, a Title I school with the highest incidence of students who receive free or reduced lunch (62%), thus indicating a high level of poverty. Moreover, each of these schools exhibited differing levels of implementation regarding PBL and can help to illustrate the triumphs and challenges of schools that are deeply embedded in planning and promoting PBL, as well as schools that are in the beginning stages of PBL implementation. Two of the selected schools reside in the same geographic area, and the third school was added to this project as it represents a lower socio-economic demographic. Additional documentation to support the selection of these schools included a review of each of their School Innovation and Improvement Plans (SIIP), the NCPS school profile page that includes the school's involvement in specialized programs, and informal discussions with colleagues regarding current PBL practices within each school.

As this was a multisite case study, selecting three diverse schools, and presenting each school with the same questions, provided an opportunity to highlight variances in each school's practices as they potentially related to Project Based Learning implementation. This helped "protect from inappropriate generalization" and allowed me to focus on the "specific beliefs, practices, and events that [are] observed or asked about,

and the actual contexts" of each school (Maxwell, 2013, p. 79). Each school was purposefully selected, and multiple data sources from each clarified the connections between perceived beliefs and practices and the routines and practices existing within each school. Data was collected through semi-structured interviews, a survey, and documentation analysis.

Specifically, data was obtained through interviews with central office leaders who are key stakeholders in the PBL implementation process, principals, as well a teacher survey. Follow-up focus groups for teachers in grades three and five provided further insights, as these grade levels are required to provide documentation of authentic learning tasks that replace formerly administered state assessments. These data sources helped to discover stakeholder knowledge, commitments, and beliefs surrounding PBL pedagogy and implementation. Similar questions were asked of each stakeholder group to help examine the degree of coherence between district and school level leadership. Interviews determined stakeholder knowledge about the district strategic plan, Spark, as well as the goals of its centerpiece, Portrait of a Graduate. Questions about PBL implementation, and its relevance to Spark, illuminated in what ways the strategic plan influences leadership and teacher practice.

Research Methods

To define leadership practices, as well as determine which organizational routines are aligned with Project Based Learning implementation, I designed several data protocols. Table 2 associates the protocols with the questions they address.

Table 2

Research Questions and Data Sources

Question	Data Source(s)
How does school leadership in three elementary schools interpret recent district changes around Project-Based Learning (PBL)? a.) In what ways, if any, are teacher leaders and principals attending to district changes around PBL? b.) How do school leadership perceive the district as supporting or hindering their implementation of PBL?	• Semi-Structured Interview (central office staff and principals) (Appendix B) • Survey (Teachers) (Appendix C) • Focus Groups (Teachers) (Appendix D)
In what ways do the following organizational routines and practices support the implementation of Project Based Learning in the elementary school? a.) School improvement planning b.) Collaborative learning teams c.) School embedded professional learning and development opportunities	• Structured Interviews • Survey/Focus Groups (Teachers) • Document analysis of SIIP, CLT or other planning notes
In what ways do external and internal conditions, such as district requirements and school demographics, influence leadership practices regarding the uptake of PBL?	• Semi-Structured Interview (principals) • Survey (Teachers)

The first question was designed to explore leadership beliefs and practices regarding the implementation of PBL in schools. Responses to the data protocols helped to discover the coherence between central office and schools, as well as the internal coherence between PBL and a school's organizational routines. The third question helped to discern the impact of internal and external conditions on decision-making and leadership practices.

Significance of Study

This study was significant in that NCPS was in its first full year of implementation of PBL across all grade levels, K-12. Furthermore, there are no previous studies of the implementation of NCPS's strategic plan to date. Understanding how school-based leadership and teachers translated the strategic plan and advanced its aims within the context and needs of their individual schools, informed the district as to how to best support school level implementation of new pedagogy (e.g., professional development, coaching, central office guidance). Potential wider contributions of this study include a greater understanding of local implementation of district policy.

Limitations of Study

Methodological limitations of this study included the small sample size of schools. The selected elementary schools were already known to be translating the district strategic plan in varied ways, which indicated that these schools may not have been representative of what was happening in the county, nor what may be feasible within all schools; it is already understood that at least one of these schools used considerable funding from its Parent Teacher Organization (PTO) to subsidize the costs of PBL professional development from the Buck Institute for Education (BIE). Another limitation is that this study relied heavily on self-reported data. In a qualitative research design trust becomes very important; trust that the information you receive is credible, and trust that it is objective (Rallis & Rossman, 2012). Self-reported data can be biased due to a variety of reasons including selective omission, attribution, or

exaggeration. Since much of the data cannot be independently verified, it was taken as fact, unless otherwise contradicted through multiple means of data collection.

Researcher limitations included barriers regarding access (e.g., people, meetings, documentation), and time constraints. This study provided an abbreviated look at the practices schools promoted to help teachers persist in delivering new pedagogy. Revisiting this study in later years of PBL implementation may be a good way to mitigate confirmation bias. Again, obtaining data from several sources assisted in establishing reliable findings.

Summary

This capstone project investigated how three elementary schools, within Nesting County, translated the district strategic plan in order to implement inquiry-based methods of instruction, such as Project Based Learning. The organizational routines and practices of each school were examined in order to understand how school-based leadership, including administration and teacher leaders, furthered instructional innovation within their schools. I believe that schools that evidence consistent routines and practices, including alignment of school plans with that of the district, time and structures for collaborative planning, as well as ongoing, school-embedded professional learning and development, yield a deeper level of success regarding PBL implementation. Administration, with input from teacher leaders, determine how to best bridge the aims of the district strategic plan with the needs of their schools.

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The following literature review examines the purpose of Project Based Learning in schools, policy implementation, organizational routines and practices, and an overview of principal leadership as it relates to the implementation of new pedagogy. Connections between each of these areas have been articulated and are important in understanding the conceptual framework. In subsequent sections of my capstone, the methodology and research design will be discussed, and the findings, recommendations, and action communication will be presented.

SECTION TWO: REVIEW OF LITERATURE

This capstone examined the uptake and implementation of Project Based Learning (PBL) within Nesting County Public Schools. By looking closely at the beliefs and actions of school level leadership, as well as analyzing schoolwide organizational routines and practices, it may be determined what mechanisms for change, if any, exist within a school that either forwards or constrains district policy.

Implementation is defined by Fixsen and his colleagues (2005) as "a specific set of activities designed to put into practice an activity or program of known dimensions" (p. 5). This includes "coordinated change at system, organization, program, and practice level" (p. vi). Whether schools are embarking on an innovative practice, or maintaining a current practice, organizational routines, specifically those aligned with developing the understanding and standardization of new teaching methods, are vital to successful implementation. Therefore, as this capstone discovered how policy is enacted in three elementary schools, it was important to evaluate literature that highlights organizational routines and practices that exist within a school's instructional infrastructure to forward implementation. Organizational routines that set the direction for the school and that provide opportunities for learning and reflection, can bridge coherence between district policy and the instructional program of the school, as well as provide the mechanisms for change within schools to forward district policy.

This literature review begins by introducing how implementation takes shape in schools, with an intentional focus on Project Based Learning implementation. Then, I

review the research regarding organizational routines, as routines can provide the structure needed to further instructional improvement in schools, as well as describe the ways in which district-school coherence manifests. Lastly, this review will examine the literature that is associated with principal leadership practices, and how these practices can further support implementation that can be leveraged for scaling-up district-wide reform in all schools.

To identify seminal literature for this review, I searched a variety of databases for journal articles, including Academic Search Complete, JSTOR (for more historical journal articles), and Web of Science. Web of Science linked articles of interest to other citations I found particularly useful. I utilized Google Scholar alerts to notify me of pertinent literature related to "principal leadership," "organizational routines in schools," "organizational coherence," and "central office routines and practices that support instructional innovation." Search terms that were used on Academic Search Complete included "project based learning," "organizational coherence," "principal leadership and instructional practice," "educational change," "organizational change," "organizational learning in schools," "implementation," "education policy implementation," "instructional innovation implementation," and "instructional infrastructure."

In addition to the databases, I also visited Researchgate.net to ensure I exhausted all current studies that related to my topic of interest. This site was helpful for finding current research related to Project Based Learning implementation.

The Complexities of Implementation

Over the years, researchers have debated the various components involved in successful implementation of education policy, and many studies have been completed surrounding federal, state, and local reform; yet no concise understanding of successful implementation exists. Some researchers, like Honig (2006), argue that implementation, and implementation success, are a "product of interactions between policies, people, and places—the demands specific policies place on implementers" (p. 2). Spillane, Reimer, and Reiser (2002) suggest that successful implementation is due to "whether, and in what ways, implementing agents come to understand their practice," thus placing an increased emphasis on the implementer versus the policy itself (p. 1). Whereas more recent implementation research does little to provide a definitive characterization of implementation, it does delineate that there is "broad agreement that implementation is a decidedly complex endeavor, more complex than the policies, programs, procedures, techniques, or technologies that are the subject of the implementation efforts" (Fixsen et al., 2005, p. 2).

Linking past explorations of policy to current investigations, it is important not to overlook influential texts such as Odden's (1991) *Education Policy Implementation* and Honig's (2006) *New Directions in Education Policy Implementation*. Current research indicates several parallels between studies completed in the 1970's, 80's, and 90's to those that have been completed in present times. Young and Lewis' (2015) findings continue to submit the following: those who implement policy help to shape it, policy

context impacts policy implementation, policies that are "one size fits all" are typically not successfully implemented across all constituencies, and variation of implementation is evident as implementers adapt policy to suit their situational context. These principles coincide with the problem of practice many schools face when enacting the expectations of a district strategic plan: How does leadership interpretation of new policy impact adoption of new pedagogy? What organizational routines and practices are in place to help meet the established expectations of adopting new pedagogy?

Young and Lewis (2015), through their compilation of research that "complemented, challenged, and complicated the insights of Honig (2006) and Odden (1991)," continue to expand our knowledge of the intricacies of implementation by drawing attention to the various theoretical frameworks used to explain implementation. Upon assembling several recent studies on implementation, they created an aggregate list of theoretical approaches including, but not limited to, diffusion of innovation, organizational learning, organizational change, organizational leadership, and institutional analysis. While these studies offer fresh perspectives surrounding implementation, using these theories to explain implementation behavior does not always address how to best scaffold implementation efforts of districts and schools.

One recent study addresses the scaffolding of implementation through the lens of organizational learning. It looks at the ways in which educators implement top-down policies, such as the implementation of Common Core Standards. Porter, Fusarelli, and Fusarelli (2015) examine implementation through the 4I Framework that defines four

main processes (intuiting, interpreting, integrating, and institutionalizing) through which learning occurs across three organizational levels: individual, group, and the organization. The process of integration, for example, is the "development of a shared understanding of new ideas and of how to put them into action. When new ways of thinking and acting are recurrent and have a sufficiently significant impact on organizational action, the changes become institutionalized" (Wiseman, 2007). Hence, institutionalization, also known as the final step in the change process (Fullan, 2007), emphasizes the need for structures and organizational routines.

Another perspective on scaffolding implementation of district policy at the school level is that of leadership practice. For example, Leithwood's 16 core leadership practices illuminates several key levers regarding instructional implementation. These practices underscore the work of district- and school-level leaders (Leithwood & Seashore Louis, 2012) and are categorized in four distinct areas: setting direction, developing people, redesigning the organization, and improving the instructional program (p. 57). Nearly all instructional leadership practices of principals align with these core practices, and as district policies and practices are identified by school leadership, they are furthered by organizational routines at the school level that allow teachers to identify what provisions and planning need to be in place to transition from policy to practice.

Figure 2

Leadership Influences on Student Learning
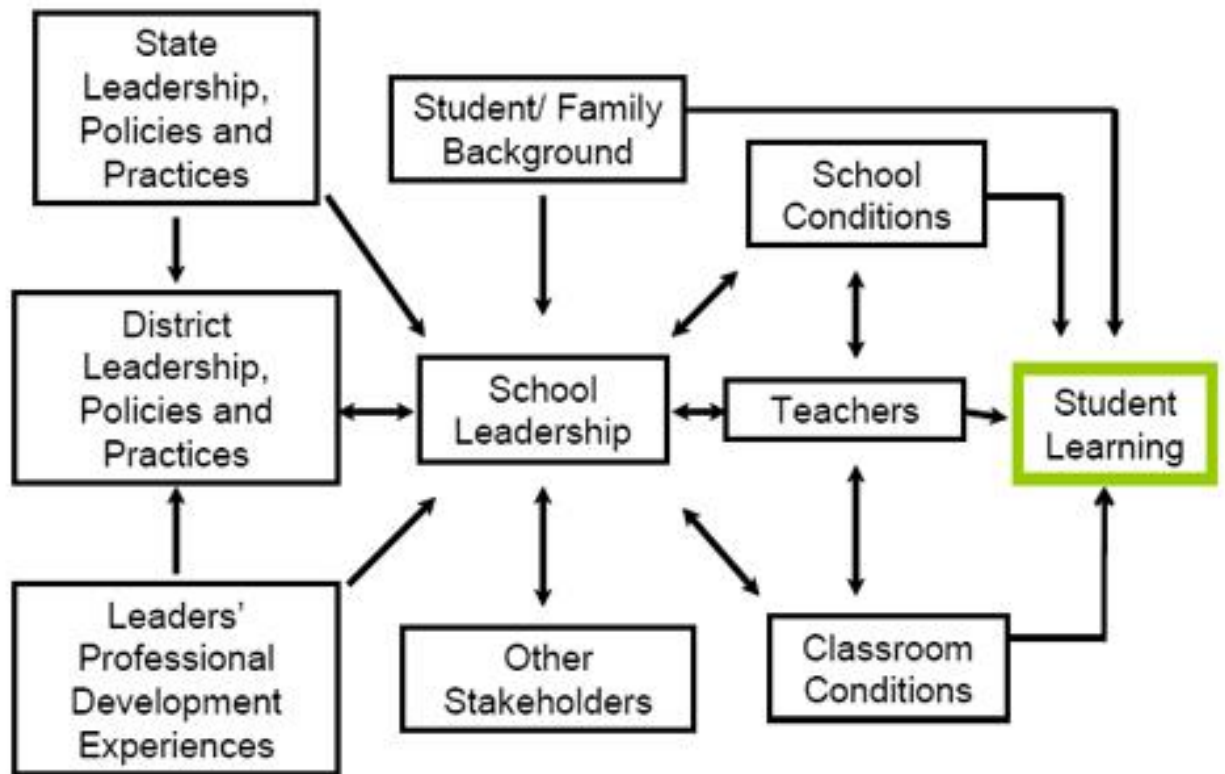
Note. Reprinted from *Leadership Influences on Student Learning*, Leithwood, et al., 2010, p.14. Copyright 2010 by the University of Minnesota. Reprinted with permission.

According to Fullan, Hord, and Von Frank (2014), the transition from policy to practice, which leads to deeper, more rigorous learning experiences for all students, begins with the creation of a vision that portrays the learning outcomes associated with the implementation of new pedagogy. Fullan and his colleagues recommend that the district vision be clearly communicated to central office and school leadership, teachers, and other facilitators who are expected to carry out the change, and that this information

be delivered reliably so that every audience receives the same message. Furthermore, reminders concerning the expectations for the vision, the rationale for the vision, as well as district-wide progress regarding the vision need to be presented often, so that all parties continue to support the change. Regardless, merely articulating a district vision does not yield implementation, and many challenges exist when proposing instructional innovation in schools. Engaging in ongoing and substantive ways to communicate with schools regarding districts aims, and aiding principals in determining ways to develop the structures that support the time, resources, and routines necessary to adopt new instructional practices is a vital part of the change process and a catalyst for innovation implementation.

My study identified organizational routines and posed a nuanced look at the internal, school-based processes within schools that helped leadership move past intuition, interpretation, and integration, and into how to institutionalize new policy with the needs of their school.

While many other factors influenced the uptake of new pedagogy, this study maintained that school-based leadership, as well as organizational routines and practices at the school level, most significantly impacted the way in which students learn. "Teachers and principals agree that the most instructionally helpful specific leadership practices are: focusing the school on goals and expectations for student achievement, keeping track of teachers' professional development needs, and creating structures and opportunities to collaborate" (Leithwood & Seashore Louis, 2012, p. 57).

An Overview of Project Based Learning Implementation

This study of implementation focused on Project Based Learning, and as such, it is important to define how this method for instruction is operationalized in schools. First, it is important to understand what Project Based Learning is and how it differs from more traditional methods of instruction. Subsequently, it is important to identify how some schools are transitioning to Project Based Learning. As the research for PBL implementation is scarce, this study will address the gap between knowing what PBL is and knowing how to support its uptake in schools.

Project Based Learning in Practice

To fully understand the nuances involved in PBL implementation, it is important to define the scope of what authentic PBL is and how it manifests in a school and classroom. Thomas (2000), who completed a review of research on PBL, advocates that there are five key components that comprise PBL: projects are central to the curriculum, organized around a driving question, focused on constructive investigation and knowledge building, student driven, and nurture real-world problem-solving. Similarly, according to Blumenfeld, Soloway, Marx, Krajcik, Guzdial, and Palincsar (1991), PBL is a constructivist approach to teaching and learning, in which students engage in authentic problem solving. For the purposes of this capstone, I adopted a third definition that combines aspects of each of these definitions. The Buck Institute for Education characterizes PBL as: "…a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an engaging and

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complex question, problem, or challenge" ("What is PBL? | Project Based Learning | BIE," 2016.) The essentials that are required of authentic PBL, as it relates to this study, are the following:

- a challenging problem or question posed to students in what is known as a driving question
- sustained inquiry including research and resource collection
- relevance to the real world and to students' interests
- student voice and choice
- reflection
- critique
- opportunity to share what was learned through a public presentation

Shifting from more traditional teaching and learning methods to a formalized inquiry approach increases implementation challenges. As this shift accelerates, the demands it places on instructional resources and systemic supports, such as curriculum frameworks, assessment systems, teacher evaluation, and staff development need to be addressed. Fostering alignment between each of these elements and district policy can help to achieve instructional program coherence. This is necessary in order to transition from current methods to those that support deeper learning (Fullan & Quinn, 2015), such as the deeper learning outcomes associated with PBL.

Preparing for change

Looking closely at instructional improvement and how school leaders and teachers organize for change is a critical aspect of implementation. Hopkins and Spillane (2015) sought to conceptualize the structures and resources that help school leaders and teachers organize their "efforts to provide, maintain, and improve instruction" (Hopkins & Spillane, 2015, p. 2; Cohen & Spillane, 1992; Cohen et al., 2013). Terming the phrase, *Instructional Guidance Infrastructure* (IGI), these researchers included the following exemplars for routines and practices: "content standards, curricular materials, student assessments, formal system and organizational positions (e.g., instructional coaches), and organizational routines (e.g., grade level meetings) that…form a system intended, by design or default, to guide and monitor instruction within local school systems" (Cohen et al., 2013; Spillane et al., 2011, p. 2). These routines have great influence over implementation in that they can affect alignment and coherence, as they help teachers coordinate ideas about "what to teach and how to teach," and this can, in turn, "affect the resources and learning opportunities that are available to facilitate instructional improvement and maintain standards of instructional practice" (Hopkins & Spillane, 2015, p. 11; Cohen et al., 2013).

School improvement begets the uptake of new pedagogy, instructional techniques, and redistribution of resources—human and material—and these are all part of the process of implementation. In his examination of school improvement, Bryk (2010) surmised five essential supports for school improvement that not only include

instructional guidance, but also emphasize that the organization and operations of a school greatly impact the instruction in classrooms. These five supports, encompassing the findings of a fifteen year longitudinal study that began in 1990, were a direct result of the efforts of the Consortium on Chicago School Research who aimed to "study of the internal workings and external community conditions that distinguished improving elementary schools from those that failed to improve" (p. 23). These supports embrace a coherent instructional guidance system that formalizes the "what and how of instruction," professional capacity that details the professional development that exists to support new initiatives, strong parent-community-school ties that reinforce that parental participation in schools is tantamount to student motivation, a student-centered learning climate that features accountability and a safe and comfortable working environment, and, lastly, the premise that leadership drives change through influential and shared decision making (p.23-24).

What is tantamount to Hopkins, Spillane, and Bryk's intentions is that full engagement in school improvement, and, likewise, adoption of new pedagogy, relies heavily on the efforts of leadership to create collaborative working environments that are congruent with capacity-building learning opportunities that can support and sustain change in schools over time.

This research all points to the significance organizational routines and practices have on the implementation of new policy. Routines not only influence the enactment of policy at the district and school level, but also indicate the performance drivers that need

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to be valued in order to focus direction (School Innovation and Improvement Planning),

cultivate collaboration (Collaborative Learning Teams), deepen learning (Professional

Learning and Development), and sustain accountability (Fullan & Quinn, 2015).

Organizational Routines

Since Stene, in 1940, introduced the concept of routines to the study of

administration, routines have been described in various ways, but most importantly, to

facilitate coordination in an organization (D'Adderio et al., 2013). While some routines

can impede implementation, especially when perceived as conflicting with the existing

culture of a school (Spillane et al., 2011; Coburn, 2004), they can also behave as

"repetitive, recognizable patterns of interdependent actions, carried out by multiple

actors" (Feldman & Pentland, 2003, p. 10) whose function in systems and schools remain

to maintain or change behavior (Conley & Enomoto, 2005).

Nelson and Winter (1982) suggested that by analyzing routines, one could

understand the behavior and change agents in an organization. Their seminal research led

to more recent studies that focus closely on how that work is organized and carried out,

indicating, to a large extent, that by analyzing an organization's routines, one can

"capture systematic and endogenous (rather than exogenous or one-off) performance

drivers, and what can be considered typical for an organization" (Becker & Zirpoli, 2008,

p. 129). This is a notable finding because of the importance this places on routines when

an organization is attempting to implement systemic change.

While sustaining longstanding routines can maintain the status quo (Conley & Enomoto, 2005; Sherer & Spillane, 2011), implementing new routines can create a cultural shift in an organization (Sherer & Spillane, 2011). Sherer and Spillane looked closely at an individual routine, the Five Week Assessment Routine, which linked directly to language arts, to see how this procedure stabilized the work of the school over the course of four years. This routine "structured daily practice, focusing classroom instruction on formative assessment and focusing interactions among staff on teaching and student learning" (Sherer & Spillane, 2011, p. 629). The researchers examined the connections between routines and practices, clarifying that practice "focuses on action rather than exclusively on structure, states, and roles" (Sherer & Spillane, 2011). For instance, beyond establishing grade level teams and participating in faculty meetings, administration walked the halls, visited classrooms, and conversed with teachers (Sherer & Spillane, 2011). They concluded that as the organizational routine of the Five Week Assessment became "institutionalized over time, it transformed teacher practice" (Sherer & Spillane, 2011, p. 626). This demonstrates the importance of establishing routines that focus on planning, acting, and doing, as these types of routines give all stakeholders a purpose, and imply a connectedness among individuals who are working together in support of a common goal. Organizational routines, such as the Five Week Assessment Routine, help to establish meaningful relationships between all staff in a school. To this end, routines that persist in engaging all teachers and administration in a shared vision

may have a greater impact on the successful implementation of PoG and inquiry- and project-based learning opportunities.

Looking closely at the instructional core of teaching, Spillane and his colleagues examined how changes in state and district level policy is coupled with introducing new organizational routines (Spillane et al., 2011). Coupling signifies that the interdependent elements that exist between organizations and routines are correlated to one another, and that organizations and routines can either be tightly coupled, meaning that the school is highly responsive to new policy, or loosely coupled, meaning that the school is somewhat responsive, perhaps exercising more autonomy. Conversely, the school can also be decoupled entirely, thus exercising a lack of responsiveness altogether towards new policy endeavors (Orton & Weick, 1990; Spillane et al., 2011). Decoupling can occur when the policies or practices of the district interfere with policies or practices already in existence, and especially when the new policy is perceived as a threat to the organizational culture of the school (DiPaola & Tshannen-Moran, 2005). In a school system where monitoring and compliance is commonplace, decoupling occurs less frequently and can be easily prevented when central office maintains a close, collaborative relationship with schools, focusing on joint work. "Central office staff could work alongside principals…and view such improvements as their own as well as the principals' responsibility" (Honig, 2011, p. 739).

Similarly, selective coupling corresponds to schools concentrating their efforts on implementing some reforms and not others, and, to an extent, focusing efforts on specific

subject areas (Spillane et al., 2011). This can impact the fidelity of teaching practices evidenced across schools, grade levels, and content areas. To sustain effective coupling, principals can exercise authority over what types of routines and practices take place within schools, among teams of teachers, and as an entire staff. School leaders typically use data, garnered from routines like the Five Week Assessment Routine, to "make classroom instruction more responsive" (Spillane et al., 2011, p. 608). Spillane and his colleagues (2011) found that leaders used these routines to frame and focus discussions and to set and maintain direction for instructional improvement. As organizational routines increased the transparency of the instructional core, "standardization of the instructional program enabled systematic monitoring of instruction by providing a common metric that school leaders could use to compare across classrooms" (Spillane et al., 2011, p. 610).

The way in which the resources are shared, systems are created, and structures are organized are directly linked to the routines and practices of the organization. As a key component of everyday life, they promote change or preserve the status quo (Sherer & Spillane, 2011), and can help to further characterize the roles all stakeholders play in supporting innovation in schools. As principals and teacher leaders are primarily responsible for the consistent implementation of routines that support new pedagogy, it is important to understand the ways in which their roles are defined and can effect change in schools.

Principal Leadership

Principal leadership can become an integral agent of change within schools during the implementation process by helping to frame the direction the school will proceed as it begins to utilize new instructional practices. This type of leadership is known as instructional leadership, and it focuses the work of the principal around the improvement of teaching and learning (Hallinger, 2005). Instructional leadership is important when managing the demands of a district strategic vision, and often requires the principal to take policies and shape them to the particular needs of their schools, with decisions reflecting personal leadership beliefs and practices (Seashore Louis & Robinson, 2012). Principal leadership can lead to coherence between districts and schools, through the coordination of teaching practices at the school level with district policy (Seashore Louis & Robinson, 2012), and "depends on…the extent to which external demands fit a particular school's culture, political interests, aspirations, conceptions of professionalism and on-going operations" (Honig & Hatch, 2004, p. 18).

Mitchell and Castle (2005) studied elementary school principals' understanding and enactment of instructional leadership. While curriculum expertise, formal delivery of professional development, and informal culture building outlined how principals conceptualized instructional leadership, enactment was shaped by three additional categories: personal style, degree of coherence in agendas and initiatives, and availability of enabling structures (p. 409). The latter means that principals need to examine the

mechanisms they create for teachers to collaborate that support instruction and student learning, such as organizational routines (Spillane, 2015).

Mitchell and Castle's findings also indicate nuances in how principals perceive their role in shaping instructional practices, since many principals equated instructional leadership with "curriculum expert," and some leaders did not see themselves as experts, being so many years removed from the classroom (p. 416). Further compounding instructional leadership were the tensions that were heightened by "competing and opposing demands" (p. 417). These included unpredictable schedules, the push-and-pull between facilitative and directive leadership, and challenges associated with building consensus versus generating compliance (Mitchell & Castle, 2005). Those unfamiliar with the demands of being a principal need to know that these challenges complicate the autonomy and authority principals desire when making and following-through on important decisions; they hinder the balanced autonomy principals wish to demonstrate when considering how to pair the needs of their school with the goals of the district.

One way to operationalize change in schools is to leverage the leadership of instructional support staff and teacher leaders. The principal can do this by soliciting input from staff by "engaging staff in the ongoing discussion of the most promising practices for improving student learning, and providing teachers the time, resources, materials and support to help them succeed at what they are being asked to do" (DuFour & Marzano, 2011, pp. 55-56). This idea of shared, or distributed leadership, makes the implementation of new pedagogy an entire organization initiative, rather than an

administrative endeavor, and creates clarity with the leading and managing of organizational routines (Spillane & Coldren, 2011). These routines include the orchestration of data-dialogues during School Improvement Planning, the facilitation of CLTs, and the creation and execution of professional learning opportunities.

Teacher Leadership

Michael Fullan (2007) suggests that there are three phases for managing change within a school: initiation, implementation, and institutionalization. If you consider the agents for change within a school, it would stand to reason that teachers are instrumental in this process. Teachers are responsible for the initiation of new pedagogy, the implementation of these ideas, and, subsequently, the sustainability of these ideas within their daily practice. Although teachers may not have autonomy about the ways in which they teach in their classrooms, they, for better or worse, can exercise control over the fidelity with which they adopt new pedagogy into their practice. Therefore, principals need to consider the ways in which they allow teachers to support implementation efforts, through the provision of "constructive and supportive feedback and opportunities for continuous professional learning for educators to refine their practices and improve results" (Learning Forward, "Managing Change"). This study situated teacher leadership within the context of the teacher's role in operationalizing routines in schools; e.g., through their presence and contributions regarding school improvement planning, their facilitation of, and participation in planning meetings, as well as their continued growth as educators partaking in professional learning and development opportunities.

Conclusion

Implementation of new pedagogy, such as Project Based Learning, is a complicated enterprise. Navigating successful implementation requires consideration of the beliefs and actions of leadership at the school and district level, as well as knowledge of what supports are maintained at the school level that aim to modify instructional practice. This means that whether schools are embarking on an innovative practice, or simply maintaining practices, organizational routines, specifically those aligned with developing the understanding and standardization of new teaching methods, are vital to the uptake of Project Based Learning.

Implementation of innovation requires substantive teacher professional development to support practices such as Project Based Learning, as professional development builds capacity and can strengthen teacher practice (Fullan, 2009). Such ongoing professional learning, coupled with the necessary pedagogical frameworks and materials, assessment that requires a demonstration of mastery (e.g., Performance Based Assessment), opportunities for collaboration during scheduled team planning times, and an investment in reflection and evaluation, can help schools transcend mere exploration of PBL in order to reach the desired outcome of full implementation and sustainability of inquiry-based methods of instruction. According to Fixsen and his colleagues (2005), implementation is most successful when "organizations provide the infrastructure necessary for timely training, skillful supervision and coaching, and regular process and outcome evaluations" (p. vi).

Integral to successful implementation of new pedagogy are the actions and practices of school-based leadership. These practices may or may not be aligned with the intentions of central office and can impact instructional program coherence within schools across the district. Principals use a variety of cognitive processes, and are also informed by their beliefs, when making decisions that support their schools. In this respect, school-based leadership makes decision that bridge, or buffer district aims, thus impacting implementation. Providing principals with autonomy to guide their schools in a way that prioritizes district intentions, and yet still allows leadership to meet the needs of their school, can encourage schools to adopt new teaching practices. Still, a concern remains that high-stakes testing, and other demands represented by conflicting policies and mandates, may lead principals to determine that inquiry-based pedagogy is not a good match for their schools. Leadership that promotes risk-taking is pivotal in ensuring schools push past traditional methods of instruction. My capstone examined this presumption.

The next section of my capstone explains the conceptual framework and methodology that furthered this study. Looking closely at how school-based leadership interprets district policy through the creation or maintenance of organizational routines and practices that manifest within a school's instructional infrastructure may help educators better understand how to structure implementation of new pedagogy.

SECTION THREE: CONEPTUAL FRAMEWORK AND METHODOLOGY

Conceptual Framework

Implementation of innovation is a challenging endeavor for any school, particularly for those that are mired in more traditional methods of instruction. Often, when a new district policy is enacted, there is very little guidance from central office as to how to foster change and to support new teaching demands. School leadership may face impediments to implementation when making decisions that promote the current needs of their school while also honoring the interests of the district (Spillane, 1998, 2000; Spillane & Thompson, 1997; Stein & Nelson, 2003). How much a district policy is bridged by each school, and in what ways, can become contingent on leadership beliefs and practices, organizational routines, and teacher efficacy. Adding to the empirical research that relates educational change with organizational learning and capacity building (Higgins et al., 2012), this study explored how district interests take shape as a result of how leaders, intuit, interpret, integrate, and institutionalize new policy (Crossan et al., 1999). By analyzing the relationship between the processes associated with organizational learning and the presence of routines, district leadership can gain a better understanding as to how the uptake of new pedagogy is disseminated schoolwide.

Organizational learning (OL), as it applies to schools, emphasizes a continuous dynamic where individuals learn from one another in order to build the collective capacity of the school (Higgins et al., 2012). While much literature regarding organizational learning focuses on teacher willingness to take risks and teacher efficacy,

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this study sought to extend empirical research by exploring the role that leadership and organizational routines play in promoting innovative teaching practices, including the actions that support the operationalization of Project Based Learning. Examination of principal beliefs and practices helped to highlight how schools attend to district initiatives around PBL.

As previously articulated, Leithwood (2012) identified from existing research four core leadership practices: setting directions, developing people, managing the instructional program, and structuring the workplace. These core leadership practices directly associate with routines that are prominent in many schools, such as school innovation and improvement planning, collaborative learning teams, and school-embedded professional development. Focusing on how leaders attend to and manage change through these routines provides insight into how these efforts "implement, institutionalize, and sustain planned change" (Sherer & Spillane, 2011).

Setting Directions

Setting directions focuses on the principal's role in working with staff to create clear, attainable goals that support student academic progress. These goals are typically aligned with the mission and vision of the school. The principal is responsible for directing the development and communication of these goals to all stakeholders. This process varies from school to school, and for the purposes of this study, was classified as school innovation and improvement planning.

In NCPS, each school is required to submit, and revisit, their School Innovation and Improvement Plan three times a year. A thorough examination of this living document, as well as the practices each school follows to engage in reflection and progress monitoring of the SIIP, elicited understandings as to how this document aligns with teacher practices and expectations for all learners, particularly Project Based Learning experiences.

Developing People

Opportunities to learn that relate to understanding the principles of Project Based Learning, specifically those that are school-embedded, continuous, reinforce networking, collaboration, and that include coaching or centralized school support were surveyed through this study. Additionally, traditional means of professional development, such as workshops, courses, and conferences were analyzed. How closely these professional learning and development opportunities align with district aims, and the extent to which they promote teacher efficacy in the use of PBL in their classrooms, provided an understanding of what types of learning experiences lead to implementation of new pedagogy.

Structuring the Workplace

How teacher leaders and school teams participate in collaborative practices was examined. Collaborative Learning Teams (CLTs) are teams of teachers "engaging in an ongoing cycle of questions that promote deep team learning" (DuFour, 2004). However, there is an assumption that the process of inquiry associated with the CLT cycle is not

consistent from school to school. Subsequently, collaboration during CLTs may hinder or advance a school's implementation of Project Based Learning as teams of teachers may selectively use this time to advance PBL. This study addressed this assumption and determined what effective practices, if any, school teams are engaging in to develop their expertise with PBL.

The visual representation of the conceptual framework (Figure 2) illustrates how four processes (intuiting, interpreting, integrating, and institutionalizing) impact the individual, group, and organization. For the purposes of this study, Crossan, Lane, and White's (1999) definition was applied, and it is as follows:

- Intuiting: This is an individual behavior. Intuiting is a "preconscious recognition of the pattern and/or possibilities inherent in a personal stream of experience" (Crossan et al, 1999, p. 525; Weick, 1995).

- Interpreting: "The explaining, through words and/or actions, of an insight or idea to oneself and others" (p. 525).

- Integrating: "process of developing shared understanding among individuals and of taking coordinated action through mutual adjustment" (p. 525). If the coordinated action is recurrent, it was institutionalized.

- Institutionalizing: "process of ensuring routinized actions occur…tasks are defined, actions are specified, and organizational mechanisms put in place to ensure that certain actions occur." Institutionalizing includes "systems, structures, procedures, and strategy" (p. 525).

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The three routines in the center depict how schools, as learning organizations, encourage growth, with the focus of this framework illustrating that iterative routines work together to foster collective capacity to drive instructional change in schools.

Figure 3

Conceptual Framework
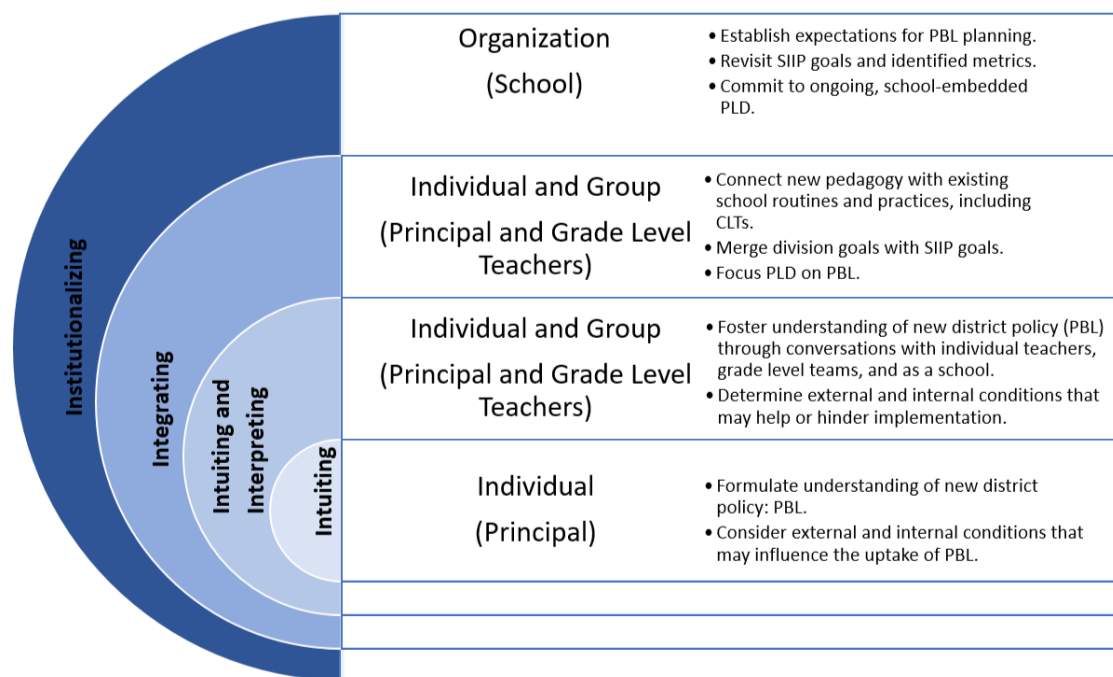
Methods

As previously mentioned, this capstone project studied the implementation of Project Based Learning, which supports NCPS's refined Learning Model; specifically, I sought to understand how district policy is understood and implemented by school leadership and teachers in order to adopt Project Based Learning that supports the tenets of Portrait of a Graduate. Here I describe my selected research methods, as well as the

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rationale for their selection. In addition, I include a description of the schools and participants involved in this study, how they were selected, as well as any researcher bias or ethical concerns. An explanation of the data collection tools, how the data was collected and analyzed, and potential risks to the validity of the data is discussed.

Research Design

This study was a multisite case study of three elementary schools and their implementation of Project Based Learning. Data was analyzed and interpreted at the individual case level, as well as across cases, in order to highlight meaningful similarities, differences, and school-specific experiences. Qualitative data, including semi-structured interviews with central office and school-based leaders who are integral to the implementation process (e.g., Assistant Superintendents, Project Based Learning Resource Specialists, and Principals), and a review of documents (e.g., School Innovation and Improvement Plans of each school), shed light on implementation decision-making and specific strategies that are being used to implement Project Based Learning pedagogy. Teachers participated in a brief survey that was followed-up through focus groups for teachers in grades three and five, in which questions collectively addressed how leadership and organizational routines have impacted the implementation process. Additionally, reviewing the School Innovation and Improvement Plan, as well as gaining an understanding of the Collaborative Learning Team (CLT cycle) and Professional Learning and Development opportunities that are embedded within the school, helped to

make inferences about the extent to which the school behaved as a learning organization, as well as the coherence between the actions of central office and the work of schools.

Research Questions

The following questions and sub-questions guided my research:

1. How does school leadership in three elementary schools interpret recent district changes around Project-Based Learning (PBL)?

    a. In what ways, if any, are teacher leaders and principals attending to district changes around PBL?

    b. How does school leadership perceive the district as supporting or hindering their implementation of PBL?

2. In what ways do the following organizational routines and practices support the implementation of Project Based Learning in three elementary schools?

    a. School improvement planning

    b. Collaborative learning teams

    c. School embedded professional learning and development opportunities

3. In what ways do external and internal conditions, such as district requirements and school demographics, influence leadership practices regarding the uptake of PBL?

Each of these questions served a distinct purpose, and each question addressed a facet of organizational learning theory. The first question, literally, speaks to interpretation and the individual leader's intuiting of the expectations of implementing Project Based

Learning within the school. The second question refers to the ways in which the school institutionalizes PBL through organizational routines. Lastly, the third question considers all four facets of organizational learning, including the leadership beliefs (intuiting and interpreting) and practices (integrating and institutionalizing) and how they present in schools with varied demographics.

Site Selection and Participants

This study took place in a large suburban school district in the Mid-Atlantic east coast region of the United States. Two of the three schools that were pre-selected for this study reside in one area, in close proximity to one another and central in terms of Nesting County's boundaries, while the other school is on the edge of the county limits. Each school represents a different demographic, with the first school evidencing a predominately affluent community, the second school, a predominately middle-class community, and the third school is characterized by a high incidence of poverty. These schools were at different stages regarding Project Based Learning implementation, and each is part of a cluster of schools in the county associated with advancing alternative, performance-based assessment that promotes the acquisition of Portrait of a Graduate attributes and skills.

Data Sources

A variety of data sources were used to help determine the internal coherence of the implementation of Project Based Learning within schools, as well as the coherence between central office and schools. Data were gathered in several ways: semi-structured

interviews with central office personnel (Instructional Superintendent and PBL Specialists) and principals, a survey for all instructional staff, as well as focus groups for teachers in Grades three and five. In addition, a document analysis included each site's School Innovation and Improvement Plan, as well as related PBL planning documentation and processes. While all teachers were asked to complete the teacher survey, at each school the third and fifth grade teachers participated in a follow-up focus group to provide additional information regarding their school's PBL implementation process. The third and fifth grade teams were selected as it is known that these grades, at each school, are participating fully in the PBL implementation process, and are coordinating PBL learning experiences for their students in lieu of standardized assessments in science and social studies. A review of the School Innovation and Improvement Plan, as well as documentation from third and fifth grade planning meetings that support the creation of PBL learning experiences, served to triangulate interview and survey responses.

Survey Design

An electronic survey was distributed via e-mail to expedite the completion of the survey. Questions were created specifically to help determine the planning structures and professional learning that are evidenced within each school. Categories of these questions emphasized organizational routines that are included in the conceptual framework within the stages of implementation. These include:

- Planning for Project Based Learning

- Professional Learning and Development (PLD)

- School Innovation and Improvement Planning

- Reflection and Evaluation

The questions for the survey were created by the researcher, as no other study was found to have previously focused on PBL implementation from the perspective of school leadership and organizational routines and practices. The questions focused on teacher knowledge of district aims, as well as the informal and formal organizational routines that exist within a school that could further PBL implementation. Survey participation resulted in a 78% (80/103) participation rate. The responses provided an entry point to understand teacher awareness of organizational routines, practices, and supports within their building that aligned with PBL implementation.

Semi-Structured Interviews

Pre-selected, consenting central office leadership (Assistant Superintendent for Curriculum and Instruction, the Coordinator for Curriculum Integration and Management, and two PBL Resource Specialists), germane to the implementation of PBL in schools, were interviewed to gauge their role and responsibility in assisting schools in their implementation of PBL. The principals of each of the three schools also participated in semi-structured interviews. Their seven responses provided a contrast to the teacher perspectives that exist within their schools. These interviews were recorded and transcribed, with permission, to ensure the fidelity of responses included in the published research. Any identifiable information was redacted from the final publication.

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Documentary Analysis

School Innovation and Improvement Plans were shared by principals to determine if goals that elevated PBL were developed. Two years of SIIP plans were reviewed beginning with the first year of implementation of PBL. No additional documentation was considered since there were no specific planning documents used at any school site that were connected to PBL.

Focus Groups

Teachers in grades three and five participated in focus groups to further examine their perceptions of school and central office leadership, as well as how organizational routines and practices may have influenced their adoption of PBL. A total of 34 teachers in three schools, including general education teachers, advanced academic teachers, special education teachers, and English Learner teachers participateds in the study. The roles of the participants varied between grade levels and schools as the needs of students across grade levels and buildings were diverse.

Data Collection Process

Interview and survey data were collected in the spring of 2019, between February and March, in accordance with Institutional Review Board (IRB) approval. Since each of the three schools already agreed to be a part of this study, an e-mail was sent in early spring addressing the purpose of this study and what it entailed. Documentation analysis was conducted at the same time the interviews and focus groups occurred. Table 3

provides an overview of the data collection methods and timeline associated with this research.

Table 3

Data Collection Methods

Data Collection Activities	Participant Group	Time for Each Participant to Take Part in this Activity	Data Collection Window
Semi-structured interview	Central Office Staff and School Principals (n=7)	Less than an hour	2/4/2019- 2/15/2019
Online Survey	Teachers (n=80)	10 minutes	2/18/2019- 3/1/2019
Focus Groups	Grades 3 & 5 Teachers (n=34)	1 hour	3/4/2019- 3/15/2019

Data Analysis

Semi-Structured Interviews

Each interview was reviewed in its entirety and patterns in responses helped to develop themes. Thematic analysis is associated with inductive reasoning which helps to make meaning of the specific contexts provided by the responses of each of the participants (Maxwell, 2013). Interpreting participant responses through thematic analysis led to a comparison between the perspectives of central office leadership, specialists, and principals regarding their interpretation of district policy, their role, and

practices associated with PBL implementation. Due to the small sample size of central office staff and principals, I was able to code each interview and focus group, developing themes which helped me draw conclusions between the leadership practices and organizational routines of schools across varying demographics.

Surveys

Survey data, which preceded data obtained from the focus groups, was used to explore what organizational routines and practices, if any, were utilized to foster PBL implementation. One hundred three surveys were distributed. Eighty responses were received, for a response rate of 78%. Responses from teachers at each school were obtained, and data that was analyzed using descriptive statistics enabled a comparison between schools. This data also clarified and validated the responses of participants on the survey with the responses that were provided by teachers during the focus groups. Since a larger sample size of teachers were able to access and participate in the online survey, an understanding of teacher awareness of the practices that contributed to schoolwide implementation of PBL was made known. However, due to the constraints a survey presents, including a lack of description associated with each answer, focus groups were necessary to delve more deeply into the intricacies of grade level practices. Thirty-four teachers participated in the focus groups.

Focus Groups

Thematic analysis was used to explain teacher responses within and across schools. A review of focus group transcripts led to the development of codes, and

subsequently, categories and themes were developed by extracting specific examples of each from teacher narratives. These examples were weaved throughout the case studies to tell the story of each school.

Cross-Case Synthesis

Completing a multi-site case study provided an opportunity to compare findings between schools. "In a case-based approach, the goal is to retain the integrity of the entire case and then to compare or synthesize any within-case patterns across the cases" (Yin, 2018, p. 196). This approach resulted in an analysis of the organizational routines and leadership practices within all schools that were used to forward PBL, as well as the perception of leadership roles and responsibilities at each school and their relationship to the implementation of new pedagogy.

Research Ethics

This research adhered to all ethical considerations required by the Institutional Review Board of the University of Virginia, as well as that of Nesting County Public Schools. Data were obtained through informed consent, and all identifiable information from surveys, interviews, and focus groups was removed from the final publication. Several principals and teachers who were not part of this study reviewed the question items to vet and prevent any confusing or leading questions.

Researcher Bias

Regarding potential researcher bias in this capstone, I continue to be deeply entrenched in the county's work of operationalizing Project Based Learning in schools,

including in the elementary, middle, and high schools. I was tasked, during the 2015-2016 calendar year, with creating an instructional conference that helped forward the understanding and implementation of Project Based Learning in 26 NCPS schools. This work has fueled my passion for advancing my knowledge of how school leadership can leverage organizational principles and routines to encourage schools to adopt new pedagogy. It is important to note that none of the three schools that were involved in this study attended this instructional conference.

To control for researcher bias throughout data collection and analysis, I selected schools that are both inside and outside of the region of NCPS where I serve as an elementary school principal. As there are several regions within Nesting County, this suggests that I did not select sites due to convenience; rather these sites are exemplars of deep engagement in the work of implementing Project Based Learning. For ethical reasons, all schools were outside of my school's immediate area, which means I do not work directly with any one of the selected schools. Questions for the semi-structured interviews, survey, and focus groups were carefully evaluated and prepared in advance. Having a non-respondent group review these data sources has provided much valuable feedback. Follow-up focus groups with third and fifth grade teachers from each school helped to confirm the accuracy of the respondents' survey responses, as well as provided a comparison among the three schools.

Summary

This capstone project investigated how three elementary schools within NCPS County translated the district strategic plan in order to implement Project Based Learning. The organizational routines and practices of each school were identified and examined to understand how school-based leadership, including administration and teacher leaders, furthered instructional innovation within their schools.

Nesting County Public Schools determined that by the 2017-2018 school year, all schools should be implementing PBL learning opportunities pre-K-12. This study provides the steps individual schools actualized to promote this vision within their organization and across classrooms.

SECTION FOUR: POSITION PAPER

The following is a case-by-case analysis of three schools and their translation of a district aim, Project-Based Learning (PBL). In this section of my capstone, I will present and analyze the data collected during the research process, discuss the findings, acknowledge the limitations of my study, and highlight the practical implications of this research for use in schools. Underscoring my research is the assumption that schools rely on a combination of routines and practices, such as school improvement planning, Collaborative Learning Teams (CLT), and school-embedded professional learning and development to scaffold their implementation efforts. Knowledge of how these routines and practices are used may assist school leaders in understanding how to systematize the introduction of any new district aim, thus leading to deeper levels of implementation.

Findings

Using three sources of data collection, described in the previous methodology section, I interviewed central office leadership and principals, surveyed teachers, and followed-up with focus groups in three school sites within one district. My research questions examined principal and teacher leadership interpretation of new policy and, more specifically, the ways Project Based Learning is implemented within schools through the use of organizational routines and practices. In addition, I explored whether internal and external conditions influence leadership actions regarding implementation. My questions allowed me to draw conclusions about instructional coherence between central office and schools, as well as instructional coherence within schools.

Selecting schools of varying demographics helped me to determine in what ways, if any, school leadership and decision-making regarding implementation is consistent across schools. Likewise, focusing on the same organizational routines and practices, including School Innovation and Improvement Planning, Collaborative Team Planning, and school-embedded Professional Learning and Development, provided insights into the prioritization and use of these routines to support the implementation of new pedagogy.

My results reflecting principal and teacher leadership beliefs and practices will be discussed later in this section.

The Central Office Perspective

Findings resulting from interviews with central office leadership and support staff suggest that instructional coherence, meaning the coordination of program expectations between central office and schools, is critical to successful implementation (Newmann et al., 2001). This sentiment aligns with responses from Dr. Palermo, NCPS Instructional Superintendent, as well as from the two NCPS PBL Specialists, Mr. Welly and Mrs. Noble. As indicated by their responses, strategic planning and professional learning are practices that all schools invest in to reinforce instructional coherence and align central office objectives with those of school.

Background

Nesting County Public Schools ushered in a new Superintendent, Dr. Foster, in July 2017. Central Office staff reported that this change in leadership created some challenges in that the strategic plan, which was the impetus for Project Based Learning

implementation in schools since the 2015-2016 school year, would potentially, and substantially, evolve. Project Based Learning, while continuing to be pivotal to instructional practice, would shift to one of many practices underneath the umbrella of inquiry; whereas before, it was the sole focus for inquiry-based instruction in NCPS. These changes were a result of Nesting County's decision to condense its goals, which were numerous, to four main goals, with PBL being absorbed into NCPS's updated Student Success goal. Subsequently, the county's focus has shifted to ensure that all students can apply Portrait of a Graduate attributes (communicator, collaborator, ethical and global citizen, creative and critical thinker, and goal-directed and resilient individual) in school, in support of career and college readiness (NCPS Strategic Plan, 2019). PBL continues to support the acquisition of Portrait of a Graduate attributes.

Indicating a potential lack of internal coherence in central office, there were no staff members interviewed for this study who participated in the development of the original or refined district strategic plan besides the Assistant Superintendent for Instruction, Dr. Aiden Palermo. However, each of the education specialists associated with Project Based Learning, Mr. Jackson Welly and Mrs. Betty Noble, as well as the elementary Coordinator for Curriculum Integration and Management, Ms. Leslie Lehman, are those responsible for helping schools implement the instructional aims of the district strategic plan. The education specialists act as liaisons between schools and central office, providing professional development opportunities and school support, whereas the Coordinator also provides professional development, and seeks to connect

and integrate district aims, such as new methodology, within the planning and pacing guides for grades K-12.

The following information is an amalgamation of their assessment of Project Based Learning implementation in Nesting County Public Schools.

PBL Implementation

According to Dr. Palermo revisions of the district strategic plan led to significant compacting of its goals and actions. Dr. Palermo clarified the evolution of the plan, from its focus on Project Based Learning to more global outcomes, and provided the following context:

> The first thing I would say that's important to understand is from the instructional services perspective and from my perspective, project-based learning is just one instructional methodology that we want schools and teachers to consider kind of under the umbrella of inquiry-based instruction…

In this excerpt, Dr. Palermo explained that the county felt it was important to broaden the scope of inquiry-based instructional practices, and by reframing the Student Success goal, PBL did not become less important; rather, according to Dr. Palermo, it was now seen as one of many methods to support inquiry and the acquisition of Portrait of a Graduate skills.

The Role of Central Office in Supporting Implementation

Central office leadership is involved in helping schools adopt new district policy and in supporting teachers with refinements to their instructional practice. Participating in

every phase of implementation, from intuiting and interpreting, and from integrating to institutionalizing, central office staff is available to meet with school leadership, including administrators and teachers, to provide an understanding of expectations, as well as to collaborate to provide professional learning experiences that develop teacher capacity. This study brought to light the efforts of these staff members and their contribution to the instructional coherence between central office and schools. This narrative also highlights some of the challenges that can present when communication between central office and schools is not clearly articulated, and when there are too few support staff to address the needs of 200 schools.

Responsibilities of Central Office Staff

Betty Noble, positioned as an education specialist for learning innovation who connects the aims of central office with the work of schools, focuses on Project Based Learning and how inquiry-based instruction supports the attributes and skills espoused by Portrait of a Graduate. During her interview, she described her role as supporting "project-based learning initiatives, helping individual teachers, teams, schools, pyramid sometimes, really actualize the practices needed for PBL to become part of their reality." Her counterpart, Jackson Welly, often works alongside her to develop and deliver professional learning across the county. Mr. Welly works in another office that supports a variety of inquiry-based instructional techniques that support the needs of high-ability learners, and he focuses on Project Based Learning as a method for instruction that promotes access to rigor. Jackson Welly's interview revealed that he believes central

office support is pivotal to the uptake of new pedagogy and asserts the following

regarding central office's role in implementation:

> Central Office has to be the key player in the role of making sure this work
>
> happens. And, there's so many pieces to look at when we talk about this, because
>
> if it's not led at a Central Office level, especially for a district as big as what we
>
> are, then you have variations in what it looks like, what it means.

> Leslie Lehman, a Coordinator who supports innovation in instruction, indicated

that she agrees with Mr. Welly's remarks that allude to the importance of instructional

coherence and alignment between central office and schools. During her interview, she

reflected on the past few years of change and adds the following commentary that

reinforces the PBL specialists' impact within the county:

> …when something is new and innovative, it requires a change, right? A change in
>
> practice, but even prior to practice, a belief, a mindset to frame the why. And I
>
> think that over the past three years, they [Jackson and Betty] have truly worked
>
> with every possible key stakeholder, both community, at the leadership level, at
>
> the school leadership level, of course at the teacher level, to really try to frame the
>
> why.

Lehman continued to comment on the scope of the PBL specialists' role:

> …And so, I would go to saying I think central office's role is a support role, not a
>
> role to dictate that all schools are using PBL X amount of times throughout X
>
> amount of programs or disciplines. But that I think the role is more of providing

the supports, the common messaging, the communication, the resources, the professional development opportunities, and the one-on-one supports at the school level when needed to make this a successful implementation.

This perception that the central office is pivotal to the uptake of new pedagogy through ongoing support, a shared vision, and the provision of resources illustrates that Ms. Lehman feels that central office and schools need to work symbiotically with one another to implement new pedagogy effectively.

Ms. Lehman's role is supervisory in nature in that she oversees the work Mrs. Noble furthers within the county, and she partners with Mrs. Noble to pair other county initiatives with those of Project Based Learning. For example, they recently created a class to elevate PBL through the lens of concept-based instruction, a framework for instruction that promotes the understanding of big ideas and generalizations. Ultimately, Ms. Lehman feels that all district aims, particularly those that are instructional, can be linked to Project Based Learning, and she believes it is her job to help school leadership make that connection, especially if making these connections is not intuitive.

Implementation Gap

According to central office leadership, an implementation gap exists between central office and schools. Collaboration and communication are hindered due to budgetary constraints that prevent the hiring of additional support staff to facilitate the adoption of new pedagogy. In addition, central office leadership presumes that principals understand how to translate a district aim in their building leading to full-scale

implementation. While these challenges exist between central office and schools, those within central office leadership continue to attend to district level changes around PBL by focusing on targeted professional learning throughout the county.

Elaborating on the scope of central office responsibilities, Dr. Palermo, Assistant Superintendent for Instruction, believes that central office leadership and resource specialists are required to help principals set the direction for schools and to align their resources with district aims. Unfortunately, each year that Dr. Palermo has been in his current position, he has been required to streamline his department's budget, thus limiting the number of staff that can help schools manage pedagogical change. While Dr. Palermo is required to consider all aspects of the district strategic plan when making decisions, he focuses much of his attention on the plan's instructional objectives. As a result of his intentionality, Nesting County Public Schools re-allocates time, talent, and resources to support each of the strategic plan's goals. In his interview, Dr. Palermo summarized the challenge he faces each year:

> …trying to figure out how do we cause the implementation to happen with as much coherence as possible with limited resources. And again, it's through a lot of the resource development and a lot of the professional development strategies.

At present, Dr. Palermo suggests that there are 2.5 education specialists that support Project Based Learning in NCPS, albeit the third specialist splits her time between PBL and authentic assessment. Therefore, he concluded that it was imperative that the two remaining central office specialists who share the responsibilities of PBL

implementation work together, and independently, on endeavors that further their efforts in complementary ways.

Betty Noble shared that she sees herself as someone whose role is defined by creating opportunities for leadership and teachers to continue to learn about PBL. She understands that there are challenges associated with PBL implementation, such as working with administrators, who despite not having much knowledge of PBL themselves, need to encourage and support teachers who are beginning or continuing to use non-traditional pedagogy in their classrooms. She wants all administrators and teachers to understand PBL as a tool for deeper learning. Mrs. Noble believes that it is important for teachers to recognize that Project Based Learning is the product of best practice and contends that PBL has the potential to bring together multiple best practices, reinforcing that PBL is not another teaching method added into a teacher's repertoire, but a combination of practices that draws from existing practices and elevates instruction:

> …project-based learning doesn't have to be this completely other thing that you get rid of all the best practices you've learned and cultivated over your career, but how PBL really builds on those best practices and requires those best practices to be in place.

Mrs. Noble sees herself as a connector, someone who "connects not only across initiatives or across best practices, but also across people and resources and helping folks to understand how schools and teachers don't have to work in isolation."

Mr. Welly adds that implementation of PBL requires having a vision and outlines its importance:

> I think that Central Office's role is creating that vision, getting teachers to buy onto that vision, creating leaders, creating resources. And, I think that we have to hit it from many viewpoints. We have to support school leaders, and that could mean school leaders, like superintendents, or assistant superintendents, we have to support school leaders like administrators in what that vision looks like. We have to support teachers, and we have to create resources for all these things.

Both Mrs. Noble and Mr. Welly conveyed that they ultimately believe that in order to implement Project Based Learning in a district as diverse as Nesting County, they need to break down silos and get educators, regardless of title, to take ownership of this shift in pedagogy. They feel that by providing permission and support to all schools, teachers will take risks and move away from traditional pedagogy.

Strategic Planning

As Dr. Foster, the county's new superintendent, began to lead in NCPS in July 2017, revisions to the county's strategic plan were made visible, addressing his belief that if the objectives of the strategic plan were clarified, and significantly reduced, schools would have an easier time understanding, and therefore implementing, district aims. To support the reframing of NCPS's strategic plan, several processes were enacted to refine the outcomes associated with project and problem-based learning.

Working beside Dr. Foster, Dr. Palermo, the school board, and community members used brainstorming processes—"input processes and then feedback processes"—to revise to the strategic plan. Dr. Palermo clarified that the current, and updated, Student Success goal continues to be within his purview as it correlates with instruction. Each year, Dr. Palermo is required to report to the board on the division's success with furthering its instructional goals, and during his report, he advocates for resources that are necessary for the following year's enactment of the strategic plan. Dr. Palermo sees a shift on the horizon for NCPS regarding PBL, especially in light of the recent changes to the strategic plan. PBL will be a driver for learning outcomes such as Portrait of a Graduate, rather than PBL being the outcome. This significant shift impacts teaching, learning, and assessment for all NCPS students:

> …that's where you're going to see, I think, the evolution from the previous strategic plan to the new strategic plan where the main action that we're asking people to do is to support students in demonstrating growth on Portrait of a Graduate skills through presentations of learning, culminating presentations of learning.

Collaborative Learning Teams and Planning

Ms. Lehman, in her role as Coordinator, works with teams of teachers to help them understand how to plan effectively to support shifts in pedagogy. She believes that collaboration among teachers is necessary to foster change and considers Collaborative Learning Team planning time as an imperative to modify instructional practice.

…the power of collaborative teams and professional learning communities at the team level, in my mind, would be the next place where I would want to work myself, the other administrative staff, I would say probably support staff, resource teachers, librarians, the reading teacher, instructional coach, whomever. We would all be on the same page to say, 'If this is a school endeavor, then how can we, in our rules, support teams with this work?'

While this excerpt is not indicative of the focus of Ms. Lehman's current role, she has an aspirational goal of supporting school-based staff, once they are in a comfortable place, with drop-in observations, providing ongoing feedback to teachers about the CLT process. According to Ms. Lehman, the CLT process is illustrative of where schools need to put their energies, and in her opinion, schools that do not have operational CLTs may not move forward with change as quickly as schools that do.

With a focus on planning, and strengthening grade level teams, Mr. Welly and Ms. Noble collaborate with teachers specifically for the purposes of refining PBL units. Such reflective practice takes place during a CLT meeting or common planning time. Mr. Welly shared that central office encourages teachers to work collaboratively, and not in isolation for PBL planning, and that time is spent ensuring that Portrait of a Graduate outcomes exist across content areas—using PBL to support this endeavor.

Professional Learning and Development

Nesting County offers tiers of professional development. As mentioned by Dr. Palermo, the first tier of coursework offers "…support in trying to design a unit that

you're going to be able to implement." The highest level in the continuum provides professional development for individuals who have successfully crafted several PBL units and are designated coaches and leads in their school. These teacher leads support PBL implementation through job-embedded professional development.

When discussing the county' professional development model, Mr. Welly further cited that relationships are the most important aspect of his job, and these relationships allow him to be invited by principals to their schools to provide support and encouragement. Through this partnership, Mr. Welly builds relationships with teachers who invite him to collaborate during their planning time. As his role continues to evolve, Mr. Welly has begun to work across disciplines and departments with other specialists in the county to ensure that PBL is embedded into teacher planning guides, as well as to provide insights to his colleagues about how to transfer this learning from central office to schools. Mr. Welly's commentary during his interview defined professional development as broadly as foundational coursework, and as narrowly as individual conversations he has with stakeholders to strengthen understanding of the what, why, and how of teaching through PBL. A Google Site has been created to collect PBL units that align with NCPS content and curriculum, and teachers have shared student experiences on Twitter using hashtags, such as #PBLinNCPS.

External Conditions

Scaling the implementation of Project Based Learning in a county as large as Nesting takes human resources, which, in turn, require financial resources. While the

county is invested in this work, Dr. Palermo remarked that "there's not a lot of central office funds in the NCPS budget really devoted to this work." Ms. Lehman acknowledged that lack of financial support places a strain on schools that wish to scale up practices. As cohort trainings for grade level teams are during the day, this places a demand on the instructional staff at the school, during a time when there is currently a shortage of substitutes in the county. The cost of substitutes, and teachers missing instructional time with students, is an opportunity cost that the county acknowledges.

As a result, Dr. Palermo focuses a great deal on the sustainability of PBL implementation efforts and mentioned that he continues to work on the instructional coherence between central office and schools, positing a challenge regarding competing instructional priorities:

> …this idea of alignment between division goals and school goals and department goals…seems really simple as a concept, right? I mean, it's basic systems thinking, but that has not been the practice in Nesting County. We've had five regions each with different instructional priorities. We've had a strategic plan that has essentially belonged to central office. Most people couldn't even name at the school level what's in the strategic plan. Most people in the region offices couldn't tell you what's in the strategic plan, right?

This remark explains the breakdown in communication between central offices and schools, including within central office departments. Dr. Palermo would like to see the county's vision unify central office efforts, leading to school alignment across NCPS.

He notes that NCPS crafted a Theory of Action for the 2019-2020 school year to help the county's leadership team, as well as schools, understand what they need to prioritize in order to ensure that alignment, as well expectations for student outcomes, are met.

Summary

Regardless of its limited number of support staff and large number of schools, NCPS central office continues to foster PBL implementation through an espoused approach that includes tiered professional learning for all school leaders and teachers within the county. In addition, central office leadership crafted a Theory of Action that they believe clearly communicates division wide expectations for schools. High-quality instruction aligned to the NCPS Learning model includes inquiry-based, meaningful learning experiences that support the acquisition of Portrait of a Graduate attributes and skills such as communication and collaboration. However, beyond professional learning and development, Nesting County continues to provide complete autonomy for school-based leadership to determine how their staff develops this pedagogy within their classrooms. While attending PBL professional development is not mandatory, there seems to be the expectation that principals encourage county trainings, as well as provide additional opportunities to learn more about PBL pedagogy within their schools. Central office perceives the Theory of Action as a model for change, and this document can help principals and teachers develop school improvement plans that reflect county priorities. In the next section, I explain how school leadership in three elementary schools interpreted district changes around Project Based Learning.

Owl Elementary School

Introduction

Owl Elementary School (OES) has a rich history. Evolving from a one-room schoolhouse in the late 1800s, to the existing school that was constructed between 1955-1956, Owl Elementary serves over 1000 K-6 students at present, designating it as one of the 8th largest schools in Nesting County Public Schools. Nearly 30% of its students participate in advanced academics, with 6% of its students participating in the English Speakers of Other Languages (ESOL) program, and 9% of its students requiring special education support. Its predominant demographic is Asian, at nearly 44%, with White, not of Hispanic Origin, falling closely behind at approximately 40%. Approximately 5% of its students are Black or Hispanic, illustrating that this school is much less culturally diverse than some of the neighboring schools in Nesting County. In fact, Owl Elementary is one of the most affluent schools in Nesting County, with less than 4% of its students accessing Free or Reduced Lunch (FRL).

Once inside the building, and in classrooms, it is evident that this school is well-equipped with technology. All students, in grades 3-6, have laptop devices that travel between home and school. This technology was funded by the PTO, as Owl Elementary has a technology budget and received an endowment from the parent community to fund these efforts. Owl Elementary teachers shared that they take advantage of these resources to support innovation across classrooms, and according to more than one central office

specialist, this is a school that is well-known for piloting several district aims, as well as for being one of the first schools in the county to adopt Project Based Learning (PBL).

Principal Jefferson Hooper mentioned that Owl Elementary took the lead on Project Based Learning as a result of a shared interest among administrators within the nearby community schools wanting to provide deeper learning experiences for their students. After attending a conference, and visiting schools where PBL was a focus, Principal Hooper brought the practice back to his school.

Hooper, who has been a Principal for 8 years, all of which are at Owl Elementary, notes that he feels fortunate to work at his school where students come "from wonderful backgrounds where they have a lot of background knowledge." During his interview, Principal Hooper acknowledged that he felt his school provided optimal conditions to implement PBL since "test scores are always going to be solid and successful." His decision was not based on the district strategic plan, as his school began implementation prior to the strategic plan being released. PBL became an imperative after Principal Hooper determined that it was a great strategy that supports student success, not just on standardized tests, but in middle and high school, as well as beyond, when students enter the real world.

Understanding District Changes Regarding PBL

Principal Hooper was not a member of the district's strategic planning committee, and as previously mentioned, his school was guided by interests that preceded the adoption of the Nesting County strategic plan by nearly two years. Principal Hooper had

a sincere interest in PBL which stemmed from his visit, in 2013, to two High Tech High schools in Indiana, and this visit became the impetus for PBL implementation efforts that same year at Owl Elementary.

Initially, Principal Hooper was inspired after hearing Ken Kay speak at his Region's leadership kick-off about Project Based Learning. This interest led to a group of area administrators and teacher leaders who travelled to Indiana to visit PBL model schools. After subsequent observation in the two high schools over a period of several days, Principal Hooper was eager to bring the practice of PBL back to Owl Elementary. Almost immediately upon his return, a presentation was developed by his technology coach and Science, Technology, Engineering, Arts, and Math (STEAM) specialists to share with grade level teams and the Owl parent community. Principal Hooper commented on the following steps that he took to foster understanding of his school's implementation process:

> We presented to all of our teams individually because that was going to be more powerful than whole school. Then, based on that data, we did a survey to see who would really be interested in project Based Learning and what grade level we thought it should be started. Then, after that information, we presented it to the community that same year, and since the community was very supportive with this information, we assembled a grade level to start with. Then we met with the stakeholders…

This remark shows the importance that Principal Hooper places on piloting new initiatives and getting buy-in before he proceeds with implementation. The stakeholders he considered included the Assistant Superintendent for Instruction, the Region Assistant Superintendent, Owl Elementary's School Board representative, as well as Nesting County's Superintendent.

Centralized Support

Owl Elementary spearheaded Project Based Learning before it was an imperative of the district strategic plan. Therefore, centralized support was not an initial component of OES' implementation plan until after the county made refinements to the district plan and offered classes to promote the principles of PBL. At present, Principal Hooper continues to encourage his new teachers to attend district courses, workshops, and to work with PBL specialists to further refine PBL units and practices.

During a focus group, the fifth-grade team shared that they are involved in a digital portfolio process that supports student acquisition of Portrait of a Graduate attributes such as communication, collaboration, and critical and creative thinking. Through their participation in this cohort, they received training in the ways that Project Based Learning and this portfolio overlap. There is also grade level support offered by Mr. Welly, the PBL specialist, who sometimes visits Owl Elementary to work with the team as part of the portfolio process. According to the survey, and further elaborated by teachers in the third-grade focus group, Mr. Welly supports PBL unit refinement on their team, as well. Teachers new to the third grade team have attended Mr. Welly's

foundational PBL class. Teachers from third and fifth grade also attend the county PBL lead cohort trainings. Teachers who are selected as leads are charged with helping colleagues within their school create and refine PBL units.

Strategic Planning

In 2014-2015, the third-grade team adopted Project Based Learning in two of the grade level classrooms, providing an option that diverged from the advanced academic and general education classrooms. At the time this endeavor began, there were three general education classrooms and three advanced academic classrooms in the third grade. This meant that two out of the three classrooms shifted to PBL classrooms. Principal Hooper shared that it was an open enrollment process, and parents were able to register their child by completing a form. The following year, in 2015-2016, all the fourth-grade general education classrooms became PBL classrooms, and each year, the next grade level followed. Principal Hooper remarked, "As of right now, we have all of our third grade, fourth grade, fifth grade, and sixth grade do Project Based Learning on a daily basis and then, all of our AAP and our K-2, they do at least one per quarter." This statement aligns with their 2018-2019 Strategic Plan that sets a minimum of four Project Based Learning opportunities per year. Clarifying the dynamic of these PBL classrooms a bit more, Principal Hooper shared that the classes were non-advanced academic classes, and that the PBL classes catered to students who demonstrated strengths in one or more areas, but who did not attend Owl Elementary as part of their advanced academic program.

According to their strategic plan, each team is required to write goals based on reading or math, and each team must have at least one PBL goal. Principal Hooper stated that the school has evolved in its interpretation of a PBL goal. Shifting from eight units per year, with 100% participation, teachers now focus on Portrait of a Graduate outcomes, such as collaboration or communication, within their teacher-developed student rubric. Mr. Hooper clarified that "…students will improve from a 2 to a 4 on each Project Based Learning unit. It's now more skill-focused as opposed to just as many projects as we're going to complete throughout the course of the year."

During the focus groups, teachers shared about the early stages of PBL implementation. PBL expanded due to Principal Hooper's intention that every classroom teacher implement one to two PBL units per year. Teachers are aware that each grade level is to have a PBL goal that supports the PBL targets identified by Owl's School Innovation and Improvement Plan, and these goals vary from one grade to another. Most recently, the PBL target was four PBL units per year, which equates to a minimum of one unit per quarter. While interdisciplinary units are a key outcome for PBL implementation, teachers shared that they have begun to move away from integrating language arts through PBL, as they noticed that by integrating so heavily, students lost "their ability to just read and read for fun."

Collaborative Learning Teams and Planning

According to Principal Hooper, the implementation of PBL requires a significant amount of planning and time. Principal Hooper explained that he originally supported his teachers through planning opportunities throughout the summer:

Each summer, I'd allow [planning time] for whatever grade level we're getting ready to start for Project Based Learning on a daily basis. I paid for them to have summer curriculum development for two weeks, so that they could look at all the standards, and pull different standards from the different subject areas.

Since all grade levels have begun to implement PBL, Principal Hooper has reduced the amount of paid planning time. Due to this extensive, extracurricular planning, teachers agreed that they had created a buffer that provides some flexibility during their year when planning time is at a premium. Principal Hooper articulated how this process has progressed over the years and further elaborated about the opportunities he continues to provide:

When we started them [PBL units] at a new grade level, we brought all of the general ed. teachers, as well as our PBL at the time, and then also the special ed. teachers, so they could work together…they created pretty much the curriculum for that two weeks, they had a good start then for the following year. Then, basically, as we added a grade level…I just paid for them to just use two days so that they could tweak the lessons that were already created by them over the last four years.

This statement expresses Principal Hooper's acknowledgement that teachers are encumbered by other responsibilities during the school year, and that he sees a need for all teachers, regardless of title, to be involved in planning for PBL.

Additional Planning Opportunities

Team planning days were also highlighted during conversation with the third and fifth grade teachers. The importance of planning days, while mentioned in the survey by teaching staff, was made more apparent during the focus group interviews. One teacher shared that she received two weeks of paid planning time, and it was clear that Principal Hooper's teachers understood this to be a substantive amount of paid curriculum development at the school level. Teachers shared that quarterly planning days also allowed them to focus on PBL implementation, but as they have become more comfortable with planning, they opt to use their common planning time to refine PBL units instead.

In the first few years of implementation, Principal Hooper stated that teams initiated PBL in every subject area except math. Then, after receiving feedback from teachers and community members, the focus shifted to providing Project Based Learning opportunities within science and social studies. This decision led to changes in the master schedule, the document that helps teachers manage time expectations for core content areas and other classes. However, it was not clear as to what extent these recent master schedule modifications impacted instruction related to PBL. It seemed that there was a discrepancy between the grade levels as to whether a "PBL block" had been absorbed.

While fifth grade teachers shared that the master schedule shifted away from a PBL block that included language arts (reading and writing), the third-grade teachers highlighted how they used the PBL block to advance inquiry-based instruction. One teacher described the PBL block and its purpose:

> Well, everybody has a block of time to do Project Based Learning. The team can decide, based on their lunch schedule and the specials schedules, when it works best in their schedule. For advanced academics and PBL, we don't necessarily do the exact same project or follow the exact same path on that project, but the intended learning goals and skills are pretty much the same; it's still the same content.

The presence of conflicting information among teams may be due to the different ways the grade levels are structured. Fifth grade is departmentalized, whereas third grade is not. Regardless, teachers stated that a flexible master schedule, with or without a PBL block, is necessary since the students in the advanced academic classes rotate.

Teacher commentary about Collaborative Learning Teams (CLTs) aligned with Principal Hooper's remarks. The fifth grade mentioned that their team meets once a week, and these meetings do not follow a specific agenda; rather teachers have autonomy to determine what action items they need to address to support student learning. In addition, data dialogues are held during quarterly CLT meetings with administration. In contrast, the third-grade team shared that they also focused on Kid Talks during their CLT meetings. Special Education and English Learner teachers that participated in the

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third-grade focus groups shared that they often preview the PBL units on Google Drive since everything is shared through this interface. These teachers make refinements to the materials on an as-needed basis. According to Principal Hooper, there are no mandatory structures that teachers use to plan for content or for PBL units, and this comment aligned with the remarks of these two teams.

Professional Learning and Development

Preceding the school-level implementation of PBL, and discussed during his interview, Principal Hooper mentioned that professional development was tantamount to increasing the uptake of PBL. Principal Hooper explained how he prioritized professional learning at Owl Elementary:

> The first summer when we were getting ready to kick it off the following year, we had Buck Institute for Education come in, and they train up to 35 teachers or staff members. Then, the following year, we also had Buck Institute come back out and they trained an additional 35 staff members. One of the groups we also wanted to pull in was our instructional assistants because we found out, like the first year, that they really didn't know the extent of what Project Based Learning was. We made sure that they got the proper training, as well.

As indicated by Principal Hooper's statement, training for all staff was a priority, but limits regarding participation prevented the entire staff from being developed at the same time.

Currently, staff members who are new to Owl Elementary take the PBL courses that are included in Nesting County's professional development course catalogue. Principal Hooper commented that he felt that Nesting's PBL instructors, like Betty Noble and Jackson Welly, could offer the same level of professional development as the Buck Institute, who previously offered his staff training in PBL 101, a foundations course, and PBL 201, an advanced course for PBL instructors. Principal Hooper has saved a lot of money by using the county's resources as each training by the Buck Institute for Education (BIE) costs $10,500. This is an expense that few schools can afford and reflects the generosity of Owl's Parent Teacher Organization (PTO).

In addition to county coursework, a teacher new to third grade commented that she was provided training in PBL before she started working at Owl Elementary since she was specifically hired to instruct in a PBL classroom; this included opportunities to observe at other schools. Special education and ESOL teachers who participated in the focus groups shared that they receive professional development, too.

A veteran fifth-grade teacher shared there were many in-house professional development workshops offered several years ago, orchestrated by the third-grade teachers who initiated Project Based Learning at Owl Elementary. However, this practice has not been maintained because these teachers no longer work at Owl Elementary School.

Internal and External Conditions

Parents are a major influence at Owl Elementary, and their support of new initiatives appears essential to innovation at this school. To ensure parent support, Owl Elementary hosted a family PBL night. Several teachers displayed PBL units with student artifacts and explained student learning through the use of PBL. Principal Hooper shared a bit about the importance of communication and engagement with his families:

> A couple of years ago, we actually sent out surveys to all of our parents for students [who] participated in PBL. The number one thing based on those surveys that they said was their child being engaged in the classroom, and that's the thing that we've seen that's come out that's been most important to teachers, as well as to administration.

Principal Hooper believes that student engagement, as an outcome of PBL, has led to substantial financial contributions from the community. After putting together a presentation for stakeholders, which included videos of third graders using computers to support Project Based Learning, the school received $60,000 from the PTO to support these efforts. Hooper inferred that financial support can nurture a positive school environment and trust between staff and parents. He suggested, "…just make sure everyone is on board with the process."

With all this support, it was not surprising that teachers were unable to elaborate extensively on any potential challenges regarding PBL implementation. However, fifth grade teachers shared that they would have appreciated the county placing more emphasis

on Portrait of a Graduate attributes and skills prior to the implementation of PBL. This is due to this team's participation in a pilot portfolio process that connects PBL to Portrait of a Graduate outcomes. This reversal places the emphasis on skills, not the method of instruction. Similarly, these two aims, the presentation and PBL, are heavily reliant on technology. Teachers, across both grades, stated that access to technology has supported many aspects of their PBL implementation. One teacher offered,

> …as the years have gone on and technology has become more available, and we started to have 1:1 devices, all of these projects have become evolved…and we're still evolving…because now we are in a Portrait of a Graduate class. We want to change it [PBL unit] to include Portrait of a Graduate skills.

This remark reflects a deeper understanding and desire to refine PBL outcomes for students. She indicated that access to technology removed barriers to communication and collaboration among her students.

Perhaps more closely aligned with an internal condition, Principal Hooper and his teachers reminisced about the support teachers were provided by their previous technology specialist. It seems her expertise was critical to initial schoolwide PBL implementation efforts, and her absence highlights the importance of teacher leadership and capacity building in the implementation of new pedagogy.

Summary

Owl Elementary's Project Based Learning implementation efforts were heavily influenced by professional learning that was provided by an outside organization, the

Buck Institute for Education. Accessing such professional learning for a large staff requires money and time, in addition to the extensive, paid planning that teachers took advantage of over the summer to enhance PBL practices across classrooms. Now that PBL implementation is a schoolwide endeavor, with 1:1 technology access for students in grades 2-6, Owl Elementary appears poised to continue PBL implementation with fidelity across all classrooms.

Heron Ridge Elementary School

Introduction

Heron Ridge Elementary School opened its doors 56 years ago and serves students from three different communities within the county due to its status as a center for advanced academics. It is an extremely diverse school with students from over 40 countries and nearly as many languages spoken. It serves a population of nearly 1,100 students, comprised of nearly 40% White students and 31% Asian students. Its next largest ethnicity is Hispanic, 16%. Twenty-three percent of its students receive free or reduced-price meals, and this data illustrates that its student population is moderately impacted by poverty.

Once inside the building, it becomes evident that this school serves more students than was originally intended, and it is notably a bit complicated to maneuver due to an additional modular campus on the periphery of the back of the building. As some of the grade levels have teams of seven general education teachers, twice the size of many schools in the county, modular learning units support grade level expansion, and students

seem used to the carefully timed transitions between classes, sometimes requiring movement from outside in the modular classrooms to inside the building, and between the first and second floor.

At Heron Ridge, there are seemingly many moving parts, and due to the sheer size of the school, the Principal is afforded two Assistant Principals who work together to coordinate academic oversight, promote school safety and security, as well as foster family and community engagement. Efficiency seems to be evident among all school administrators, and Principal Anderson, once seated, immediately shared the signed consent form that was emailed just prior to the interview.

Understanding of District Changes Regarding PBL

Dr. Mary Anderson has been a Principal in the county for 20 years, with this year marking her fifth year as Principal of Heron Ridge Elementary School. Her responses during the interview echoed her personal philosophy of leadership as much as it reflected the culture of her school. Principal Anderson views her school as a leader of Project Based Learning in NCPS, and she stated that her school takes great pride in their efforts to continue to advance this aim. While all students participate in Project Based Learning at present, this was not always the case. Principal Anderson believes in starting small, and invited teachers to advance Project Based Learning pedagogy through their own volition, organically at first, and subsequently as a result of coupling Project Based Learning implementation with goals supported through their School Innovation and Improvement Plan.

Principal Anderson was not a part of the district strategic planning efforts; however, the outcomes supported by the county's strategic plan, that took shape beginning in the 2014-2015 school year, "heavily influenced" her school's uptake of Project Based Learning. Principal Anderson included a goal in her 2014-15 school strategic plan as follows, "By June 2015, 100% of classroom teachers will complete an arts integrated lesson embedded with the nine [eight] Project Based Learning essentials and share with an authentic audience." To clarify this expectation, Principal Anderson explained that she defined PBL "…as a way of teaching and learning that is focused on inquiry and research, and there's a lot of choice for students, and it's an authentic way of learning." Dr. Anderson provided the following example:

> I think it's more of an innovative way of kids learning and certainly teachers teaching. Instead of just designing a book jacket for a book…our third-grade teachers might say, 'Imagine that you were a character in the 1800s, how would you design the book cover to tell about the life of settlers?' It's just a way to more actively engage students, they have some choice, it's more authentic learning, and just really, it reaches a more diverse population in terms of [being] hands-on, an exciting and engaging way to learn.

In this quote, Dr. Anderson reinforces her belief that PBL is a more authentic, engaging, and practical way to teach and learn.

Intuiting and Interpreting the District Aim

According to the responses of the third-grade team during their focus group,

Project Based Learning became the nexus for professional development during the 2014-

2015 school year. Teachers initiated their understanding of PBL through the professional

learning offered on-site and throughout the county. Such ongoing learning was deeply

encouraged and reinforced through teacher participation in staff meetings that focused on

the various elements of PBL. Mr. Welly, their former art teacher, and currently a central

office employee, supported teachers and students in developing their comfort with PBL

by demonstrating how art and PBL overlap. Mr. Welly displayed a variety of projects

students completed, across grade levels, at Heron Ridge. One teacher, recalling his initial

conversation with Mr. Welly regarding PBL, mentioned that Mr. Welly had attended a

professional development training for Project Based Learning and, as a result, began

encouraging staff members to try to incorporate this new pedagogy into their practice.

Similarly, the fifth-grade teachers shared their experiences interacting with Mr. Welly

and other staff who were early adopters of this new pedagogy. It seemed that specific

teacher leaders were initially responsible for diffusing innovation within Heron Ridge

Elementary School:

> It's usually teachers that are in-house sharing what they know and do. Recently,
>
> probably in the last two years, we even had a staff development day where it was
>
> not a formal workshop, it was more of a gallery walk where you could go to a
>
> grade-level PBL that was pertinent to what you were doing.

According to the fifth-grade team, PBL has been a constant focus for staff professional learning and development. These learning experiences are perceived as relevant and feature the efforts of Heron Ridge teachers.

In addition, teachers on the third and fifth-grade team stated that Principal Anderson was involved from the beginning in their understanding and uptake of PBL. Principal Anderson has been present at grade level PBL events, during the day and after-school, supporting teachers, students, and their parents. The team appreciates the words of encouragement that the administration continues to offer as expectations continue to persist at their school within their strategic plan, assigning teachers the responsibility of completing multiple PBL units per year. Initially, it was four units per year, and now it is less about the number of opportunities and more about the quality of each PBL experience, with a focus on Portrait of a Graduate attributes and skills as the outcome.

Centralized Support

Commenting on the availability of centralized support, Principal Anderson mentioned that two PBL specialists from central office visit her school often. However, she shared that "Mr. Welly is one person, and even with Mrs. Noble, and well, not really Mrs. Ferry, they can't train 136 [n=144] school staff on PBL as much as they try." She furthered this sentiment by mentioning, "You're sort of on your own as with any initiative in this county."

Notwithstanding a lack of centralized support, the third and fifth grade teams were able to persist in furthering PBL. This was due to their belief that there was not

much of a need to look outside of their school for assistance because there were so many knowledgeable teachers on site. One of the teachers who was new to the fifth-grade team shared the following sentiment:

> I haven't felt the need that I need to go out and look for additional training because my team, and the people who are not on my team but are trainers within the district, are here at school. So, there's people that I can just send a quick question to like, 'Hey, can you look this over for me? I'm having a hard time,' or whatever. So, I feel like we have a lot of support here just as part of our structure.

One aspect regarding school culture at Heron Ridge is that its teachers have been invested in PBL from its infancy. Teachers count on one another for support and this seems to lead to a sense of collective efficacy among HRES educators. Another teacher added that "…in-house support is there. We don't really feel like we need to, but admin. does give us knowledge about opportunities outside of here that if we want to pursue those, we could go do that too, as well."

Strategic Planning

During the 2017-2018 school year, the strategic goal supporting Project Based Learning was further defined, delineating that each teacher, across all grade levels, was required to complete at least two Project Based Learning experiences with his or her students. In addition, Dr. Anderson orchestrated a PBL lead team to provide in-school support. The PBL leads are different from the team lead, and his or her purpose is to further collaboration within and among teams, promoting vertical articulation. The PBL

lead team, with representation across grade levels, originally met once a month to check-in with Mr. Welly and figure out ways to promote PBL through staff development. According to Principal Anderson, she believes it is important to reinforce these expectations:

> …reinforce what you want to see, so when teams are doing great PBLs, we are very direct about letting everybody know that, sharing that, reinforcing it very positively. We get a lot of positive feedback from parents. It just grew. We kept it as a priority, so we've limited our priorities, and PBL has got to be one, and has been for the last three or four years.

Principal Anderson has shaped her school's innovation efforts around PBL implementation and continues to facilitate the diffusion of new pedagogy through ongoing communication with parents, sharing practices within the school community, and restricting the number of priorities she places on her teachers.

Defining these priorities through the SIIP, the third-grade focus group evidenced some confusion, including a disconnect between the plan and PBL implementation. One teacher, referring to the SIIP, stated, "I don't think I've ever laid eyes on it, and I've been here for 10 years." Another teacher asked, "What is it?" While a teammate's response stating that it changes every year, provoked the previous teacher to clarify, "I know, but I don't think in 10 years even I could say exactly…I do know that PBL is in there because I've had to go to other meetings where they reference that." Teachers suggested that they felt that their administration has the SIIP in their focus, and they feel the plan impacts

what administration is asking teachers to do. One teacher suggested that while she is unfamiliar with the SIIP, that the skill of communication and PBL are the two big driving forces within the school:

> …because they've [administration] have done a good job of communicating this is the focus this year, and this is what's going to happen. We were not in on the planning and have not seen much of it, but I'm pretty sure that would be...those are two driving forces that are leading our year this year.

Therefore, while it seems that goals within the SIIP are unfamiliar to teachers, they understand that PBL is a focus for instructional practice at their school.

At Heron Ridge, students are assessed on their communication skills as they relate to their presentation to an authentic audience at the end of their PBL units. Students self-assess their progress throughout the PBL unit regarding communication, and teachers provide summative feedback that is submitted on a data wall. No teacher on either team regarded this data as data used expressively for their school strategic plan.

Another area of the SIIP that seems unclear to Heron Ridge teachers is the frequency expectation associated with PBL. At present, there is a discrepancy between teams regarding how many PBL opportunities teachers need to complete per year. Despite the agreement among teachers that PBL continues to be a priority, and while most teachers recognize that there is a goal in their school plan, some teachers believe they only need to complete one PBL unit per year. This is a departure from their most recent PBL goal that highlights a minimum of two PBL experiences per year. A fifth-

grade teacher mentioned, "I would say that the basic expectation is that, as a grade level, we do have a fall and a spring PBL, but that's just the basic."

Collaborative Learning Teams and Planning

Regarding planning for Project Based Learning units, Principal Anderson appeared reticent to express her thinking, stating the following: "We're not really into CLTs here. We only have two a month. We don't do planning for PBLs at the CLTs. We do a lot of data analysis. We do planning. We do ways to meet kids who are struggling." Therefore, PBL planning takes place outside of CLTs; teachers have common planning time each day.

Principal Anderson's conversation regarding collaborative planning was heavily underscored by her belief in the provision of autonomy:

…[I] value teachers' time, and…feel that they can get more done just on their

own or with their grade level team. Our teams are big. There are seven teachers—

most of them. That's sometimes hard to move along together, so they are so much

more effective using their time the way they want to."

However, this autonomy may have led to some confusion among staff as a third-grade teacher concluded that teachers do not understand the expectations for common planning time and the parameters and expectations defined by the Collaborative Learning team cycle:

I feel like if you asked admin this question, they would probably give you a

different answer because in the beginning of the year team leads all got together

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and they were like, 'Okay, so really your CLT time is now yours. We're no longer

planning it for you.' And essentially, every single time we meet…I'm not going to

tell you how often that is...they tell us what to put on the agenda, essentially. I

mean, I feel like very rarely is it teacher driven.

Another teacher quipped, "We meet twice a month."

The way in which these CLTs were framed made it seem like they were more

akin to a data dialogue than a true Collaborative Learning Team meeting. A fifth grade

teacher, who was new to the building, vocalized that,

> …CLTs have been helpful, for me especially, learning the PBL process and
>
> figuring out how things go and being able to ask the silly, very rudimentary
>
> questions to get an understanding of things. But it's being separated [by
>
> buildings], it's a bit of a challenge sometimes. And the administration really
>
> wants us to integrate and work together, but it's difficult not even being in the
>
> same structure.

On the fifth-grade team, there are six teachers, and their classrooms are located inside the

building, as well as in the modular.

Likewise, third and fifth grade teachers agreed that planning for PBL required

time outside of a CLT, with one describing planning as,

> I think we relied a lot on electronically sharing things, too, and taking something
>
> like an existing rubric, and sharing it, and tweaking it, and collaborating that way,

or dividing and conquering. Like, you're going to work on the driving question, and we will help you with it.

A teacher from the third-grade team validated this previous sentiment by sharing, "I feel like we've done it [PBL] so often at this point that we just help the new people, but we're all pretty much aware of it."

Fifth grade teachers reported that their planning for PBL included support and oversight from school leadership, including feedback that helped refine their driving question and authentic audience. One teacher shared that administration asked questions to probe their thinking, "Hey, have you thought about having these people involved in your authentic audience when you're planning that presentation? How can we help with getting a space available for you all?' And they really help to edit the driving question, as well."

Consequently, while it appeared that teachers arrived at the same outcomes for students regarding PBL, the planning process varied between grade levels, thus making the planning cycle for Project Based Learning seem a bit nebulous.

Professional Learning and Development

Principal Anderson, throughout her interview, mentioned that her school was fortunate in that Heron Ridge was previously home to one of the current PBL specialists in the county, Mr. Jackson Welly, who, during his tenure at Heron Ridge, was the school's resident full-time art teacher. While Mr. Welly worked at Heron Ridge during the 2015-2016 school year, he attended the Buck Institute for Education for further

training regarding Project Based Learning. His participation in this training not only supported his practices but validated the work he was already doing within the school. Therefore, upon his return, plans were made for Mr. Welly to do some turnaround training. During the 2016-2017 school year, Mr. Welly "did training for probably half of our staff on Project Based Learning just on a volunteer basis." According to Principal Anderson, this training helped teachers try their hand at this practice in a more intentional way.

Although teachers discussed with Principal Anderson their position that Project Based Learning was an aspirational goal, she continued to find ways to actualize this goal and to promote the sharing of ideas among grade levels, including encouraging teachers to share their efforts during smaller presentations that took place during staff meetings. According to Principal Anderson, this was one way that teachers were able to expand their understanding and "…also help within our building [to] get real consistent about implementing it in K through 6." Teachers "spent a lot of time sharing these great projects, showing how different kids could learn using Project Based Learning, and supported that with training and reflection on how it was going." Principal Anderson stated that this was the way PBL was initiated and reified in her school, and that as teachers continued to get trained, showcasing these efforts became more common. Principal Anderson asserts that everyone is implementing PBL with fidelity, but that some of her teachers are "further along than others." Some of her teachers take time to

create their own PBL units while others adopt ready-made units from the Buck Institute for Education.

To increase the efficacy of her teachers who are new to her building, Principal Anderson encourages teachers to attend the district level professional learning; all teachers are encouraged to take PBL 1, which is the first class offered by the county. Many teachers, about half of her instructional staff, have also taken PBL 2, which she believes is "really supportive to their learning." There is time allotted at every staff meeting for teachers to share what they are doing with PBL in their classrooms. While Collaborative Learning Team (CLT) meetings are not spent planning PBL units, there are "check-ins" to see where teachers are within their PBL units. Principal Anderson mentioned that she "feels like its got to be ongoing, and it's part of our school plan, so we constantly revisit where we are with implementation."

In addition, Principal Anderson shared that while she was pleased that Heron Ridge was selected to participate in a pilot cohort to support innovation and assessment within the county, her excitement quickly dwindled as the cohort disbanded when leadership overseeing these efforts resigned from the county. During the height of this pilot, Principal Anderson was able to learn more about PBL practices at other schools and has pushed herself to reach out to schools who began their PBL journey in a more formalized way. She believes there is a sincere need to "…expand our learning." She shared that there are very few opportunities whereby she and her teachers can expand their understanding of PBL and mentioned, through frustration, that "Other than that,

there really hasn't been central office support. There is a PBL lead, and they get together." This statement reinforces her observation that teachers rely on one another to further PBL at Heron Ridge.

Like Principal Anderson, her teachers expressed implementation challenges during their focus groups. It is important to note that there are approximately 90 staff members, and not everyone was as eager as Mr. Welly and Principal Anderson to embed Project Based Learning principles into their classroom instruction. Principal Anderson mentioned that forming her PBL lead team was difficult in that some of her teachers were early adopters, and others she had to persuade to be a part of the team. Ongoing implementation efforts continue to take place during staff meetings that are organized through a workshop model approach; meaning that teachers rotate between various grade levels to observe and discuss what PBL opportunities are being presented to students across various grade levels. Similarly, Principal Anderson believes in sharing ideas within the school and across the division. She invited a group of principals from across the county to observe PBL practices in her school. There is also a "Share Fair" that her teachers have been involved in that Mr. Welly now coordinates for the county.

Teachers continue to develop their understanding of PBL through their participation in courses offered by the county. Some classes are arranged after-school, and often hosted at Heron Ridge, to support teachers getting trained in the fundamentals of PBL. A few teachers shared that they took the PBL 1 course over the summer. One third grade teacher offered that his PBL training was through a blended-learning cohort,

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that bridged PBL with technology integration. This training included school teams from across the county and was hosted in a central location. His cohort team consisted of Heron Ridge teachers from various grade levels. They were required to present at an exhibition, and Principal Anderson attended this culminating event that celebrated the learning of many educators across the division.

Additional professional learning to support PBL includes optional, part-day seminars that focus on one or more aspects of PBL. Some of the third-grade teachers have attended these professional development sessions. Moreover, three teachers from fifth grade shared that they elected to take the PBL 2 course offered by the county. Continuing their learning journey beyond the fundamental coursework evidences a more extensive schoolwide commitment to understand and implement PBL.

External Conditions

Rounding out her interview, Principal Anderson addressed what she believes is the stigma that "…PBL is only for high-achieving kids, that it doesn't work for kids that are ESOL (English Speakers of Other Languages), or from poverty, or diverse backgrounds." She seemed to understand that teachers may get caught in the demands of needing to teach the content so that students can pass state tests. And, while she feels that may hold some teachers back from fully investing in PBL, she believes that her school is a model for diverse schools in that they do have over 1000 students, with approximately 30% poverty, and believes that they are demonstrating that PBL can meet all students' needs. "If you look at our SOL scores, they certainly haven't suffered. In fact, they've

been improving since we embarked on this PBL journey, so that's what I'm hoping we could show." She believes that there is a strong need to convince leadership, across the county, that it is ok to provide permission for teachers to focus on this pedagogy, despite the emphasis on standardized test scores. Her wish list to support PBL implementation includes time and money for PBL planning days, classes, and conferences. She believes, ideally, that the county needs to set aside funding to provide additional time for teachers to learn. To Principal Anderson, this is the "bottom line."

Teachers, across grade levels, expressed an urgency in ensuring all students meet or exceed learning targets, and while they see PBL as a driver for engaging students in content, they continue to feel the pressure and need to get their students to pass state tests. One teacher remarked, "I don't know if I have time to do a PBL right now. We need to get this content in their brains. So, I know that's my push and pull in the old dog trying to learn a new trick."

In this context, PBL was viewed as a deterrent to learning new content because it was perceived as taking too much time. This teacher felt that more traditional methods for instruction would better prepare students for state exams.

In addition, teachers expressed concern that implementing new pedagogy interferes with teaching a balanced literacy program.

…for example, I've been doing PBL all week. I've been looking at their biographies because we did all our research. That's my whole language arts. I don't have time to do anything else because that's what we've gotta do. So, I think

it's important to consider that this is taking the place of a big fat chunk of language arts. I didn't teach grammar this week, I threw in spelling, but this is it. This is what I'm doing.

Teachers across these two grade levels expressed difficulty in balancing additional county aims, and one grade level specifically referenced a reflective portfolio process that enabled them to use PBL as a driver but that also took a significant amount of time for them to enact in their classrooms. Competing district aims, time, and opportunities to plan during the school day were the three main challenges faced by teachers at Heron Ridge.

Summary

Heron Ridge, while capitalizing on central office support when available, often relies on the expertise of its teachers to further PBL within the school. According to Heron Ridge's strategic plan, PBL has been incorporated as a goal for several years, but teachers assert this was not the catalyst that prompted adoption of this new pedagogy. Professional learning, provided by in-house teacher leaders, reinforces PBL practices throughout the school. Similarly, participation in an innovation cohort allowed administrators and teachers to learn about other schools' PBL implementation processes and how they were using PBL as a form of student assessment. Planning for PBL occurs mainly outside of CLTs, with most teachers continuing to refine previously created units instead of crafting new experiences each year.

Bluebird Elementary School

Introduction

Bluebird Elementary School is located on the other side of the county from Heron Ridge and Owl Elementary School. It is a much smaller school than its others, and its demographic data differs greatly, too. As Bluebird Elementary School is Title I, it serves a population where over 60% of its students live on or below the poverty line. Its majority English Learner population, nearly 60%, is comprised of majority Asian (36%) and Hispanic (33%), followed by White (17%) and then Black (12%). Moreover, there is a high mobility rate at this school, which far exceeds the county's average by nearly double. This means that over 20% of its students each year move in and out of the school's boundary. While these statistics may provide challenges throughout the school day, none were visibly evident through my communication with the teachers or through observation of students in the hallways or classrooms. The school is bright and cheerful, filled with affirming quotes, and has recently undergone a significant renovation as its classrooms are updated and the furniture is colorful and modern, including the tables, desks, and chairs that are designed specifically to encourage a collaborative learning environment for all students.

Understanding of District Changes Regarding PBL

Catherine Williams is a principal with strong convictions and an eye toward students' career and college readiness. At the very beginning of the interview, she linked Project Based Learning to her mission and vision for her school, stating the following

with much passion, "…we really are preparing the kids for jobs that we don't know, and experiences. It's really what skills do they need to be successful in the workforce or their further education." Principal Williams shared that she is heavily influenced by the district's strategic plan:

> We're using that as an umbrella or we're using it at the forefront when we went through and redesigned our school vision and mission, and as we make choices about our School Innovation and Improvement Plan, so I think it's at the heart, and we refer back to that plan.

> Williams described Project Based Learning as "an opportunity for kids to explore, and we use the standards, and they're able to be provided a real-life situation, or a problem or a concern that they're able to address." Other descriptors included authentic learning opportunities and academic choice. She recalled a PBL unit her fifth-grade team implemented that required students to learn about severe weather and craft an emergency announcement that was broadcast through a podcast, brochure, or other means to alert the public. The team utilized a central office employee, who is also a weather aficionado, to discuss meteorology. Principal Williams discussed the importance of communication in presenting findings to an authentic audience, as well as the importance of modeling this type of thinking and learning as a staff.

In order to shift to a more authentic approach to learning, Principal Williams requested that Jackson Welly present to the staff at Bluebird Elementary about the fundamentals of PBL, and soon thereafter, a course was offered to support teachers with

making a shift from tradition to more authentic pedagogy. Nearly half of the teachers

participated in an after-school course to understand the elements of PBL and how they

could design learning experiences through this new lens for learning. Jackson, along with

his PBL specialist colleague, Betty Noble, visited Bluebird a few times that first year to

assist teams with the development of PBL units, as well as how to implement the units

across content areas.

To further support district change, teachers at Bluebird who took an advanced

PBL course, PBL 2, were designated as PBL leaders and were assigned a grade level to

support. This PBL lead teacher team facilitated opportunities for teachers to develop a

deeper understanding of PBL, as well as to design more engaging and rigorous PBL

units.

The teachers shared that there was an expectation, presented by the Principal, that

all staff take the PBL class offered by the county to begin implementation of this new

pedagogy. Centralized support offered by PBL Specialists, Mr. Welly and Mrs. Noble,

played a prominent role in the beginning and current stages of PBL implementation. As

new teachers begin or continue their career at Bluebird Elementary, they are informed

that Project Based Learning is part of the fabric of the school.

Centralized Support

At Bluebird Elementary, it is difficult to discuss professional learning, strategic

planning, and collaborative planning without highlighting centralized support. Bluebird

Elementary is an example of a school that capitalizes on resources and opportunities

afforded by the county. Centralized support has made a significant impact on the efficacy of teachers, in addition to the support provided by school-based leadership. One fifth grade teacher reflected on how her principal afforded staff every opportunity to immerse themselves in this new pedagogy:

> Two or three years ago, she actually got two different [PBL] classes at Garfield, so that everyone on staff at that time could go, and they didn't really have an excuse. It was right after school, right here. She [Principal Williams] really helped facilitate the majority of the staff in getting it…she brings in Jackson quite often to help us.

Jackson Welly was often at Bluebird Elementary during professional development days, which is a significant time commitment for an individual who serves every school site in Nesting County. Teachers from both grade levels shared that they received support from central office staff for their PBL Share Fair, as well as during CLT meetings when PBL planning took place. The PBL education specialists revisited Bluebird Elementary to present a workshop solely on PBL assessment since teachers shared that was a challenge they faced when implementing PBL.

Implementation of PBL continues to be supported by education specialists, as well as county leadership. Mr. Welly, one of the main PBL education specialists supporting implementation, initially piqued teacher interest and buy-in through a brief overview that he presented during a staff meeting. Principal Williams felt that this introduction was vital because, "it was really important that they heard from an expert

who's involved in it to get them excited." In addition, the fundamental PBL 1 class was hosted at Bluebird Elementary, whereby most staff participated after school and were trained in PBL. During the following year, her school participated in the county's "Innovation Cohort." This cohort allowed staff to connect with colleagues around PBL, discuss what PBL looks like regarding implementation in the school, and to really dig into successes and problems of practice associated with PBL. Education specialists supported staff in completing reflective exercises during the school year in which school teams took a step back and re-evaluated their implementation and considered other county initiatives, such as Portrait of a Graduate, and how these two district aims were "intertwined." A schoolwide PBL Share Fair, a tradition that is repeated each year, further supports reflection and professional learning. In addition to facilitating reflection, centralized support visits the school during the Share Fair to provide feedback. Principal Williams feels positive about their ongoing visits. "I think it's helpful to have an outsider come in, it validates some [teachers], but it also gives us and helps us grow in supporting them."

Strategic Planning

As stated previously, there is a direct link between the county's strategic plan and Bluebird Elementary's SIIP. Previously, there was an iteration of a PBL goal, within the SIIP, that furthered the implementation of PBL each year, including the past three years. This year, the school team refined their goals to focus more intently on reading and math progress, as well as the use of advanced academic strategies for all students, including

PBL, to reinforce access to rigor across all content areas. This shift asserts that while PBL is not the central focus, it is still considered an important method for instruction at Bluebird Elementary.

When the school first initiated an innovation goal, they began with connecting PBL to science and social studies because that was "less threatening than math and reading." Principal Williams remarked:

> Teachers quickly saw how we can start having that interconnection between content, which was really cool, and then continuing that process, and I think the part that's really important right now is providing the teams an opportunity to reflect on their PBLs, and giving them the time to plan together, and that's really hard to do, to be creative with that.

This sentiment reflects Principal Williams' belief that teachers want to be intentional about interdisciplinary instruction and make connections between PBL and content areas and skills.

Principal Williams shared that she has concerns about PBL becoming a "buzzword" and how implementation would take shape at her school:

> I think, initially, I was like, 'Oh, we can do four a year.' My leadership team was like, 'Can we scale back a bit?' Taking that feedback from the team…to scale back, and sometimes do less at a really phenomenal level is better than doing more…

Since the original goal of PBL at Bluebird Elementary was rooted in the number of experiences, and not quality of experiences, this prevented teachers from sincerely developing their understanding of this new teaching methodology. Rather than seeing PBL as a perfunctory goal, Principal Williams wants her teachers to see the value in incorporating PBL experiences into their repertoire of teaching practices and to do it well. She shared that she has an interest in continuing to have PBL highlighted in her school plan and has designs on considering a three-year plan to support this endeavor. Backwards planning will continue to be integrated to help her leadership team visualize how to support and elevate teacher practice to sustain PBL implementation in subsequent years.

Teachers understood that their school's strategic plan connected to PBL but recognized that unless you were part of the SIIP committee, you did not participate in much reflection regarding schoolwide goals, or not nearly as much reflection as they thought should be required of staff. Despite not reflecting on PBL pursuits, teams shared that they could repeat a PBL unit that they had implemented in the past, or revisit a unit that they refined, in order to fulfill the requirements of their school's PBL goal. The repetition of these units, akin to reflective practice, encouraged teachers to evolve with their practice. Grades three and five teachers also agreed that while the expectation to complete at least two PBLs per year might seem a bit underwhelming, it is more than rigorous in a school where one of the challenges they face is a lack of resources, such as technology, to support the research associated with PBL. As one teacher mentioned,

"…we were really looking at doing authentic PBLs and following the rubric that is on the Portrait of a Graduate website with PBLs. So, I think that's why we just said we're doing two." Commitment to the integrity of school goals is important at Bluebird Elementary School.

Collaborative Learning Teams and Planning

Collaboration during planning time, whether during CLTs, known as Collaborative Teams (CTs) at Bluebird, or during another planning opportunity, allows teachers to craft PBL units, as well as reflect on their success. Most planning for PBL occurs outside of CTs due to a need to plan for core content areas, and while these PBL opportunities overlap with content, Principal Williams was direct in relaying that, "…our reality is it's a targeted school that when I have planning time it's devoted towards Literacy and Math. If PBL comes up during that, that's great."

While principal support was not a dominant theme throughout her interview, the few times that it was framed in conversation by Principal Williams, she made it clear that it connected to planning for PBL. Principal Williams felt that it was an imperative that administration be familiar with the PBL pedagogy in order to demonstrate risk-taking. She "co-planned, and co-taught, and co-assessed an ecosystems PBL with a 4th grade teacher, and…went through the whole process together, [and] then shared reflections with it."

The third-grade team shared that they meet once for math and once for language arts per week as a Collaborative Team, thus emphasizing the importance of planning

much like their Principal. Teachers shared that they are continuously working on refining their CLT cycle, "so when it comes to the planning of the PBL, we can say, 'Oh, yeah, this is where we can implement PBL.'" They admit that they do not always have time, within the hour, to have a full discussion regarding PBL. The team often plans for PBL outside of that time. Quarterly, teams have a planning day whereby they revisit, talk, and reflect on all subject areas. Since PBL is embedded across content areas, the quarterly planning day allows them an opportunity to discuss how they are connecting PBL to their curriculum.

Specialists, including, but not limited to, the librarian, music teacher, and art teacher have been increasingly involved in the planning and execution of PBL opportunities. Their support is well-received, especially as the fifth grade is required to further a technology-integrated project created by the county. The fifth-grade team also has three CLTs: science, math, and language arts. Since accreditation is based on the state test in science, planning for science is especially important. At Bluebird Elementary, there is a science coach to support with PBL endeavors. In addition, the ESOL teacher also participates in the CLT to support the needs of English Learners who represent the majority of students at Bluebird.

Bluebird Elementary appears much more tightly aligned with the traditional CLT cycle than the other two schools that participated in this study. Not only is the framework of the CLT well-defined, including unpacking, common assessment, intervention and extension, as well as celebration and refinement of learning experiences, the consistency

of meetings at this school, with administration and coaches present, is a vastly different dynamic than that of Heron Ridge and Owl Elementary School.

Professional Learning and Development

Offering in-house training to all staff was the beginning of Bluebird Elementary's journey with Project Based Learning. As previously iterated, Mr. Welly had engaged the staff in the importance of teaching through a more authentic lens, and the staff was excited to pursue additional professional development:

> That spring, we hosted a class here, and we had a third to a half of the staff immediately trained, and they started experimenting through Science and Social Studies. The following year, we were a part of the…innovation cohort. We had a PBL team here. The team and I went to the trainings with [other regions]…so we could connect with other people about PBL and what does that look like in the implementation in the school, and to really dig deep about it.

Planning with her teachers, Principal Williams was able to demonstrate to her staff that they are encouraged to take risks and to try something new. It seems that relational trust is a big part of Principal Williams' approach to innovation.

While collaborative planning continued, there was professional development around the Portrait of a Graduate (PoG) attributes. Principal Williams shared that this was a pivotal moment for her staff as they "…learned that we had to step back, and we had to define PBL and PoG because they were too intertwined…" Central office support, including Mr. Welly, came out to assist teams and to reflect on their progress with PBL.

Teachers had an option of planning a new PBL or reflecting on a PBL unit that they were

currently engaged in with their students. Principal Williams shared her pride regarding

the progress her school made regarding PBL practices:

> At the end of that first year, we did a PBL Share Fair, which we were really
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> excited [about] because it highlighted the work of the teachers, and everybody has
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> things to share, from our classroom teachers, our SPED teachers, to our resource
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> teachers, so everybody shared at our share fair. Then, we continued that.

When teachers participate in the PBL Share Fair, they utilize a structure to silently

reflect and provide peer feedback across grade levels. This is followed by a reflection,

discussing PBL efforts at each individual grade. The team then determines what they will

focus on and develop to further enhance their PBL practices. Share Fairs, county course

offerings, and visiting/networking with other schools are the main methods of

professional learning at Bluebird Elementary School. Beyond PBL classes, and cycles of

feedback that are embedded within Collaborative Learning Team meetings, the fifth-

grade team mentioned that they continue to hone their practices based on conversations

between students and teachers, as well as through their commitment to viewing the social

media accounts of colleagues within Nesting County. These teachers emphasized that

social media provides insights into PBL happenings at other schools.

To support continuous improvement regarding the essentials of PBL, professional

development continues to be streamlined, in addition to being timely and specific. One

teacher revealed, "Jackson and Betty have done smaller PDs [professional development]

with our school…one PD they did was on assessment. How to assess during PBL, and that was just an hour, but that was really helpful." Targeted professional development, as a follow-up to the Share Fair, increases teacher efficacy. To further support Portrait of a Graduate skills that lead to enhanced PBL practices, as well as the development of presentations of learning, ongoing professional development that bridges the overlap between these various district aims is ongoing and necessary.

External Conditions

Principal Williams openly remarked about her school's diverse population that evidences many needs, including that a majority of Bluebird Elementary students live in low-income households. She affirmed that her students' circumstances will not prevent her school, and its students, from experiencing and furthering authentic learning due to Nesting County's emphasis on test scores. She shared the following about her direct supervisor and how much his support meant to her when establishing Project Based Learning as a priority in her school. Principal Williams recalled a conversation where she shared that her school was going "full force," and that staff were being trained, and that moving forward with this aim was imminent. Her supervisor returned her enthusiasm:

> He [Assistant Superintendent] was totally supportive of that, looking at our data, and knowing that, you know what, we have a diverse population in many ways, and he was really supportive of that, and then reaching out to us about the [innovation] cohort.

Underscoring this sentiment is a belief that in order to move from traditional to innovative pedagogy, principals require permission in much the same ways teachers do.

Beyond balancing the need to yield strong test scores while also advancing authentic learning, Principal Williams feels there are some elements that would address several challenges she perceives with PBL implementation. Her suggestions include differentiated professional learning to support each teacher's individual journey with PBL, teacher visits to other schools to see PBL in action, additional planning time—or time set aside specifically to plan for PBL—as well as "a database of who to reach out to for authentic audiences."

Several external challenges were shared by members of the third-grade team. Third grade marks the beginning of state testing for students in Nesting County, and as such, there are pressures that exist due to low test scores at this school. Initiatives, such as Global Classroom, and supplementary assessments, appear to compete with PBL implementation. One of the teachers admitted that, "With our population of kids, there's a ton of scaffolding [that is needed], and, unfortunately, that's what ends up taking away from the authenticity of the purpose of the project itself." Such scaffolding incudes frontloading of information, and this prevents students from being able to address specific essentials of PBL independently. Other challenges include not having enough access to online resources due to a lack of technology. Moreover, some of the students at Bluebird have trauma-informed behavior which can impact the emotional availability of

students, thus hindering individual and collaborative learning which are required when participating in Project Based Learning.

Teachers at Bluebird had many thoughtful suggestions to support PBL implementation. Their desire for PBL to be embedded within the pacing guide was beginning to manifest at the time of this study. Teachers commented on existing competing assessments, which they believe to absorb a lot of time and resources. Streamlining assessments, and reducing testing requirements, was mentioned throughout their focus groups. Third and fifth grade teachers would like to see high-quality, on-topic, developmentally appropriate resources, such as articles, available for students that have their specific needs. Since they have so many students who are acquiring the English language, they would like to see resources that support their students' level of language acquisition, while also not appearing to be too childish. A fifth-grade teacher remarked:

> Project Based Learning is a commitment, so once we make that commitment, I don't think that our demographic makes that any different. It's the same thing of conceptual thinking and giving them that time to process. And just being very mindful of that planning time, and how much time they are going to need to work through the pieces and parts of it, and that we might need to do some different accommodations for some of those children.

Seemingly, time constraints present a challenge. Teachers shared that they were always thinking about ways to integrate PBL across the curriculum to maximize instructional time and opportunity for their students.

Additional challenges, associated with the CLT cycle and planning, were expressed—not just having enough time, but the struggles that exist in attending to all aspects of the CLT cycle that need to be addressed to meet the demands of the CLT process. Teachers shared that the online resources that the county offers, such as the PBL site, is inadequate in as much as it shares the initiating event of the PBL but does not share the additional resources needed to carry out the PBL. One teacher described her recommendation:

> I just feel like if we had something similar to what we're sharing in-house, [because] we're not sharing externally, and I think that's the hard part—that it also depends very much on your leadership taking that role, and rolling it out, and giving you the time to think through, and plan it, setting an expectation.

It appears that teachers are aware that much of their implementation efforts have been nurtured by their administration. This teacher also recognizes the ways in which leadership can foster the expectation of PBL within a school, listing several processes that relate to the uptake of new pedagogy.

Summary

Bluebird Elementary School began to implement PBL schoolwide through a foundational course offered to all teachers on-site; this class was subsequently repeated to provide all teachers an opportunity to participate. Continuous alignment between district and school expectations is orchestrated through a goal supported by Bluebird's SIIP, with the emphasis shifting to the acquisition of Portrait of a Graduate outcomes using PBL as

a driver. Follow-up reflective practice with central office specialists continues to provide teachers an opportunity to refine their units and make progress with PBL implementation over the past few years. Principal Williams used a hands-on approach to encourage an interest and investment in PBL. Although teachers have been provided permission to take risks and adopt new pedagogy, some teachers feel uncomfortable with this shift due to the internal pressure they place on themselves regarding state tests. Many students have limited English proficiency, and some teachers shared that behavior can impede collaboration and communication, which is essential to the implementation of PBL in schools.

Cross-Case Analysis: Stakeholder and School Comparisons

The following sections broach my three research questions sequentially. In this cross-case analysis, I address my first question around leadership through an analysis of principal and teacher leadership within and across the three schools. The subsequent Discussion section tackles the use of three organizational routines and practices to support principal and teacher intuition, interpretation, and integration of district expectations associated with Project Based Learning. There were similarities and differences regarding the degree to which organizational practices and routines were used to initiate and continue PBL implementation at these three schools.

Principal Leadership

All three principals were early adopters, even though the coupling of routines and practices to further PBL in their schools varied greatly. Leadership at these schools

provided their staff on-site training, although Owl's Principal Hooper focused on a private partnership to pursue PBL staff development rather than capitalize on county support. This is mainly due to Owl Elementary scaling up PBL practices prior to the adoption of the district strategic plan, as well as due to a significant donation that yielded funding for professional learning provided by his PTO.

Principals Hooper and Williams trained their entire staff as quickly as possible, and simultaneously, whereas Principal Anderson provided classes on-site but did not seem to insist in mandatory training for all staff, like that of her peers. The uptake of PBL at Heron Ridge was not as deliberate. Acknowledging that there are many initiatives in NCPS, Principal Anderson remarked that teachers already have so much to contend with instructionally, and she had the benefit of exploiting the talent that was in her building to encourage teachers to try PBL before other schools began their implementation. As previously mentioned, one of the current district leaders of PBL, Mr. Welly, was formerly an art teacher Heron Ridge and was still working at the school when PBL was first introduced.

Regarding strategic planning, all principals created a PBL SIIP goal, and these goals remained for at least the first two years of implementation. However, all principals realized that their initial goals were not only overly ambitious but measured the number of PBL experiences rather than student outcomes. Recently, there has been a shift from the number of PBL experiences to Portrait of a Graduate outcomes for students. In addition, there are teams of teachers at each school that are furthering a pilot that supports

portfolio presentations across grade levels. These presentations encourage students to self-assess and monitor their progress regarding the acquisition of Portrait of a Graduate skills.

A significant discrepancy among the schools was the varied interpretation of what a Collaborative Learning Team is and how it was, or was not, utilized to support teacher teams with their planning. Principals Hooper and Anderson seemed to provide more autonomy regarding planning in general, while Principal Williams shared that CLTs at her school are aligned with all aspects of the CLT planning process. Bluebird Elementary is a Title I school, and this means that leadership and teachers are beholden to specific requirements, expectations, and oversight that non-Title I schools do not experience. All principals agreed that most of the planning for PBL takes place outside of CLTs, with Principal Hooper providing paid planning time over the summer to enable his teachers to plan for PBL. This planning time is also part of his professional development budget funded by his PTO.

Teacher leadership

In each school, teachers understood the intent of PBL, even if they were unaware of planning structures and strategic goals associated with PBL. Teachers at all three schools had difficulty explaining the acronym, CLT, although Bluebird Elementary teachers could describe the CLT cycle. The "C for Collaboration" was confused with "Cooperative."

Planning time was not well-defined at two schools, and this was indicated by Owl and Heron Ridge Elementary teachers conflating common planning time with the formal planning process that defines a CLT meeting. Teachers at these schools remarked often about the autonomy that they were provided by their administration, including the use of planning time to support any need/content area, and not necessarily language arts or math. Mandated team planning time was one day per week, and less oversight from administration was noted by teachers and administration. While Owl and Heron Ridge required quarterly data dialogues, Bluebird appeared to be more data-driven, discussing data on a more frequent basis as characterized by the frequency of their CLT process. Moreover, administrative presence at CLT meetings seemed more consistent at Bluebird, as Principal Williams shared that she and the instructional coach attended the majority of CLT meetings. Principal Williams also shared that her fifth grade team had three mandated CLTS, and these included language arts, math, and science. As science scores impact school accreditation, Bluebird must focus on ensuring adequate student progress in subject areas that are not a concern for Owl or Heron Ridge.

Teachers at all three schools were aware of expected outcomes regarding PBL, even if they could not clearly articulate prior or present PBL goals associated with their school's strategic plan. For example, Heron Ridge teachers were unable to define their school's PBL goal, but their inability to state the goal did not seem to diminish their investment in PBL. Rather than feeling obligated to craft a certain number of opportunities, Heron Ridge teachers mentioned how all students participated in the same

PBLs within their grade level, with no distinction provided for advanced or general education students. This was the same for Bluebird Elementary. At Owl, however, students participated in different PBL experiences, and the amount of PBL experiences was fewer for advanced students since it was shared that inquiry was provided using a variety of resources and strategies, and not simply through a PBL approach. While data was uploaded at each school to document progress toward SIIP metrics, the responsibility of data collection and analysis seemed less important to teachers than the creation and implementation of PBL units.

Teachers, across all school sites, shared similar remarks as they reflected on professional learning and development opportunities. Since expectations for PBL were set by administration at all schools, this meant that teachers needed to appropriate a portion of their common planning time to plan for, and discuss, the delivery of a PBL unit. New teachers at each school felt that this practice of revisiting and refining PBL units helped to develop their understanding of PBL, and while each school developed an on-site PBL team, they often relied on their teammates at their grade level to support their practice. However, PBL lead teachers were able to provide implementation support, if needed.

In addition to the grade level collaboration, new teacher hires at Owl are provided an opportunity to observe PBL in practice before the start of the year. This was enacted by Principal Hooper as he began to see a need as a result of the creation of specific PBL classes. When there was staff turnover, and he had to hire, he wanted to make sure that

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his teachers understood the expectations of a PBL classroom. Teachers at Owl Elementary shared that understanding PBL was required before working in such a classroom.

Regarding schoolwide PBL expectations, teachers at all three schools expressed that their principals were clear regarding instructional outcomes associated with PBL, and teachers were often made aware of county course offerings to further develop their practice.

In this next section of my capstone, I will discuss the findings of my study related to my second and third research questions and their connection to implementation literature, my conceptual framework, and my assumptions. I will make recommendations for future action.

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Discussion

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The discussion will interpret my findings for my second and third research questions around organizational routines and conditions of implementation in light of the existing literature, my conceptual framework, and my initial assumptions regarding the themes that were revealed by my research. These themes include balanced autonomy, coupling of district aims, transformational leadership, collective efficacy and capacity building, instructional coherence, and relational trust. Implications for my research, in addition to any limitations, will precede recommendations for future study.

Research Question Two: Organizational Routines

This section discusses three organizational routines and how they were intuited, interpreted, and integrated to support the implementation of Project Based Learning. The School Innovation and Improvement Plan is often used to set the direction of a school and enables the development of annual goals associated with schoolwide endeavors. Collaborative Team Planning enables teachers to discuss the what and how of PBL, including selection of content, preparation, and delivery. School embedded Professional Learning and Development can be used to increase teacher efficacy and support ongoing capacity building which, in turn, can lead to sustainable implementation of new practices in schools.

Table 4 provides a summary of the organizational routines and practices that each school integrated to support PBL implementation. These findings directly correlated to research question 2 and the third level of my conceptual framework.

Table 4

Cross Case Analysis of Organizational Routines and Practices in Schools

	Owl	Heron Ridge	Bluebird
Strategic Planning	Implementation began prior to NCPS's strategic plan release	Goals for PBL implementation were included in SIIP	Goals for PBL implementation were included in SIIP
	Goals for PBL implementation were included in subsequent SIIP	Discrepancy between grade levels regarding expectations for SIIP goal	Grade level teachers seemed to understand expectations for PBL.
Collaborative Learning Teams	Loosely coupled to PBL planning	Loosely coupled to PBL planning	Tightly coupled to CLT cycle;

	Most PBL planning outside of CLTs	Most PBL planning outside of CLTs	Most PBL planning outside of CLTs
	Summer planning		
School-embedded Professional Development	BIE	PBL workshops	On-site county PBL courses & Share Fair
	PBL lead teachers Central Office visits occasionally to support	On-site county classes County PBL support in school through PBL lead teachers who teach courses	Administrator team-teaching
			PBL lead teachers
	Participation in innovation/assessment project as well as presentation pilot to support PoG outcomes	Participation in innovation/assessment project as well as presentation pilot to support PoG outcomes	Participation in innovation/ assessment project as well as presentation pilot and Global Classroom to support PoG outcomes

Note. NCPS (Nesting County Public Schools); PBL (Project Based Learning); SIIP (School Innovation and Improvement Planning); CLT (Collaborative Learning Team); BIE (Buck Institute for Education); POG (Portrait of a Graduate)

Intuiting and Interpreting the District Strategic Plan

Setting Directions. One of the more distinguishable findings of this study is the disparity that existed among the three principals regarding the coupling of the strategic plan, Spark, with school-based decision making. This finding is particularly notable as the district strategic plan was meant to guide principal decision making. While the plan was not ignored altogether, and principals acknowledged the importance of Project Based Learning as a desired outcome to advance students as thinkers and learners, Spark did not appear to be the driving force that prompted these administrators to advance PBL within their buildings.

According to Ikemoto et al., (2014), balanced autonomy allows principals to have discretion to meet the needs of their schools through the provision of "necessary tools, support, and oversight" from central office (p. 3). Such autonomy is the result of "…expectations that are clearly articulated, supported, and monitored to ensure that progress is being made toward achieving them" (p. 17).

When the strategic plan was originally developed, Dr. Palermo, Assistant Superintendent for Instruction, admitted that very little input from stakeholders was acquired from principals and central office instructional leaders, nor was the strategic plan, or strategic thinking, central to principal professional development. Without central office fully understanding the principal's perspective and each school's diverse needs, and with very few dedicated tools and resources to support with the adoption of new pedagogy at the time of Sparks' introduction to the NCPS community, principals were positioned to further PBL on their own, or wait for support from central office. During Spark's initial implementation, support was to be provided to schools centrally, but this support was not simply for PBL, but for the several aims that the county was enacting simultaneously. While there was a three-year implementation plan associated with PBL, it seemed that there was not nearly enough support to transform 200 schools. Unfortunately, Ikemoto and her colleagues contend that this needed support does not often manifest, due to a lack of mechanisms or opportunity for feedback between central offices and schools to share ideas and discuss continuous improvement. She concludes that the bigger problem schools face is that they are unable to fully realize the

"partnership culture" that could benefit and strengthen implementation initiatives, specifically instructional coherence between central offices and schools. School systems are either "fully decentralized or completely centralized" (p. 17). In this case, and according to Principal Anderson, NCPS was attempting to be both, and with limited success. In lieu of balanced autonomy, schools were simply autonomous, as principals determined how and when PBL would manifest in their schools. Principals decided whether they reached out to central office for support and determined to what extent they were invested in PBL capacity building. While NCPS may not view itself as functioning as a decentralized system, the county began PBL endeavors without defining the steps or support that schools could access to make PBL a reality. Despite the adoption of the district strategic plan and PBL directives from the county, each school moved at its own pace, some faster than others, in their pursuit of extending PBL to all students, leading to the conclusion that expectations championed by the district strategic plan seemed to be a secondary consideration when making decisions that would impact individual schools and their instructional priorities. As evidenced, Owl Elementary began its adoption of PBL a year prior to the county's strategic plan being introduced, and Heron Ridge, located in the same geographic area as Owl, followed less than a year later. Their decision to couple PBL goals with their School Innovation and Improvement Plans was a direct result of a shared interest in forwarding authentic learning experiences to support student outcomes, thus indicating that the district strategic plan, while not an afterthought, was not the initial impetus for their instructional decisions.

Additional conditions that supported the uptake of PBL at these schools included access to professional learning opportunities from external organizations, such as the Buck Institute for Education, and the presence of school staff that were early adopters and already invested in inquiry-based pedagogy before implementation began.

While affordability of outside professional development is an issue for schools that are less affluent, once Bluebird Elementary began its implementation, having access to only county resources, it quickly picked up momentum with PBL implementation according to Principal Williams. Therefore, it seems that while access to funding can translate into unique professional learning opportunities for staff as well as additional planning time over the summer, a belief and commitment to innovation appears to be more important than outsourcing PLD. All three principals touted PBL as a strategy that can support all learners, regardless of individual students' strengths and needs, and as a result of their steadfast ownership of this belief, their teachers furthered these endeavors in their classrooms. Such transformative leadership "implies the ability to foster capacity and personal commitment, transforming followers and increasing their motivation, performance, and ability to help one another and their organization" (Goddard et al., 2010, p. 339).

Taking a more guarded, and yet successful approach to implementation, Principal Williams shared that she sought region support to move forward with PBL due to accreditation concerns; however, once her supervisor provided permission, Bluebird began its PBL journey in earnest. Therefore, while it is important to emphasize that the

leadership beliefs and practices at all three schools were the initial impetus for the uptake

of new pedagogy, at Bluebird Elementary, leadership beliefs about the importance of

access, equity, and instructional opportunity may have factored in more heavily when

promoting innovation due to the competing demands at Principal William's school. This

may be Principal William's rationale for co-teaching with her staff to strengthen their

belief that teaching in innovative and creative ways is not only encouraged, it is

necessary. Similarly, Moolenaar et al. reports that "Leadership behavior is important for

nurturing and stimulating a climate in which teachers are more likely to engage in risk-

taking and the development of novel solutions," (2010) and efforts to promote Project

Based Learning at Bluebird were not deterred by challenges, just deferred.

Integrating Organizational Routines and Practices

Developing People. I examined school-embedded professional learning and

development opportunities that were continuous, collaborative, and often included

centralized support. It is important to note that by the time I completed my research for

this study, the county was three years into its PBL professional development. Therefore, I

was able to obtain insights as to how schools evolved with their professional learning

endeavors in light of new supports provided by NCPS.

It is suggested "…that principals must allocate resources to support school-based

and job-embedded professional development for teachers" (Blankstein et al., 2007;

Drago-Severson, 2009; Hord & Sommers, 2008; Roy & Hord, 2003, p. 19), including

informal and formal interactions, sharing of instructional strategies, examining student

work, and participating in cycles of feedback (Drago-Severson, 2009). While one school offered coursework through the Buck Institute, two of the schools relied more heavily on PBL resource specialists and county-developed courses to train their staff in PBL practices on an ongoing basis. Teachers within all three schools were encouraged by their administration to participate in county courses hosted at their school, or within the county, and were required to share new understandings with their colleagues through staff meetings, workshops, or share fairs. All schools participated in a cohort to develop teacher capacity regarding PBL and its relationship to assessment practices. Participation in this cohort resulted in all schools' subsequent engagement in the Presentations of Learning pilot the following year.

The emphasis on professional learning within these schools supports the notion that these schools function, in many ways, as Professional Learning Communities (PLCs). School staff work together to ensure that students learn, collaborate to improve classroom practices, are results-oriented, and hold one another accountable for continuous improvement. These practices are quintessential to capacity building, which is not only a "lever for developing coherence," (Fullan & Quinn, 2016, p. 56) but support collective efficacy, as well. Despite professional development sometimes being perceived as "fixing individuals," a systematic approach, with follow-up, will lead to deeper levels of capacity building and "create a foundation for sustainable improvement" (Fullan & Quinn, 2016, p. 57).

In addition, PLCs operate under the assumption that the key to improved learning for students is continuous, job-embedded learning for educators (DuFour, et al., 2010). Each PLC is then organized into a CLT that meets regularly (typically weekly) to focus on student learning, whereby members are held mutually accountable (DuFour, et al., 2010). This nuanced shift in terminology, from PLC to CLT, acknowledges my original conceptual framework's focus on grade level CLTs as a structure to support innovation. However, while this is not an incorrect assumption on my part, the term, CLT, is too narrow to encapsulate the focus on action research and learning, not just teaching, that is taking place across grade levels in these schools. A conceptual framework that is informed by both the presence of PLCs and CLTs would illustrate my findings in a more accurate way.

Research Question Three: Institutionalizing PBL Practices

In this section, I compare the conditions of implementing PBL at each of the three schools. I examine how each school's SIIP drew attention to PBL and the conditions of implementation.

Structuring the Workplace. Using each site's School Innovation and Improvement Plan to demonstrate how principals and teachers focused learning outcomes on PBL, it was noted that the original emphasis of these goals was to complete a certain number of PBL experiences. Subsequently, PBL goals have been refined and now focus on the acquisition of Portrait of a Graduate attributes and skills, using PBL and other inquiry-based learning opportunities as a means to promote the skills associated with

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communication, collaboration, critical and creative thinker, global and ethical citizenship, as well as goal-directed and resilient learner. Each of these schools enacted goals to support PBL implementation for at least two years, including the year they initiated the shift in pedagogy, demonstrating the assumption that schools use their vision, articulated in their SIIPs, to enhance student outcomes (Conway & Andrews, 2015).

Another striking variance between schools was the teachers' general understanding, or misunderstanding, of the purpose of Collaborative Learning Teams. As stated previously, CLTs follow a recurrent structure that require teachers to engage in cycles of inquiry where all members are accountable for their team's learning (DuFour, 2004). Only one school, Bluebird Elementary, had teachers who could articulate the elements of the CLT cycle. This inconsistency regarding CLT practices among schools affirms that CLTs may not be as widely used as a mechanism for adoption of new pedagogy. Even at Bluebird, where CLTs were well-established, most PBL planning happened outside of the CLT.

PBL planning was separate from the CLT cycle at Owl and Heron Ridge Elementary, too. Principals at these schools were very open about their loose coupling of CLTs in general and encouraged their teachers to plan or refine PBL units during their common planning time. There were inconsistencies within each of their buildings as to how often teachers met with their teammates, and this was conveyed by administrators and teachers alike. Despite not having a well-articulated CLT schedule, there was no doubt that these teachers were prepared for instruction and took pride in their

responsibilities toward their teammates and students. Much comradery was evident within both schools during their focus groups, and morale appeared to be high. Teachers in Owl and Heron Ridge often referred to the trust their principals extended, and this relational trust appeared to contribute quite heavily to their positive regard for their administration and one another. Responses in focus groups across all three schools led to this generalization. Supporting the notion that relational trust supports school improvement, Bryk and Schneider (2003) believe that when school communities are synergistic, reform initiatives will take hold more quickly due to trust overpowering any concerns about school change. Professional trust begets teachers who feel safe to try new practices.

Therefore, whether planning for PBL occurs within the CLT or PLC, well-defined planning processes support consistency and can be easily replicated by teachers across grade levels and schools. Praxis tools, such as protocols or processes, can help teachers realize and implement a deeper understanding of the elements of PBL and support collective efficacy. For this kind of learning, praxis tools must complement conceptual tools. Praxis tools embed theory about good teaching into material resources or strategies that guide planning, instruction, analysis of learning, and reflection (Windschitl, et al., 2011).

Recommendations

As a result of the findings, I have crafted several recommendations that reflect the ways NCPS can support school leadership in their efforts to understand and translate a

district aim within their school. Capitalizing on these recommendations may reduce

concerns regarding equity and access to PBL and other innovative learning experiences.

As with any district aim, when principals and teachers consistently use school-embedded

routines and practices to promote organizational learning, there is a greater chance that all

students will be provided access and opportunity to authentic, inquiry-based learning

experiences (Spillane1 et al., 2011).

Recommendation One: Principals should be provided mandatory training

regarding the elements of systems thinking and change management to support

implementation, including an opportunity to use a variety of strategic planning tools

and resources to support the uptake of any new district aim.

Current offerings for PBL workshops focus on the methodology of PBL and not

the tools and resources required to leverage change and support the uptake of PBL in

schools. During my interviews, principals were able to share their own processes for

enacting change within their school, but did not leverage, or maximize, routines and

practices that might prove beneficial in the adoption of new pedagogy. For example,

there was no process in place, beyond School Improvement Planning, to engage in cycles

of feedback to evaluate teacher progress with PBL implementation. Understanding the

ways that principals can engage staff in iterative processes to support instruction,

including planning, executing, reflecting, and refining may lead to deeper implementation

outcomes for teachers and schools. These factors of organizational innovation connect the

"continuous learning process with supportive environmental conditions, promoting

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dynamic knowledge creation and organizational innovation" (Song & Chermack, 2008).

Furthermore, strategic tools, such as logic models, can help principals reorganize their

time, talent, and resources to support short and long-term expectations that they have for

PBL or any new district aim. Such systems thinking resources can be referred to as

"simplification systems," providing "rules and decision frames that help organizational

actors such as teachers and principals translate complex problems into manageable

forms" (Honig, 2004).

   **Recommendation Two: The district should create administrator networking
opportunities through the creation of Principal Professional Learning Communities
(PPLCs). PPLCs can exist between schools that have similar problems of practice
that impact implementation of innovation, and they can be run with, or without, the
assistance of central office instructional administrators who can lend instructional
guidance.**

   Principals frequently meet with schools and leadership in their immediate area,

but have few, if any, opportunities to meet with colleagues in other parts of the county.

These are missed opportunities for networking and professional development. If school

leaders are permitted to discuss, for example, their school's Instructional Guidance

Infrastructure, they could learn how their colleagues address "content standards,

curricular materials, student assessments, formal system and organizational positions

(e.g., instructional coaches), and organizational routines" to monitor instruction (Cohen

et, al. 2013; Spillane, et al., 2011, p. 2). The guidance and facilitation of a PPLC by a

central office leader or instructional specialist would increase the coherence between central office and schools, too. Central office staff could help principals "…incorporate instructional leadership into their own practice…" and play a more hands-on role in "the principals' learning process" (Honig & Rainey, 2014, p. 2).

Recommendation 3: The district should provide a dynamic professional development model that is responsive to individual school and teacher needs.

Schools require instructional leadership, and, currently, there are not enough PBL specialists in NCPS to support 200 schools with systematizing and sustaining innovation. Some principals fund additional instructional positions through a reallocation of their budget resources, but this is not an equitable means to support innovation in schools.

Working together with school leadership to frame innovation in their buildings can take the burden off central office who is already taxed by limited resources, human and financial. An Innovation lead teacher could support school administration and peers in facilitating professional learning, CLTs, or other planning protocols to support PBL, and provide teachers non-evaluative, timely feedback to help build capacity and reflect on progress. To support with continued capacity building and sustainability of innovation, an Innovation Team at each school could be trained initially, centrally—and possibly after school—to include the administration, technology coach, and other resource teachers who support instruction. This team would then provide timely and targeted school-embedded professional learning throughout the year to support each stage of implementation (with PBL or another district aim) to foster effective practice. This

would remove the need for substitutes, as paying teachers hourly after school, in lieu of a during-the-day cohort, and/or offering teachers credit for their hours, is less of a financial burden. Afternoon and evening development opportunities also diminishes any impact to the momentum of instruction. If this is not possible due to competing demands, virtual PD could be provided on an asynchronous platform.

Recommendation Four: Time and funding should be provided for teacher teams to visit master teachers/Labsites to observe highly effective PBL practices.

Currently, funding is being utilized to support cohorts of teachers who meet throughout the year, and during the school day, to develop PBL units of study. While this endeavor supports teacher efficacy and implementation efforts, it places a burden on teachers who then need to develop substitute plans to facilitate their time away from their classroom. Similarly, teachers new to PBL, and possibly to teaching, need the opportunity to observe their peers engaging students in all aspects of the PBL process so that they understand the interplay between classroom management, facilitation of learning, and assessment.

Teachers need to be "encouraged to be more reflective…In the early stages of innovation diffusion, teachers gain knowledge of the innovation and synthesize information that helps them make decision and plan for possible adaption" (Wu, et al., 2015). Time out of the classroom could be minimized using virtual technology, such as SWIVLs (observation cameras), Google Meets, or other online resources, for the pre and

post-observations, or possibly even the visit. This would reduce the need to pull teachers from their classrooms, as well as the need for, and cost associated with, a substitute.

Table 5 presents the recommendations mentioned above, along with the findings from the study and their correlate to the research that supports them.

Table 5

Sources of Evidence for Recommendations

Research Question	Recommendations	Study Findings	Other Research
RQ1: Intuiting and Interpreting RQ3: Institutionalizing	Principals should be provided mandatory training regarding the elements of systems thinking to support implementation.	In all 3 schools, there were inconsistencies in SIIP, CLT/planning, and resource optimization. PLD existed in all schools, but ongoing support could be strengthened.	Autonomy is the result of "…expectations that are clearly articulated, supported, and monitored to ensure that progress is being made toward achieving them. (Ikemoto et al., 2014)
RQ1: Intuiting and Interpreting RQ3: Institutionalizing	The district should create administrator networking opportunities through the creation of Principal Professional Learning Communities (PPLCs)— supported by central office facilitation.	Central office leadership mentioned that instructional coherence between central offices and schools needs to be strengthened.	Ikemoto and her colleagues (2014) contend that a partnership culture does not often manifest, due to a lack of mechanisms or opportunity for feedback between central offices and schools to share ideas and discuss continuous improvement.
RQ1: Intuiting and Interpreting RQ2: Integrating RQ3: Institutionalizing	The district should provide a dynamic professional development model that is responsive to individual school and teacher needs. An Innovation Lead at each school could support with capacity building.	Teacher leadership was not a major factor in implementation. Teachers complied with implementation, but PBL leads were not well-defined, and teachers need a sustainable support system to innovate.	"Principals must allocate resources to support school-based and job-embedded professional development for teachers," (Blankstein et al., 2007; Drago-Severson, 2009; Hord & Sommers, 2008; Roy & Hord, 2003, p. 19) including informal and formal interactions, sharing of instructional strategies,

Research Question	Recommendations	Study Findings	Other Research
			examining student work, and participating in cycles of feedback (Drago-Severson, 2009).
RQ2: Integrating RQ3: Institutionalizing	Time and funding should be provided for teacher teams to observe master teachers/Labsites to observe highly effective PBL. practices. (in-person or virtually)	Observations can take the place of cohorts that take teachers out of their schools for an entire day, disrupt the momentum of instruction, and are costly.	"…a systematic approach with follow-up will lead to deeper levels of capacity building and "create a foundation for sustainable improvement" (Fullan & Quinn, 2016, p. 57).

Possible Impediments to Recommendations

The previous recommendations were developed to address the inconsistency in the PBL implementation processes gleaned from my interviews with principals and teachers. Literature associated with PBL, implementation, and school change supported my recommendations.

Need to redesign principal professional development. Without providing principal professional development at times when all (or most) administrators are present, inconsistencies in the understanding and translation of a district aim will continue to prevail. Restructuring some aspects of principal professional development to include opportunities to network outside of one's geographic area may result in collaborative pairings of schools with similar problems of practice.

Funding. An Innovation lead at the school level can reduce the need for costly central office support. If training needed to occur, paying a teacher hourly, after school,

or providing recertification to support in this leadership capacity, is far less costly than paying for a substitute. In large school systems, it behooves central office and leadership to find innovative ways of organizing professional learning opportunities to maximize impact and place the least burden on teachers and schools. Costs may be incurred to procure technology, such as a Swivl, to support video observations.

Summary

This section of my capstone outlined the findings from my research questions as well as highlighted my recommendations to close the implementation gap that exists between schools. The final section of my capstone is my action communication to district leadership regarding my four recommendations.

SECTION FIVE: ACTION COMMUNICATIONS

In the preceding section, I documented my findings and presented recommendations associated with my research questions and the current literature on implementation and organizational routines. In this section, I will explain the action communication that will be shared with the district that sponsored my research. This communication will be distributed to central office leadership that supports instruction, as well as those in charge of principal professional development. It is important for me to share my recommendations with a diverse audience due to the inconsistencies my research revealed about central office leadership's perception of implementation and the actual leadership beliefs and practices that exist in schools. Beyond the expectation that principals consider the aims outlined in the district strategic plan when crafting their school's vision, the county presumes that principals leverage organizational routines in order to innovate; while organizational routines and practices existed across all schools, including goal setting, collaborative planning, and professional development, they were not used in the same way, or to the same level of fidelity. My recommendations addressed how the district could support coherence between central office and schools, as well as how to build capacity and congruence in teachers regarding the adoption of new pedagogy.

The communications include a briefing memo and a PowerPoint presentation that unpacks the recommendations from my research.

Briefing for District Leadership

**BRIEFING NOTE FOR THE ASSISTANT SUPERINTENDENT
OF INSTRUCTION, COORDINATOR, and DIRECTOR OF
PROFESSIONAL DEVELOPMENT**

Subject: Project Based Learning Implementation, Recommendations based on research conducted in spring, 2019

Issue: This research study investigated how Nesting County Public Schools leadership, including principals and teachers, understood and translated a district aim, Project Based Learning, in 3 elementary schools. The assumption underlying my research was that all schools utilized their School Improvement Plan, Collaborative Learning Teams, and/or school-embedded professional learning and development to further a district aim. There was also an assumption that internal and external conditions impact the uptake of new pedagogy in schools.

Background: This study focused on 3 elementary schools, one affluent, one moderate, and one with a high incidence of poverty. Central office leadership and principals participated in semi-structured interviews, all teachers were provided a survey, with follow-up focus groups administered for teachers in grades three and five. The interviews were then analyzed to examine the organizational routines and practices that school leadership leveraged to support the implementation of Project Based Learning.

Current Status: During the first two years of implementation, School Innovation and Improvement Plans (SIIP), within all 3 schools, included a goal associated with Project Based Learning. SIIP Goals were originally developed to monitor how often PBL experiences were provided for students. After two years, teachers at these 3 sites informed their principals that the number of PBL units was not realistic. As a result, goals shifted to focus on student outcomes, such as communication and collaboration. This shift coincided with school participation in a project that included a presentation of learning, whereby students demonstrated their acquisition of Portrait of a Graduate attributes and skills. Collaborative planning, not necessarily planning in accordance with the CLT cycle, was utilized to design PBL units. One school was able to fund additional paid planning over the summer. There was evidence of school-embedded professional learning in each building, and classes, whether privately funded or through the county, were provided to increase teacher efficacy regarding PBL. Principals did not feel that they were required to enact specific routines or practices to further PBL in their buildings, although each of these schools used variations of the same routines at their schools. Principals utilized central office support to refine PBL units and to encourage reflective practice among their teachers. Ongoing professional development, and an

emphasis on inquiry-based learning, has maintained in all 3 schools, regardless of the presence of a goal in their SIIP.

Recommendations will include differentiated professional learning for principals that targets strategic planning, as well as funding to support several additional innovation specialist positions to assist within each region of the county.

Recommendations: The following recommendations support the implementation of any districtwide innovation.
- *Recommendation One:* Principals should be provided mandatory training regarding the elements of systems thinking and change management to support implementation, including an opportunity to use a variety of strategic planning tools and resources to support the uptake of any new district aim.
- *Recommendation Two*: The district should create administrator networking opportunities through the creation of Principal Professional Learning Communities (PPLCs). PPLCs can exist between schools that have similar problems of practice that impact implementation and can be facilitated with guidance from central office instructional leadership.
- *Recommendation 3*: The district should provide a dynamic professional development model that is responsive to individual school and teacher needs. An Innovation Lead at each school could support school administration and teachers in facilitating professional learning, CLTs, or other planning protocols to support PBL, and provide teachers non-evaluative, timely feedback to help build capacity and reflect on progress. To support with continued capacity building and sustainability of innovation, an Innovation Team would provide timely professional learning throughout the year to support each step of implementation and foster effective practice.
- *Recommendation Four*: Time and funding should be provided for teacher teams to visit master teachers/Labsites to observe highly effective PBL practices. If funding is limited due to budget constraints, virtual observations can take place during the school day and often without the need for a substitute.

Considerations for Recommendations: In consideration of these recommendations, please make note of the following factors that may impact their implementation or feasibility.

- *Need to redesign principal professional development*: There are inconsistencies among the ways principals understand and translate district aims. Ensuring that all principals receive professional development to support strategic thinking may require that this learning take place during designated countywide principal meetings. Restructuring principal professional development to support principal

pairings across the county, rather than within their geographic area, will require the county to understand what problems of practice exist at each school that may hinder implementation efforts.

Funding: Providing an Innovation Specialist within each geographic region, who will support the development of an Innovation Lead and team at each school, requires financial support, but will afford the instructional oversight that is needed to faithfully implement a district aim. Seeking unique solutions to address the need for substitutes to cover classes of teachers that are observing in other schools need to be prioritized. In lieu of paying for substitutes, payment for in-house coverage may be more cost-effective and appreciated by staff.

Summary: Recommendations that redesign principal and teacher professional development, as well as provide ongoing implementation support, should be considered to guarantee that all schools implement new pedagogy with fidelity.

Slide Show Presentation

Key Learnings from Literature Review

School level leadership needs understand how to promote ins... ...al change. (Fullan, 2014)

Harnessing d... ...s such as school improvemen... ...aborative team planning, ...ol-embedded professio... ...ng can help. (Becker & Zirpoli, 2008)
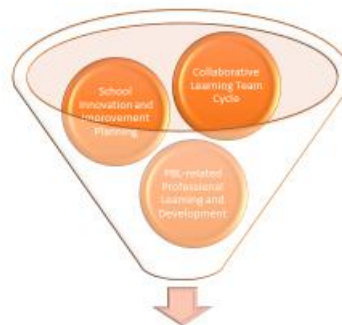
Schools and central office need to work ...gether to improve instructional ...herence to negotiate district demands with the needs of schools. (Honig and Hatch, 2004)

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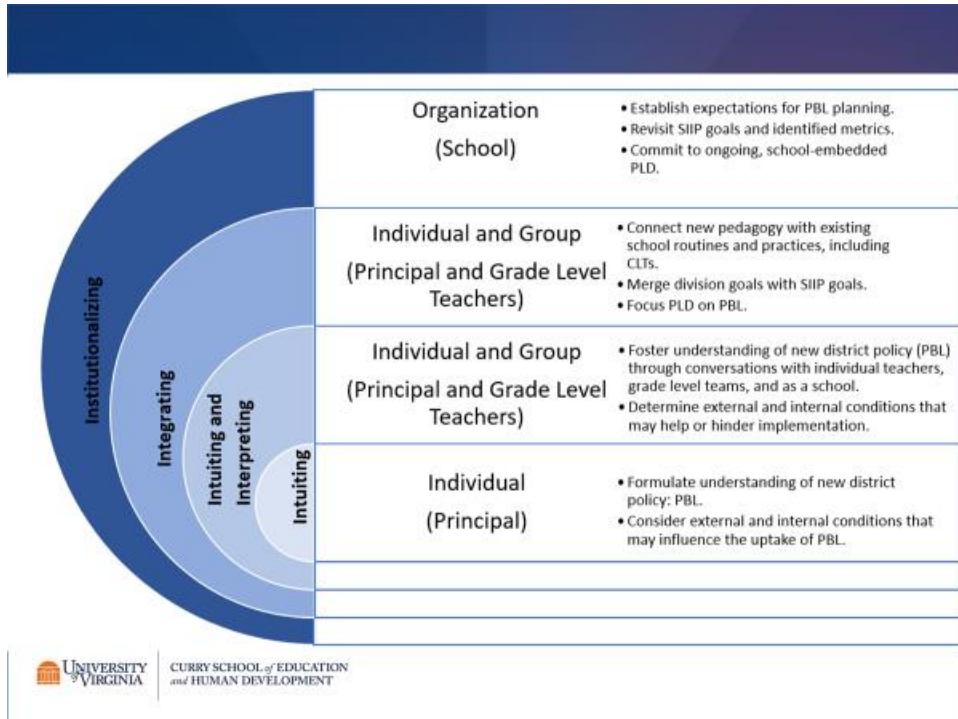

Purpose of Study

To study one facet of the district strategic plan; specifically **how the learning model was understood and implemented by school leadership and teachers to adopt Project Based Learning** to promote the acquisition of Portrait of a Graduate skills.

School Innovation and Improvement Planning

Collaborative Learning Team Cycle

PBL-related Professional Learning and Development

Adoption of PBL

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Organization and PBL Implementation Levels

Level	Role	Activities
Institutionalizing	Organization (School)	• Establish expectations for PBL planning. • Revisit SIIP goals and identified metrics. • Commit to ongoing, school-embedded PLD.
Integrating	Individual and Group (Principal and Grade Level Teachers)	• Connect new pedagogy with existing school routines and practices, including CLTs. • Merge division goals with SIIP goals. • Focus PLD on PBL.
Intuiting and Interpreting	Individual and Group (Principal and Grade Level Teachers)	• Foster understanding of new district policy (PBL) through conversations with individual teachers, grade level teams, and as a school. • Determine external and internal conditions that may help or hinder implementation.
Intuiting	Individual (Principal)	• Formulate understanding of new district policy: PBL. • Consider external and internal conditions that may influence the uptake of PBL.

School Descriptions

*All schools participate in the county's pilot to promote PoG attributes and skills through authentic, inquiry-based assessment.

	Number of Students	Demographics	Other Information
Owl Elementary (K-6)	1000+	30% Advanced 6% ELs 9% SPED Less than 4% FRL	Generous PTO 1:1 PBL Classrooms 5% Mobility
Heron Ridge Elementary (PS-6)	~1100	34% Advanced 20% ELs 11% SPED 23% FRL	Young Scholars Program Art Tchr→PBL Specialist 13% Mobility
Bluebird Elementary (PS-6)	~400	17% Advanced 56% ELs 15% SPED 62% FRL	Young Scholars Program 22% Mobility

Research Design
Case Study

Three Schools
- Affluent
- Moderate
- Title I

Data Collection Activities	Participant Group	Time for Each Participant to Take Part in this Activity	Planned Data Collection Window
Semi-structured interview	Central Office Staff and School Principals	Less than an hour	2/4/2019- 2/15/2019
Online Survey	Teachers	10 minutes	2/18/2019- 3/1/2019
Focus Groups	Grades 3 & 5 Teachers	1 hour	3/4/2019- 3/15/2019

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Data Analysis

Cross-Case Synthesis

Data Analysis	Central Office	Principals	Teachers
Semi-structured interview	• Thematic Analysis • Inductive Reasoning	• Thematic Analysis • Inductive Reasoning	• Thematic Analysis • Inductive Reasoning
Online Survey	n/a	n/a	Descriptive Statistics
Focus Groups	n/a	n/a	• Thematic Analysis • Inductive Reasoning

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Research
Questions

RQ1: How does school leadership, in 3 elementary schools, interpret recent district changes around Project-Based Learning (PBL)?   Intuiting and Interpreting

RQ2: In what ways do the following organizational routines and practices support the implementation of Project Based Learning in the elementary school?   Integrating

RQ3: In what ways do external and internal conditions, such as district requirements and school demographics, influence leadership practices regarding the uptake of PBL?   Institutionalizing

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RQ1 Key Findings:
Intuiting and Interpreting New Policy

- Implementation viewed as an independent effort; central support exists, but not enough staff to support all 200 schools

- Theory of Action irrelevant to PBL implementation; four years too late

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RQ2 Key Findings:
Integrating Routines and Practices

- **SIIP**: Goals exist in each school; not concerned about the drivers for PBL; rather the number of PBL experiences.

- **CLTs**: Not connected to PBL. Planning took place outside of CLTs—if CLTs were in place. All schools exhibited many aspects of PLCs, with or without CLTs.

- **PLD**: Biggest investment among principals; paid professional learning, as well as courses offered by county.

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RQ3 Key Findings:
Institutionalizing Conditions

- Implementation **not impacted by demographics**
- Affluent school had **more choice** regarding PLD decisions
- **Greater autonomy** in schools where high-stakes testing and accreditation is not a concern.
- High levels of **relational trust** between teachers and administration in all buildings
- There was **more oversight** and **hands-on** support in Title I school.

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District Actions & Considerations

Recommendations that redesign principal and teacher professional development, as well as provide ongoing implementation support, should be considered to guarantee that all schools implement new pedagogy with fidelity.

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Appendix A: Semi-Structured Interview Questions for Central Office Leadership

What is your position in the county? How many years have you been in this role?

Were you involved in the creation of the district strategic plan, Spark? If so, in what capacity?

According to the district strategic plan, Spark, all schools will have developed and implemented *inquiry and problem/project-based learning opportunities, embedded in curriculum pre-K-12,* by 2017-2018. To better understand how you interpret and address district change around Project Based Learning, please answer the following questions:
1. How would you define Project Based Learning? Can you give me an example?
2. What do you think the role of central office is in sustaining the implementation of Project Based Learning?
3. What do you believe school-level implementation of PBL entails?
4. What is your role in the implementation of Project Based Learning in the elementary schools?
5. What organizational practices and/or routines do you initiate or participate in to support PBL implementation?
6. What resources (e.g. professional learning and development, fiscal, materials, personnel, time, structures) are in place to support implementation? What curricular areas do these resources support?

Appendix B: Semi-Structured Interview Questions for Principals

How many years have you been a principal? In your current school?

Were you involved in the creation of the district strategic plan, Spark? If so, in what capacity?

In what ways, if any, has the district strategic plan influenced your decision-making at the school level? With regard to your school's mission and vision?

According to the district strategic plan, Spark, all schools will have developed and begun to implement *inquiry and problem/project-based learning opportunities to be embedded in curriculum pre-K-12* by 2017-2018. To better understand how you interpret and address district change around Project Based Learning, please answer the following questions:

1. How would you define Project Based Learning? Can you give me an example?
2. What does the implementation of PBL look like in your school?
3. What grade levels are implementing PBL learning experiences in their classrooms?
4. What specific schoolwide practices are in place to support PBL implementation?
5. How do you support teachers in sustaining PBL in their classrooms? Time? Talent? Resources? Structures?
6. In what ways, if any, do you support furthering PBL in your school?
7. Does your School Innovation and Improvement Plan (SIIP) connect to PBL? If so, in what ways?
8. Do Collaborative Learning Team (CLT) meetings provide any opportunities for teachers to further their understanding or implementation of PBL? Please provide specific examples.
9. What professional learning experiences do you engage in at your school that support PBL implementation?
10. What support have you been provided from central office to assist in the implementation of PBL in your school?
11. In an ideal world, what kind of support would help you most?

Appendix C: Implementation of Project Based Learning in the Elementary School:

Teacher Survey

Introduction

Your response to the following questions will provide a deeper understanding of the beliefs and practices in place at your school that support the implementation of Project Based Learning (PBL).

Q1 What school do you currently work at in NCPS? If you work at more than one school, please write both school names.

Q2 What is your position at your school?

Q3 How many years have you held this position at your school?

Q4 How many years have you worked for Nesting County Public Schools?

- 0-3
- 4-10
- 11-15
- 16-20
- 21 or more years

Planning for Project Based Learning

To better understand how you and your school plans for Project Based Learning, please answer the following questions to the best of your ability.

Q5 To your knowledge, how many years has your school planned for Project Based Learning experiences?

- Less than 1 year

- 1 year

- 2 years

- More than 2 years

Q6 Who regularly attends and participates in PBL planning? Please select all of the following that apply:

- Grade level teachers

- Instructional Coach

- ESOL teacher

- SPED teacher

- Administrator
- Other resource teacher(s)

Professional Learning and Development (PLD)

The following question relates to how your school, and the district, support your understanding of Project Based Learning.

Q7 What professional learning experiences have helped you to incorporate Project Based Learning in your classroom? Please select all that apply.

- NCPS conference
- Countywide in-service
- After-school special
- Project Based Learning Class (available through NCPS course catalog and delivered by central office personnel)
- Whole school meeting (Include number of days dedicated to PBL.)
  _____
- One day/partial day workshop (delivered by central office personnel)
- PBL coaching and/or modeling at your school
- CLT planning (with support from central office personnel)
- CLT planning (without support from central office personnel)
- "Teachers as Readers"/PBL Book Study (Please provide the name of the text.)
  _____
- Collaborative learning visits
- Data Dialogues
- PBL unit planning (outside of CLT)
- Lesson Study
- Private workshop (Please provide the name of the provider/consultant.)
- Other

School Innovation and Improvement Planning

The following questions relate to your School Innovation and Improvement Plan (SIIP) and its connection to the district strategic plan, Spark.

Q8 Were you required to read or reference Spark in the creation of your SIIP?

- Yes,
- No,
- I don't know.
- I did not take part in SIIP planning at my school.

Q9 To your knowledge, in what ways does your school's SIIP support PBL implementation? (Please select all that apply.)

- PBL is a goal of the SIIP.

- PBL is a strategy to support one or more goals of the SIIP.

- PBL is not connected to the SIIP.

Q10 How often does your school reflect on its SIIP with grade level teams? (Please answer this question regardless of your SIIP's connection to PBL.)

- 2 times/year (beginning and end of the year)

- 4 times per year (every quarter)

- We only hear about the SIIP goals at the beginning of the year.

- Other

Reflection and Evaluation

Q11 How does your school, or school team, gauge the effectiveness and fidelity of PBL implementation? Please select all answers that apply.
- We participate in a protocol, such as "Critical Friends." (*If another protocol is used, please indicate in the text box.)
- The SIIP holds us accountable for implementing PBL. We have to enter data throughout the year.
- Other

Thank you.

This concludes the survey. Your responses will help guide further inquiry into what organizational practices and routines support the implementation of Project Based Learning in the elementary school. You may be contacted for a follow-up focus group to be held at your school. Thank you, in advance, for your participation.

Appendix D: Focus Group Agenda and Questions

1. **Introduction of all participants**. Reiterate that the purpose of the meeting is to collect information about their experiences implementing Project Based Learning. Participants will be informed that this meeting will remain focused on the practices of Leadership, School Innovation and Improvement Planning, the Collaborative Learning (CLT) cycle, and Professional Learning and Development (PLD) opportunities found at their school. There are defined times to discuss each routine/practice, although some practices may overlap. At the beginning of each topic, comments will be timed and limited to one minute so that each person has the opportunity to share their thinking. Once all who are interested in speaking have had a chance to share, the next question will be posed. Notes will be taken regarding ideas and concepts, and a recording will help assure the validity of the information gleaned from the conversation. However, no names will be associated with any particular thought. (5 minutes)

2. **Questions**

Before we begin to delve more deeply into questions related to PBL implementation, I would like a better understanding of your knowledge of the following acronyms: PBL, SIIP, and CLT. Starting with PBL, what might this acronym stand for? SIIP? CLT?

1. In what ways, if any, has your principal guided your understanding of Project Based Learning? Did you receive additional training, feedback, or any other support to help you implement PBL? (15 minutes)
2. According to your SIIP, PBL plays a (prominent or not prominent) role. In what ways, if any, does School Improvement Planning goals and strategies influence your daily instructional practice? (15 minutes)
3. Your school meets (number) of times per week as a CLT. In what ways does collaborative planning within, or outside of the CLT, impact your implementation of PBL? (15 minutes)
4. As teachers at (name of school), you indicated that your school offers (type) professional learning and development regarding PBL. In what ways has this learning helped you independently, or as a group, create a shared understanding of Project Based Learning? (15 minutes)
5. What other resources have helped/hindered your understanding of PBL and its use in your classroom?