HIKING THE HORIZONTAL:

TEAM LEARNING BEHAVIORS AND TEAM INNOVATIVE WORK BEHAVIOR

IN CROSS-BOUNDARY PUBLIC SECTOR WORK TEAMS

by

Nicholas L. Pelzer

Dissertation Committee:

Professor Victoria Marsick, Sponsor
Professor Lyle Yorks

Approved by the Committee on
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ABSTRACT

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Organizations need to develop innovations to meet emerging problems and challenges due to increasing global competition, customer expectations, or market changes. Responding to these challenges requires employees to create solutions within their organizations, such as new products or processes. While some research has found crucial roles of individual faculty in the innovation process, less is known about how individual educators (i.e., university faculty and clinical practitioners) work across knowledge and organizational boundaries.

The purpose of this case study on team innovative work behavior (TIWB) in higher education was to learn more about which team learning behaviors (TLBs) and team innovative work behaviors (TIWBs) were exhibited by a university-based cross-boundary work team to understand how these complex organizations can leverage learning toward practice improvement. The purposefully selected sample was composed of an 11-member California-based work team consisting of 5 faculty members from a redesigning public university, 4 senior administrators from partnering public school districts, and 2 faculty members from a partnering mentor program. The primary data collection method was in-depth critical incident (CI) interviews. Supportive methods included a pre-interview questionnaire, field observations, document and artifact review, and a group interview. The data were coded and analyzed first by research question, and then findings were

organized thematically in alignment with three analytic categories based on the study's conceptual framework.

The research revealed that the team exhibited several TLBs and one TIWB throughout the redesign process. The team's capacity for learning and innovating was strongly influenced by the organizational conditions that brought the team together as well as the team's leadership and facilitation. While few of the team members were able to articulate their own learning and practice changes explicitly, they did reflect on their learning in the context of task completion and goal achievement.

Recommendations are offered for university and district practitioners, and for further research, including: (1) identifying a team leader with both positional and reputational authority, (2) selecting a team based on existing relationships and shared commitment to change, (3) using evidence to challenge existing assumptions, and (4) aligning activities to organizational and environmental forces.

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Chapter I

PROBLEM AND PURPOSE OF THE STUDY

Context and Background

Organizations need to develop innovations to meet emerging problems and challenges due to increasing global competition, customer expectations, or market changes (Savelsbergh et al., 2012; Somech & Khalaili, 2014). Responding to these challenges requires employees to create solutions within their organizations, such as new products or processes for individuals, teams or organizations that can be useful to address challenges or to improve the current state (Messmann & Mulder, 2012). Employees' innovative work behavior (IWB)—defined as the development, adoption, and implementation of new ideas for products, technologies, and work methods by employees (Yuan & Woodman, 2010)—is often claimed to be an important determinant of organizational success. In the public sector, innovation is viewed as a factor that contributes to the quality of public services and problem-solving capacity. Knowledge-intensive public sector organizations (KIPSOs), such as universities and public school districts, are reliant on professional knowledge and provide knowledge-intensive services to create public value. Since the work of public organizations largely involves the transfer of knowledge-based services, these organizations need to process knowledge effectively (Richards & Duxbury, 2014). However, unlike the private sector, public sector innovations can only be justified if they increase public value in terms of the quality, efficiency, or fitness for purpose of governance or services. As such, these organizations

operate in contexts that usually lack the types of triggers that would traditionally stimulate innovation and, in fact, often stifle it (Bos-Nehles et al., 2017; De Vries et al., 2015; Hartley, 2005). For example, universities operate in an environment that (a) has traditionally lacked the types of competitive pressures and demands for performance improvements seen in private firms, (b) has a large degree of political oversight and interventions by multiple authorities and interest groups, (c) is funded primarily by governments (in the case of public universities) rather than private investors, and (d) has ill-defined reward systems for successful innovations (Borins, 2001; Bysted & Jespersen, 2014; Hartley, 2005; Rainey & Bozeman, 2000). A general fear of failure may lead to strict central agency controls to ensure that public processes run smoothly. This context has led to bureaucratized, formalized, and hierarchical systems, characterized by formal mechanisms, the widespread adoption of rules and regulations, and the use of budget-based control systems, which together result in standardized services for the population (Bos-Nehles et al., 2017; Hartley, 2005).

Despite these organizational and environmental constraints, recently universities have found themselves under increasing pressure to innovate. These pressures can catalyze innovation in specific programs sensitive to market and environmental forces, even if the entire university does not change. Over the last 20 years, for example, K-12 school improvement efforts have shown that principals play a unique and significant role in fostering student achievement, a notion reinforced by a landmark study that found that principals are "second only to classroom instruction among all school-related factors that contribute to what students learn at school" (Leithwood et al., 2004, p. 5). There have been virtually no documented instances of troubled schools being turned around without intervention by a powerful leader (Leithwood et al., 2004, Wang et al., 2018). In fact, principals are multipliers of effective instruction. As more is learned about the importance of school leaders and the complexity of their jobs, school districts, policymakers, and the public are making increasing demands for highly competent

leaders. Principal preparation programs have responded to this demand (Young, 2015). However, despite the growing recognition of the importance of the principal's role in school improvement, universities, by far the largest provider of principal training in the nation, have been criticized for not adequately preparing principal candidates for the challenges of today's schools. More than a decade of research finds that university-based principal preparation can lack rigor and relevance (Darling-Hammond et al., 2007; Elmore, 2000; Levine, 2005). Criticisms include systemic flaws such as how students are recruited and selected, the quality of curriculum and instructional methods, and the means used to assess graduates' learning and career advancement (Young, 2015). The criticisms stem from the fact that, during the last century, professional expectations for school leaders have evolved with the changing political and social climate, while many leader preparation programs have failed to change in response to these new expectations (Gooden et al., 2011).

There is an imperative for greater clarity regarding the attributes and qualities of principal preparation programs and their effects on school leaders. In their overview of the contexts, the key features, and the evidentiary data demonstrated by five innovative principal preparation programs, Davis and Darling-Hammond (2012, citing Davis et al., 2005, pp. 8–15) identified several common features, including: (1) being driven by a theory of action that locates instructional leadership at the heart of school reform and where effective school leadership is best developed through the integration of practical and problem-based experiences and research-based knowledge; (2) being highly selective and seeking to cultivate highly experienced, dedicated, and instructionally competent candidates; and (3) providing full-time or part-time mentored internships at school or district office sites other than the candidate's school of employment.

Additionally, according to the researchers, the innovative principal preparation programs also had several attributes that are relatively uncommon among more traditional programs, specifically working with one or more local school districts to

recruit and train candidates and to integrate the work of the program into the work of the schools. Despite the challenges involved, studies have found that university–district partnerships offer important advantages, including bridging theory and practice, creating more delivery options, and emphasizing collaborative leadership (Darling-Hammond et al., 2007). While a recent study has shown that universities and the districts that hire their graduates agree that there are both the need and the room to improve, they acknowledge that the type of university–district collaboration that is essential to improvement "almost never happens" (Wang et al., 2018). As universities expand their involvement with urban school districts, there is a greater need to understand how university-based principal preparation programs learn and collaborate in the service of innovation.

Context of the Study

Despite broad awareness of what effective preparation *should* look like, and overall recognition of the need to change, a recent study (Mendles, 2016) identified several barriers that hinder universities from adopting the evidence-based features of effective programs. Some of these barriers include:

- *University policies and practices that can hinder change.* The barriers range from "a lack of urgency for change" from university officials; to faculty (who are rewarded for research publications rather than clinical work) who do not see the need for change and lack incentive to do so; to insufficient financial support which limits salaries and clinical experiences, as well as program offerings.

- *Lack of effective university-district partnerships.* When programs work with districts, they can better align their offerings with district needs and better serve their customers. But despite these benefits, meaningful partnerships between

programs and districts are far from universal. This lack of partnership
ultimately results in a lack of learning opportunities and clinical experiences
that evidence has shown are essential in order to prepare principal candidates
for the real-world rigors of the job.

The question remains whether and how universities can redesign their principal preparation programs to meet the need for high-quality school leaders by aligning their content and curriculum with the current evidence of best practice. In response, the Education Foundation (pseudonym)—a national education philanthropy based in the United States—established the University Curricular Redesign Initiative (UCRI) (pseudonym).

This multi-million dollar initiative supports a cohort of universities from across the country to redesign their principal preparation programs according to the features and conditions recommended in research and in partnership with several high-need districts who hire their graduates. UCRI seeks to address the question: "How can university principal preparation programs, working in partnership with high-need school districts, mentor preparation programs, and the state, improve their training so it reflects the evidence on how best to prepare effective principals?" Specifically, UCRI's three goals are to:

1. Develop and implement high-quality courses of study and supportive organization conditions at universities where future principals receive their pre-service training;

2. Foster strong collaborations between each university and its partner school districts; and

3. Develop state policies about program accreditation and principal licensure to promote higher-quality training statewide (Wang et al., 2018).

University-district partnerships are central to the work of UCRI because program graduates will ultimately seek jobs within these districts. Therefore, districts are uniquely

positioned to help the university in at least three ways: first, to understand their unique local context and specific human capital needs; second, to provide rich clinical experiences that are an essential bridge between theory and practice; and finally, districts can provide feedback to the university on the hiring and performance of their graduates, which can inform a cycle of continuous improvement as the university refines its principal preparation program.

Over the course of implementation, each university team—consisting of a redesigning university, three public school districts, a state representative, and a "mentor program" that has an existing effective program—committed to redesigning its program. Specifically, they would revise curriculum and instruction, clinical experiences, recruitment and selection processes, and develop data systems that will provide a "feedback loop" that informs continuous improvement. This study focused on members of a cross-boundary work team participating in the University Curricular Redesign Initiative (UCRI) attempting to redesign their university-based principal preparation program according to evidence-based principles and practices.

Problem Statement

Given that innovation in principal preparation programs does not occur within a vacuum, the role of the university in supporting innovation must be considered. Among a variety of innovation actors, the role of universities in innovation systems is becoming increasingly crucial (Etzkowitz, 2004, 2013; Mowery & Sampat, 2009; Nelson & Rosenberg, 1993). While not as extensive as the literature found in the private sector, there is an abundance of research into innovation in higher education, whether in curricular programs (McClure, 2015), delivery mechanisms (Davis & Jacobsen, 2014), pedagogical approaches, support service mechanisms (Sultan & Wong, 2013), or management (Amaral et al., 2003; Hasanefendic et al., 2017). These innovations have

been explored largely within two bodies of literature. The first considers innovation in universities as a process of institutional adaptation to environmental pressures where universities respond by developing new and enhanced practices and innovations at many levels, and in many forms, within institutional structures and curricular programs (Chatterton & Goddard, 2000; Davis & Jacobsen, 2014; Dee & Heineman, 2016; McClure, 2015). The second body of literature examined how the success of innovation is dependent on the culture within a university (Kezar & Eckel, 2002). Merton et al. (2009) showed that the implementation of a changed curriculum was affected by how well the change aligned with the values and norms of the institution. More recently, it has been suggested that the identity of an institution mediates strategy-making at universities (Fumasoli et al., 2015; Hasanefendic et al., 2017). These two bodies of literature emphasize that universities are guided not only by their responses to their environment but also by the norms and values prevalent in their departments, as well as the disciplines that characterize their institutions. Under such conditions, undertaking and achieving innovation is challenged by institutional constraints to conform to the environmental rules, norms, and values apparent in the structure and culture. These constraints could well affect innovation in principal preparation programs. Moreover, some academics tend to prefer to maintain the status quo (Hasanefendic et al., 2017) and, in fact, are not incentivized to change. Thus, one major challenge of ongoing higher education reforms around the world is how to effectively coordinate and facilitate universities to promote innovation and potentially transform higher education (Cai, 2017; Dill & van Vught, 2010; Laredo & Mustar, 2001).

Adding to the work of Baregheh et al. (2009), Cai (2017) noted that when addressing innovations in universities, the problem to be addressed, the people involved in the innovation process, the learning curve, and factors affecting the institutionalization of innovation all needed to be considered. He found that higher education literature pays special attention to both innovation initiators (e.g., university leaders and managers) and

innovation participants (e.g., academic staff), but as highly bureaucratic organizations, there is often tension between the top managers who have initiated reforms and the academics responsible for implementing them. The faculty either resists changes or decouples their practical work from formal structural changes (Clark, 1983; Krücken, 2003; Musselin, 2007; Townley, 1997). Additionally, the reluctance of academics to change/reform is to a large extent due to the heavy inertia of traditional academic identity, which has originated and been sustained throughout universities' historical development (Townley, 1997). Further, even if faculty desired to change or innovate in response to changing needs, the expertise and depth of content knowledge for which they are recognized cannot be quickly revised. While some research has found crucial roles of individual faculty in the innovation process, less is known about the role of cross-boundary work teams in initiating and implementing innovations; specifically, how individual educators (i.e., university faculty and clinical practitioners) work across knowledge boundaries—boundaries associated with differences in expertise and organization in novel settings.

Further, as Boyce (2003) claimed, the challenge of successful change is less planning and implementing and more developing and sustaining new ways of seeing, deciding, and acting. Successful change is about learning enough collectively so that institutional consequences, outcomes, and inquiry change (Cai, 2017). Developing innovations requires innovative work behavior (IWB). IWB encompasses any employee's work activities required for innovation development (Messmann & Mulder, 2012). These work activities are carried out during the process of innovation development that spans from the generation of new ideas to their successful implementation. This is a complex process and is not a solitary act by an individual employee. Rather, IWB involves social activities based on interaction with others, such as discussing a problem with colleagues (Widmann et al., 2019). Despite the importance of learning from the experience of the innovation process, less is known about how cross-boundary work teams learn while

innovating in the context of higher education principal preparation programs and integrate that learning into their ongoing work. This study sought to address the lack of research on team innovative work behaviors in the context of higher education.

Purpose of the Study and Research Questions

The purpose of this case study on team innovative work behavior (TIWB) in higher education principal preparation programs was to learn more about which team learning behaviors (TLBs) and team innovative work behaviors (TIWBs) are exhibited by cross-boundary, knowledge-intensive public sector organization (KIPSO) work teams to understand how these complex organizations can leverage learning toward practice improvement. Little is known about how principal preparation programs in universities innovate across boundaries. By becoming more innovative and responsive to changing customer expectations, principal preparation programs in universities can come closer to achieving the type of exemplary features, content, and experiences associated with effective leader preparation. This will make them greater assets to the districts that hire their graduates and enhance their long-term sustainability.

This study fills the gaps in our knowledge and understanding by investigating the team learning conditions and experiences of a university-based cross-boundary work team attempting an innovative redesign of a principal preparation program. The following research questions were explored:

1. What, if any, team innovative work behaviors (TIWBs) and team learning behaviors (TLB) were experienced by the cross-boundary work team?

2. To what extent, if any, did their work as a team result in perceived learning?

3. In what ways, if at all, has the cross-boundary work team's practice changed as a result of participating in the redesign process?

- In what ways, if at all, has the individual team members' daily practice within their respective organizations changed as a result of participating in the redesign process?

4. How, and to what degree, have contextual factors enabled and/or impeded the learning and practice of cross-boundary work team members?

Research Design Overview

This research study utilizes a case study design (Yin, 1994) bounded by the experiences of a purposefully sampled cross-boundary work team. In this instance, the case study best serves as an exploratory approach, allowing the researcher to better understand the phenomenon given that little research exists on team innovative work behaviors (TIWBs) in higher education principal preparation programs. In order to investigate the research questions asked, several data collection methods were employed. Initially, pre-interview questionnaires were utilized to collect vital information from each participant in advance of the in-depth interview. Based on insights gleaned from the pre-interview questionnaire, the next phase of data collection consisted of a group interview and semi-structured critical incident (CI) interviews to go in-depth into participant experiences with innovative work behavior and team learning. Direct observations were conducted within the context of the team's broader redesign efforts, including team meetings and participation in professional learning communities and other network activities supported by the funder. Observations were conducted to develop a deeper understanding of context by observing how the team articulates and describes its work. Finally, a review was conducted of documents and other artifacts produced as a result of the redesign process (i.e., agendas, protocols, deliverables) to capture potential documentation of learning occurring and practice changes. A deeper discussion of these methods and methods of data analysis is in Chapter III.

In pursuit of an integrated and nuanced view of the research topic, I combined several theoretical lenses to establish the conceptual framework: the processes of innovative work behavior (IWB) and team innovative work behavior (TIWB); team learning; and team learning behaviors (TLBs) and the team learning conditions (TLCs) that influence these processes. Therefore, the focus of this framework is on how the team learns, what it learns, and how this learning translates into innovative work behaviors. The framework draws on the work of:

- Widman and Mulder's (2018) and Widmann et al.'s (2016, 2019) conceptualization of IWB and TIWB as a dynamic and context-bound construct that combines approaches on organizational and workplace learning (Argyris & Schön, 1996) and experiential learning (Kolb, 1984; Kolodner, 1992) and can be considered a continuous process of reflection and learning from experience that leads to innovation as well as to professional development (Dorenbosch et al., 2005; Messmann & Mulder, 2012; Scott & Bruce, 1994).

- Decuyper et al.'s (2010) systemic and integrative model of team learning, which is based on general systems theory and complexity theory and which combines both cognitive and sociocultural perspectives on team learning (Akkerman et al., 2007). From this theoretical perspective, teams are considered as complex open systems that interconnect team members to each other and their environment. This model integrates a set of team learning behaviors (TLB) and conditions (TLC) that are required for effective teamwork performance (Widmann et al., 2016); In alignment with this research, this study focuses on the TLBs that are part of basic behaviors and facilitating behaviors and are important for generating shared knowledge; and the TLCs that have been shown to influence team learning. While three TLBs (knowledge sharing, team reflexivity, and boundary spanning) and three TLCs (team structure, interdependence, and group potency) have been previously studied in the

context of IWB (Widmann et al., 2019; Widmann & Mulder, 208), this study

sought to identify any of the influencing variables identified by Decuyper et al.

(2010).

Although the processes of IWB, TLB, and TLC are not distinct, they are presented in this study as such for modeling purposes.

Researcher Perspectives and Assumptions

My own worldview and professional experience, specifically the design of professional learning opportunities within the philanthropic sector, influenced the framing of this phenomenon. As a philanthropic practitioner with 15 years of cross-sector experience in higher education initiative design, community building through learning networks and partnerships, and data-informed continuous improvement, I have seen first-hand how strategic grantmaking and collaborative learning can catalyze innovation and sustainable, organizational transformation. Collectively, these experiences and the literature drove my curiosity to gain perspective and understanding of the factors that impact team learning behaviors (TLBs) and team innovative work behaviors (TIWBs) in university-based cross-boundary work teams.

Through these experiences, I have developed perspectives and biases that I wished to remain cognizant of as I conducted this study. As mentioned above, I have developed my own perspective on what motivates organizations to change, as well as the type, scope, and sustainability of those changes. Through my philanthropic work, I have seen how the opportunity for funding can induce organizations to take risks and try new things. However, if those changes do not result in an appreciable benefit to the organization, or if benefits are achieved but are too expensive or disruptive to the culture, they will not be sustained. In my experience, organizations are most likely to make change, and to sustain those changes, when they align with their organizational values,

risks are mitigated, external pressures are accounted for, and both financial and cultural sustainability is planned for at the onset.

These views undoubtedly drove my desire to conduct this research and influenced how the purpose of the study and the research questions are framed (Creswell, 2013). Additionally, I also recognized a bias toward the belief that innovation in the public sector is necessary for the long-term viability of these organizations, whose mission is ultimately to serve the public good. This caused me to focus on identifying the connection between team learning, innovation, and the everyday behaviors that put those innovations into practice. I believe that the philanthropic sector is looking to ensure that its limited resources go as far as possible. By supporting team learning and innovative work behavior, both foundations and their grantees can work toward sustainable change.

From a research perspective, one of the main assumptions embedded in my central inquiry was that, despite universities being hierarchical environments that are resistant to change, innovations do in fact occur, and the learning antecedents of those innovations and behavioral changes that result are observable and can be explicitly identified. Another assumption was that I would have full access to the subject organizations and relevant documentation, and that subjects would be candid about their experiences and behaviors. I am a representative of the organization funding some of the activities that were studied. While several specific actions were taken to try and mitigate the power imbalances inherent in both qualitative research in general and the funder-grantee relationship in particular, some of those challenges likely remained.

Rationale and Significance

Innovations are needed to meet different challenges caused by the changing needs of students, the labor market, societal developments, and policy developments. Responding to these changes can greatly benefit from innovative work behavior (IWB).

With respect to practice, an understanding of employees' contributions to the process of innovation development is crucial for organizations to make good use of their workforce. This research study has the potential to significantly benefit the organizations studied and their employees, those working in teams, managers, and HR practitioners desiring to increase the innovativeness of their organizations, and the broader philanthropic sector seeking to support public sector organizations.

Key Terms

Here I define a few specialized terms to be used throughout the study. I go deeper into these and other relevant terms in the literature review and relevant chapters.

- *Cross-boundary* team is defined as "a newly formed temporary group, with fluid membership, which needs to develop rapidly into a high-performing unit to take on an unfamiliar project" (Edmondson & Harvey, 2017, p. 347).

- *Innovative work behavior* (IWB) is defined "as the sum of physical and cognitive work activities carried out by employees in their work context, either solitarily or in a social setting, to accomplish a set of tasks that are required to achieve the goal of innovation development" (Messmann & Mulder, 2012, p. 45). Based on models of creativity and innovation, the four different categories of IWB are (i) opportunity exploration; (ii) idea generation; (iii) idea promotion; and (iv) idea realization.

- *Knowledge-Intensive Public Sector Organizations* (KIPSOs) are defined as "organizations that are reliant on professional knowledge, and work to provide knowledge-intensive services to create public value" (Bos-Nehles et al., 2016, p. 380).

- *Team innovative work behavior* (TIWB) is defined as the sum of all physical and cognitive work activities teams carry out in their work context to attain the

necessary requirements for the development of an innovation (Messmann & Mulder, 2012).

- *Team learning* is defined as "an ongoing process of action and reflection, comprised of behaviors such as asking questions, seeking feedback, experimenting, reflecting on results, and discussion of errors" (Edmondson, 1999, p. 353).

- *Team learning behavior* (TLB) is defined as the team-level processes of team learning distinguished by three categories: (i) basic behaviors that describe what happens when teams learn; (ii) facilitating behaviors that are important for the efficacy and efficiency of the team interaction; and (iii) storage and retrieval that enable teams to establish links between activities and corresponding outcomes in past, present, and future (Widmann & Mulder, 2018).

Chapter II

LITERATURE REVIEW

Organization of the Chapter

This chapter presents important theoretical concepts and research findings from innovation as well as team and organizational learning literature. In reviewing the literature, this chapter is divided into five major sections. The first section, innovative work behavior (IWB), is explored with respect to how IWB contributes to team performance. In order to better understand the context in which IWB occurs, as well as their facilitating and inhibiting factors, a brief history of the concept as both an individual and social construct is explored in the literature. In the second section, the specific context for this study, a university-based cross-boundary work team is also considered. Universities and public-school districts are reliant on professional knowledge and provide knowledge-intensive services to create public value. As such, these knowledge-intensive public sector organizations (KIPSOs) offer potentially unique barriers and facilitators to IWB that will be explored. The third section, team learning, reflects the crucial fact that many organizations have adopted work teams as an organizational structure that enables efficient work processes. A review of the concept of team learning research, including conceptually and empirically derived models, was undertaken with particular focus on the social and contextual factors that enable or impede learning and practice outcomes and behaviors. The fourth section brings together the findings from the previous sections, offering the variables associated with team innovative work behavior (TIWB) and team

learning behaviors (TLBs). The fifth section considers other underlying theories of individual and organizational performance that influence TIWB and TLB. Finally, I describe the conceptual framework derived from the literature that guided the study methodology.

Literature Review Methodology

In searching for literature on innovation, innovative work behavior, organizational learning, team learning, and higher education reform and change, several methods were employed. These included database services in Google Scholar, ProQuest, JSTOR, and Education Full Text, as well as a review of references from literature addressing organizational learning, adult learning, and higher education reform. Database searches were conducted using the following terms: innovation, innovative work behavior, public sector, learning, team learning, team learning behaviors, knowledge-intensive, organization learning, innovation teams, etc. I sought current literature from 2009 to 2019 to capture the most recent thinking in these areas. The historical context was gleaned from research of articles that pointed to seminal and historical articles relevant to this review. What follows are the findings of this literature review process. This literature review concludes with a conceptual framework, which guided the beginning stages of this research.

Innovative Work Behavior (IWB)

Organizations need to innovate to cope with emerging problems and challenges due to increasing competition or market changes, changing customer expectations, and to secure the organization's long-term survival (Messmann & Mulder, 2012; Savelsbergh et al., 2012; Somech & Khalaili, 2014). These challenges require employees to create

solutions in organizations. In particular, employee innovative work behavior (IWB)—developing, adopting, and implementing new ideas for products and work methods—is an important asset that enables an organization to succeed in a dynamic business environment (Kanter, 1988; West & Farr, 1990). The need for innovation is not limited to the private sector alone. Rather, universities and other knowledge-intensive public sector organizations (KIPSOs) that are reliant on professional knowledge to create public value must innovate to survive as well. Because of the complexity of the challenges, many organizations have adopted organizational structures that involve the use of teams to accomplish together organizationally relevant and knowledge-intensive tasks and develop solutions to meet various challenges. In the following section, I provide an overview of the benefits of innovations within organizations broadly and within the context of KIPSOs in particular. I then define IWB and how it is facilitated within the context of boundary-crossing work teams. Finally, building on the concept of IWB, I conceptualize team innovative work behavior (TIWB) and the behaviors that reflect the team contribution to the innovation process.

Benefits of Innovations in Organizational Work Practice

Public sector organizations perform a significant role in American society. They provide important social services across education, housing, health, and other pillars of society that touch the lives of every citizen. But in a time of increasing complexity and diminishing resources, it is more difficult than ever for public sector organizations to achieve their social missions. Further, in a quickly changing, information-based society, an organization's ability to create, organize, and deploy new knowledge and services is essential. Innovations at work are a crucial means for organizations to cope with increasing customer expectations, to achieve and maintain a competitive advantage, and to secure the organization's long-term survival (Anderson et al., 2014; Fay et al., 2015; Messmann & Mulder, 2012; Subramaniam & Youndt, 2005). In addition to these external

benefits, innovations offer internal benefits for organizations as well, including the refinement of internal processes and procedures resulting in greater efficiency in the production and provision of services. For employees who contribute to the development of an innovation, this engagement may bring the benefit of a better fit between conditions and requirements of work and personal needs and competencies, improved collaboration and communication with colleagues, and higher levels of job satisfaction and well-being. Thus, innovations are not only an outcome, but "include a dynamic, developmental process that has major implications for the professional development of employees" (Widmann et al., 2016, p. 430). Innovation clearly has both internal and external benefits to organizations and their employees; however, the conditional factors that encourage and stifle innovation development are highly contextual. Research finds that individual innovation developments observed in the public sector are often more restrained by barriers than those found in the private sector (Borins, 2001; Bos-Nehles et al., 2017; Damanpour & Schneider, 2009; Fernandez & Moldogaziev, 2013; Rainey & Bozeman, 2000).

Innovation in the Public Sector

Since the work of public organizations, such as public universities, largely involves the transfer of knowledge-based services, it is essential that these organizations process knowledge effectively (Richards & Duxbury, 2014). Harvey et al. (2010) argue that research on knowledge processes in public organizations is especially important given emphasis on responsive service delivery. Responsiveness calls for continuously gathering, integrating, and translating knowledge from diverse stakeholders into new operational practices and policies to improve service delivery (Riege & Lindsay, 2006). However, unlike the private sector, public sector innovations can only be justified if they increase public value in terms of the quality, efficiency, or fitness for purposes of governance or services. As such, these organizations operate in contexts that usually lack

the types of triggers that would traditionally stimulate innovation and, in fact, often stifle it (Bos-Nehles et al., 2017; De Vries et al., 2016; Hartley, 2005). For example, public sector organizations, such as public universities, operate in an environment that (a) has traditionally lacked the types of competitive pressures and demands for performance improvements seen in private firms, (b) has a large degree of political oversight and interventions by multiple authorities and interest groups, (c) is funded primarily by governments rather than private investors, and (d) has ill-defined reward systems for successful innovations (Borins, 2001; Bysted & Jespersen, 2014; Hartley, 2005; Rainey & Bozeman, 2000). This context has led to bureaucratized, formalized, and hierarchical systems, characterized by formal mechanisms. Additionally, it contributes to the widespread adoption of rules and regulations and the use of budget-based control systems, which together result in standardized services for the population (Bos-Nehles et al., 2017; Hartley, 2005). Further, a general fear of failure may lead to strict central agency controls to ensure that public processes run smoothly.

Universities as Knowledge-Intensive Public Sector Organizations (KIPSOs)

Public universities and school districts are organizations that are reliant on professional knowledge and work to provide knowledge-intensive services to create public value. These organizational types can be defined as knowledge-intensive public sector organizations (KIPSOs). While somewhat limited, the public-sector knowledge management literature addresses the storage, dissemination, and use of knowledge to improve organizational effectiveness (Butler et al., 2008; Cong & Pandya, 2003; Liebowitz, 2003; Riege & Lindsay, 2006). However, as mentioned previously, the highly bureaucratized context of public sector organizations potentially inhibits individual innovation efforts while encouraging the use of systematic knowledge management. The research focused on innovation within higher education institutions (HEIs) seems to support this as well. While not as extensive as that found in the private sector, there has

been significant research into innovation in higher education, whether in curricular programs (McClure, 2015), delivery mechanisms (Davis & Jacobsen, 2014), pedagogical approaches, support service mechanisms (Sultan & Wong, 2013), or management (Amaral et al., 2003; Hasanefendic et al., 2017).

Innovations in HEIs have been explored largely within two bodies of literature. The first considers innovation in universities as a process of institutional adaptation to environmental pressures where universities respond by developing new and enhanced practices and innovations at many levels—and in many forms—within institutional structures and curricular programs (Chatterton & Goddard, 2000; Davis & Jacobsen, 2014; Dee & Heineman, 2016; McClure, 2015). The second body of literature examines how the success of innovation is dependent on the culture within a university (Kezar & Eckel, 2002). Merton et al. (2009) showed that the effectiveness of implementing a revised curriculum was affected by how well the change aligned with the values and norms of the institution. More recently, it has been suggested that the identity of an institution mediates strategy-making at universities (Fumasoli et al., 2015; Hasanefendic et al., 2017). These two bodies of literature emphasize that universities are guided not only by their responses to their environment but also by the norms and values prevalent in their departments, as well as the disciplines, which characterize their institutions. Under such conditions, undertaking and achieving innovation is challenged by institutional constraints to conform to the environmental rules, norms, and values apparent in the structure and culture. Moreover, academics tend to prefer to maintain the status quo and are largely not incentivized to take risks (Hasanefendic et al., 2017).

Thus, one major concern of ongoing higher education reforms around the world is how to effectively coordinate and support universities to promote innovation and potentially transform higher education (Cai, 2017; Dill & van Vught, 2010; Laredo & Mustar, 2001). Adding to the work of Baregheh et al. (2009), Cai (2017) noted that various factors need to be considered when addressing innovations in universities,

including the problem to be addressed by innovation, the people involved in the innovation process, the learning curve, and factors affecting the institutionalization of innovation. The faculty either resists changes or decouples their practical work from formal structural changes (Clark, 1983; Krücken, 2003; Musselin, 2007; Townley, 1997). Further, the reluctance of academics to change/reform is to a large extent due to the heavy inertia of traditional academic identity, which has originated and been sustained throughout universities' historical development (Townley, 1997). While some research has found crucial roles of individual academics in the innovation process, less is known about the role of cross-boundary work teams (educators with different qualifications and responsibilities within their university) in initiating and implementing innovations within the higher education context.

In their study, Bos-Nehles et al. (2017) seemed to confirm the finding that KIPSOs seem to be successful in generating innovative ideas, but structural impediments and a generally low perceived need and desire of organizational actors to engage in innovative efforts have made turning these innovative ideas into the new norm difficult. They suggest that public managers desiring to increase the innovativeness of their organizations should create a climate where failed innovative projects are considered opportunities for learning, rather than as failures (Carmeli & Gittell, 2009) and where employees feel stimulated to develop innovative ideas and supported to realize them. This aligns with private-sector research suggesting that managers should focus on providing employees with high norms for innovation and creating a climate that is open to change and error friendly (Hülsheger et al., 2009). While these studies show that public employees are not necessarily less innovative than employees in private organizations (Bos-Nehles et al., 2017; Bysted & Jespersen, 2014), less is known about how innovative behavior can be initiated and supported in KIPSOs.

Conceptualizing and Measuring Innovative Work Behavior (IWB)

Developing innovations requires innovative work behavior (Messmann & Mulder, 2012). Innovative work behavior (IWB) is a dynamic, context-bound behavioral construct with its conceptual roots in the two-stage models of creativity and innovation and consists not only of the generation of ideas (creativity) but also of transforming these ideas into concrete innovations (Devloo et al., 2015). In the creative stage, problems are recognized, and innovative ideas are generated at the individual level, while in the implementation stage, innovative ideas are realized and applied in organizational practice (Amabile, 1988; Oldham & Cummings, 1996; West, 2002). As Messmann and Mulder (2012) state, "The role of individual contributions is represented by the corresponding physical or cognitive work activities employees carry out solitarily or in a social setting to accomplish the prerequisite innovation tasks" (p. 46). Accordingly, the construct of innovative work behavior emphasizes that individuals are the creative source of innovation development (Janssen et al., 2004).

Previous research on creativity and innovation work behavior has identified four interrelated tasks that must be undertaken in the development of an innovation: (a) opportunity exploration, (b) idea generation, (c) idea promotion, and (d) idea realization (Amabile, 1988; De Jong & Den Hartog, 2010; Dorenbosch et al., 2005; Janssen, 2000; Kanter, 1988; Kleysen & Street, 2001; Messmann & Mulder, 2012; Scott & Bruce, 1994; Tierney et al., 1999). During opportunity exploration, an employee recognizes needs or problems within their work context that create an opportunity for improvement or enhancement. Opportunity exploration requires awareness on behalf of the employee not only of their own work environment, but current trends, recent developments, and insights within one's broader field of work as well. After identifying an opportunity for improvement, the next task is to generate the idea. Idea generation is the suggestion and creation of ideas for products or processes that are new, applicable, and useful in addressing the previously identified problem, challenge, or improvement

needs. Idea generation requires a critical examination of predominant beliefs and the public discussion of the changes necessary to solve the identified problem. Idea promotion involves championing and legitimizing the envisioned innovation by informing and winning the support of colleagues and supervisors, building a coalition of allies that will "own" the new process by providing the necessary information, resources, and support, and diffusing ideas across the boundaries of one's work context. Finally, idea realization involves the creation of a physical or intellectual prototype of the innovation, experimenting and refining it based on feedback, and planning on its strategic integration into organizational practice. Idea realization includes not only the development of the innovation but also making it part of regular work processes and testing and modifying the innovation-based outcomes (De Jong & Den Hartog, 2010; Messmann & Mulder, 2012).

The tasks of opportunity exploration, idea generation, idea promotion, and idea realization are not linear, discrete, or independent. Rather, they are interconnected, mutually dependent, and connected through feedback loops. Individuals may be involved in the accomplishment of one or more of these tasks simultaneously and repeatedly (Dorenbosch et al., 2005; King, 1992; Scott & Bruce, 1994). In developing an innovation, progress depends on the successful accomplishment of these activities (Anderson et al., 2014) and involves forward, backward, and sideways steps (King, 1992; Widmann & Mulder, 2018). For example, progress depends on finding support for the innovative idea. If no support is found for an idea, it must be adapted (idea generation), and resource requirements must be checked again (opportunity exploration). The innovation process may also stagnate on one dimension of IWB. For instance, if a problem occurs during idea realization, innovation development can stall until the problem is solved. In that situation, team members must seek support to solve the problem (idea promotion), adapt the idea, and check resources and opportunities within the organization (Widmann et al., 2016).

In alignment with this conceptualization of innovation as a complex, iterative, and non-linear process, Messmann and Mulder (2012) define innovative work behavior (IWB) as "the sum of physical and cognitive work activities carried out by employees in their work context, either solitarily or in a social setting, in order to accomplish a set of tasks that are required to achieve the goal of innovation development" (p. 45). This definition implies that IWB is both dynamic and context-bound. While previous studies (De Jong & Den Hartog, 2010; Janssen, 2000; Scott & Bruce, 1994) somewhat neglected these attributes, Messmann and Mulder (2012) argue that IWB is dynamic because of the complex relations between past work activities and outcomes and the activities carried out in the present and future. IWB is also considered dynamic because it is social in nature, consisting of social activities that are carried out collaboratively and are impacted by the input and feedback of others. In fact, workplace happiness is the most significant determinant of employees' innovative behavior, while coworker support plays a significant mediating role (Bani-Melhem et al., 2018). In addition, IWB is context-bound because employees' work activities and associated outcomes are primarily meaningful only in relation to the specific work context within which they are carried out. Both the dynamic and the context-bound nature of IWB have implications not only for the development of innovations but for employees' learning as well.

Given the dynamic and context-bound nature of IWB, five criteria based on theoretical arguments and methodological requirements have been proposed to measure it (Bauer & Mulder, 2010; Messman & Mulder, 2012). IWB must (1) be measured based on actual work activities (De Jong & Den Hartog, 2007; Kleysen & Street, 2001); (2) be grounded in the context in which work activities are carried out; (3) include reflection as a distinct task; (4) include the social aspects of innovation development; and (5) fulfill several aspects of content and construct validity.

Facilitating IWB

Research into IWB has shown several individual and social determinants that contribute to innovation at work. In their systematic literature review, Thurlings et al. (2015) distinguished several key factors critical to innovation at work that fell into two main categories: (a) individual attributes (self-efficacy and attitudes and beliefs) and (b) support from the environment (colleagues, managers, organizational culture, and facilities and resources). The individual attributes of self-efficacy, curiosity, attitudes, and beliefs all showed a positive influence on teacher innovative behavior. The key environmental factors of "the role of other actors" and "facilities and resources" showed positive influence as well. Prior studies support these findings, as "work context" and "perception of support for innovation and innovative behavior" have been found to be positively associated with IWB as well (Amabile et al., 1996; Carr et al., 2003; Hülsheger et al., 2009). These organizational contexts include the climate being perceived as one that is oriented toward creativity and innovation (Scott & Bruce 1994) while supporting and motivating individuals "in their functioning independently and in pursuit of new ideas" (Siegel & Kaemmerer, 1978, p. 559).

IWB in Cross-Boundary Work Teams

As mentioned previously, growing complexity, diminishing resources, and other market stresses make it necessary for organizations to innovate if they are to survive. The development of new products, the ability to quickly adopt new technologies, and focus on continuously improving production methods and procedures are vital for organizations to prosper (Fay et al., 2015). Because of the complexity of the challenges, many organizations have adopted organizational structures that involve the use of teams. Among teams that are relatively autonomous and self-directed, teamwork can enhance innovation in two ways: first, teamwork changes the affective experiences, cognitions, and attitudes of individuals, which in turn enhance their creativity and ability to solve problems creatively; and second, teamwork supports the development of positive

structural changes to the organization such that the flow of ideas and knowledge is enhanced and organizations become more flexible (Fay et al., 2015).

Often, employees need to work collaboratively on a team to learn together, while cooperating with other institutions to develop novel, innovative solutions (Truijen et al., 2013). This type of structure is what Edmondson and Harvey (2017) describe as a *cross-boundary* team. In contrast to a team that is well-bounded, reasonably stable, and functionally homogeneous, a cross-boundary team is a newly formed temporary group, with fluid membership, which needs to develop rapidly into a high-performing unit to take on an unfamiliar project. The team must collectively accomplish organizationally relevant and knowledge-intensive tasks and develop solutions to meet various challenges. Similarly, in many organizations, cross-boundary teams are created to accomplish work tasks "as independent units comprising at least two individuals from different domains, embedded in the organizational context" (Widmann et al., 2019, p. 299). Team members interact socially and work together on organizationally relevant tasks that require the development of novel solutions to everyday problems (Kozlowski & Bell, 2003; Lehmann-Willenbrock, 2017; Widmann et al., 2019). These novel and knowledge-intensive tasks are non-routine, and accomplishing them requires experience from different disciplines (Widmann & Mulder, 2018). Research on team diversity has stressed the benefits of teams that encompass a range of distinct and non-redundant, task-relevant resources. For example, teams can increase their knowledge resources by bringing a diverse group together, with each member having unique ideas and perspectives that would otherwise have been unavailable to the team (Edmondson & Harvey, 2017; Williams & O'Reilly, 1998).

However, evidence has also shown that work teams are not necessarily more innovative than individual employees who more loosely interact with the goal of innovation development. Further, team members tend to discuss common (shared) knowledge rather than unique knowledge, even if the unique knowledge is crucial to their

team's endeavor (Stasser et al., 1989; Stasser & Titus, 1985; Stewart & Stasser, 1995). As a result, the diverse knowledge of cross-boundary team members will not improve team performance without focused efforts to ensure the inclusion of unique knowledge (Edmondson & Harvey, 2017).

Carlile (2004) proposed that when trying to integrate knowledge across boundaries, teams face syntactic, semantic, and pragmatic boundaries. Syntactic boundaries are manifested through differences in how language is used. A common language must be developed to process information across the boundary. Within the context of this study, universities and school districts may use different terms, but can relatively easily develop a common language to facilitate communication. Semantic boundaries refer to systems of interpretation that produce translation challenges for diverse individuals engaging in novel settings (Skilton & Dooley, 2010). Through differences in interpretation, team members may look at the same phenomenon but see different problems, opportunities, and challenges. Thus, in addition to common lexicons, common meanings must also be developed. Finally, pragmatic boundaries refer to different and potentially competing interests or agendas across individuals entering situations that offer a great deal of novelty. As team members may vary in their worldviews, what team members deem as "interesting" or "valuable" may vary as well. As such, cross-boundary teaming requires the development of shared interests through negotiation. How diverse experts come together, overcome differences in understanding and interests, and create value remains areas in need of both theoretical and practical advances (Edmondson & Harvey, 2017). So, while cross-boundary work teams have significant potential for engagement in IWB, with few exceptions, existing studies on IWB neglected teams and, more generally, the group level as a unit of analysis (Hammond et al., 2011; Van der Vegt & Janssen, 2003; Widmann et al., 2016). Therefore, additional study into how cross-boundary work teams practice IWB is necessary.

Conceptualizing Team Innovative Work Behavior (TIWB)

Innovation development is a dynamic and complex process that requires the accomplishment of several interdependent requirements and the involvement of more than a single individual. Through the social aspects of innovation development, there is a greater chance that innovation opportunities will be identified and ideas will be generated. After prototyping and refinement, those innovative ideas can be promoted and accepted by a coalition of supporters. These are "inextricably social tasks" (Messmann & Mulder, 2012). Recognizing the role of social interactions in innovation development, the importance of teams as an organizational structure, and seeking to understand interdependencies among individual team members' contributions to innovation development, Messmann and Mulder (2012) articulated team innovative work behavior (TIWB) as: "the sum of all physical and cognitive work activities that teams carry out in their work context to attain the necessary requirements for the development of an innovation" (p. 432).

This concept of TIWB builds on the previous concept of IWB, itself rooted in the two-stage models of creativity and innovation implementation (Amabile et al., 1996). In alignment with this, TIWB consists of several behaviors that reflect the team contributions to the innovation process—specifically, team creative behaviors (TCB), which encompass all contributions of teams that are related to the IWB tasks of opportunity exploration (i.e., identifying a problem or need for innovation) and idea generation (identifying potential solutions); and team innovative behaviors (TIB), which are the IWB activities that relate to idea promotion (building support) and idea realization (prototyping and refining for routine use).

When compared to the innovative work behavior of individuals, TIWB offers several advantages attributed to work teams. First, TIWB is more socially interactive, and different responsibilities in the innovation process may be more clearly distributed. Additionally, task and goal interdependence among persons involved in the innovation

process may be more pronounced, and team members may expect more commitment to each other's responsibilities. Therefore, "TIWB represents a special case of innovative work behavior with more coordinated activities, and consequently, a potentially accelerated process of innovation development" (Messmann & Mulder, 2012, p. 433). However, despite these advantages, and with few exceptions (see Messmann & Mulder, 2012; Widmann & Mulder, 2018), research into TIWB is scarce.

Team Learning

More and more organizations depend on teams to meet global competition and rising customer expectations. High-performing teams are necessary to meet these demands, but unfortunately, such teams are all too rare (Marquardt et al., 2010). London and Sessa (2007) stated that due to the importance of team and group work within organizations, group development and facilitation are an important part of human resource development. An important focus in the research in this area is on team learning, which is also found to be associated with effective team functioning (Decuyper et al., 2010; Raes et al., 2014). Team learning has been conceptualized in several ways in the research literature. Kasl et al. (1997) define team learning as "a process through which a group creates knowledge for its members, itself as a system, and for others" (p. 229). Their model describes team learning processes, conditions that support team learning, and modes of functioning as a learning system. Team learning literature focuses on how behaviors such as giving feedback, sharing information, boundary-crossing, team reflexivity, and experimentation affect the construction of shared mental models and team effectiveness (De Dreu, 2007; Edmondson et al., 2001; Raes et al., 2014; Savelsbergh et al.., 2012; Van den Bossche et al., 2006; Zellmer-Bruhn & Gibson, 2006).

In the following section, I conceptualize team learning as a group process rather than solely an outcome. Utilizing the models of Decuyper et al. (2010) and others in

existing literature, I present an integrative team learning model that organizes and combines team learning processes, outputs, and inputs into a coherent whole. In alignment with this model, I then conceptualize team learning behaviors (TLB)—what people *do* when they learn—and identify the categories of TLB most relevant for this study. Finally, I will identify the different team learning conditions (TLC) that can hinder or enhance effective team learning and potentially influence team innovative work behavior (TIWB) as well.

Team Learning Behaviors (TLBs) Conceptualized

For cross-boundary work teams to maximize their organizational value and achieve breakthrough innovation, they need to be able to learn and to translate what they have learned. In the review of perspectives on team learning in previous empirical research, Edmondson et al. (2007) identified three distinct areas of research that provided insight into how teams learn: (1) testing and explaining differences in rates of improvement within teams (learning curves); (2) the relationship between team cognitive systems and team task performance; and (3) team learning as a group process rather than as an outcome (Savelsbergh et al., 2012). This study follows the third research tradition whereby team learning is measured in terms of team behaviors and activities.

Previous research (Argyris & Schön, 1978; Edmondson, 1999; Gibson & Vermeulen, 2003; Kasl et al., 1997; Van der Vegt & Bunderson, 2005) has articulated several team learning behaviors that point to an ongoing process of collective reflection and action. Dechant et al. (1993) portrayed team learning as an interrelated set of processes that interact with each other to produce new knowledge and enabling conditions that affect a team's ability to learn. In their later work, Kasl et al. (1997) articulated the learning processes and conditions that typify a team's operation as a learning system. These four "modes" are *Fragmented*, *Pooled*, *Synergistic*, and *Continuous.* In the Fragmented mode, individuals learn separately, but the group does not

learn as a holistic system. In the Pooled mode, individuals begin to share information in the interest of group effectiveness, but in "small clusters" or other suboptimal ways whereby the entire group still does not learn or develop its own unique knowledge. In the Synergistic mode, members create knowledge mutually and "divergent perspectives are integrated through dialectical processes that create shared meaning schemes" (p. 230). In this mode, shorthand is developed for the team's experiences, and each individual contributes to the team's knowledge. This results both in the integration of the team's knowledge into individual (personal) meaning schemes and an increased frequency of sharing the team's knowledge outside of the group. Finally, the Continuous mode describes a team in which synergistic learning becomes habitual and is not simply the additive result of individual knowledge but rather more than the proverbial sum of the parts.

In their case studies, Kasl et al. (1997) recognized not only the initial interpretation of an issue or situation based on prior experience ("framing"), but also the process of transforming that interpretation through interaction with other team members (experimentation and boundary-crossing) into a new understanding ("reframing"). According to Kasl et al., while experimentation and boundary-crossing are a necessary initiator of the reframing process, actual learning only occurs through a collective process of not only engaging in dialog and listening to the perspectives of others but integrating and sharing these views as well (Savelsbergh et al., 2012).

In his review of several team learning process models, Knapp (2010) grouped each model according to its process structure. Models were broken into two types: (a) the systems-driven input–process–output (IPO) framework (McGrath & Altman, 1966) of teams; and (b) the input–mediator–output–input (IMOI) model indicating the complex, nonlinear, cyclical nature of teams. Knapp (2010) attempts to synthesize various models whereby team learning is described across models as a "process of reflection and adaptation influenced by psychological safety" (Edmondson, 1999, p. 353), "a process of

knowledge creation through the transformation of the group experience" (Kayes et al., 2005, p. 351), "collective metacognition and reflexivity based on social cognitive theory" (McCarthy & Garavan, 2008, p. 4), and "a social process of reaching mutually shared cognition" (Van den Bossche et al., 2006, p. 492). Most models and discussions of team learning linked team performance to organizational performance. Knapp's (2010) proposed model conceptualized team learning as a process while realizing that it is affected by external structures and context and that it results in some performance or effectiveness outcome (see Figure 1).

Figure 1. *Model of the Team Learning Process* (Knapp, 2010)
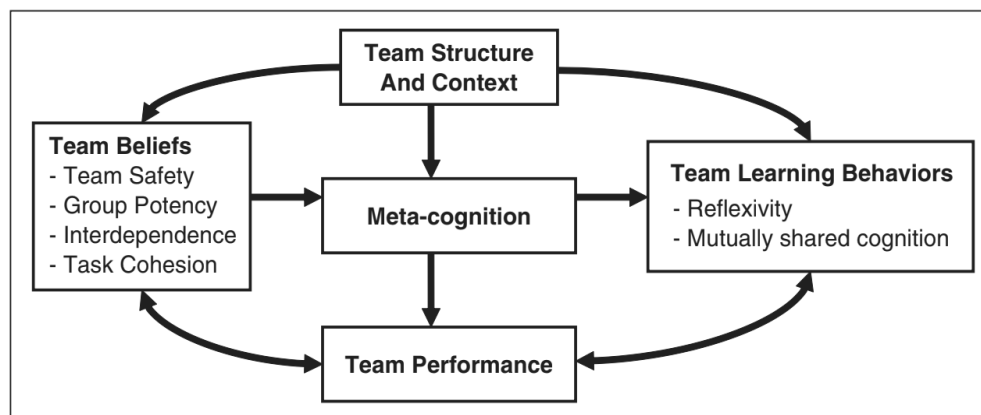
In this model, team learning is "conceptualized as a combination of reflexivity and mutually shared cognition. These constructs appear to reflect the intent of the conceptualizations of team learning posited in other models because they include the reflective practice and collective metacognition components discussed in numerous models" (Knapp, 2010, p. 293). Central to Knapp's model is the significance of metacognition, which allows teams to better understand their own beliefs and how those beliefs influence team performance.

An integrative model of team learning was developed by Decuyper et al. (2010) and was based on a review of existing literature from different disciplines. Their

framework is a systemic, cyclical, and integrative team learning model that organizes and combines team learning processes, outputs, inputs, catalyst emergent states, and time-related variables into a coherent whole. Based on the literature, the authors derived eight categories of team learning processes: sharing, co-construction, constructive conflict, team reflexivity, team activity, boundary-crossing, and storage and retrieval. These team learning processes "take the team towards adaptive, generative or transformative learning outputs at various dimensions and levels. These outputs are sometimes immediately observable in changing team performance. However, often they remain conceptual, as changes in the teams' capability to act differently" (p. 115).

Decuyper and his colleagues' integrative model offers several advantages when considering team learning as a holistic construct. First, the model combines both a process and an outcome perspective on team learning, with emphasis on both the occurrence of interpersonal behaviors (i.e., sharing information, challenging assumptions, framing/reframing, etc.) as well as certain manifest or latent outcomes (Dechant et al., 1993; Edmondson, 1999; Ellis et al., 2003; Sessa & London, 2008; Van den Bossche et al., 2006, Wilson et al., 2007). Second, the model considers team learning as a "multi-level phenomenon" emphasizing team-level learning processes and outputs while categorizing individual, organizational, and cross-level learning processes as important inputs and outputs of team-level learning. Third, the model integrates aspects of three complementary and equivalent learning metaphors: (a) the *acquisition metaphor*, which focuses on team members acquiring similar 'knowledge' (shared mental models or shared cognition); (b) the *participation metaphor*, where team members develop a shared discourse and identity by participating in team activities and the broader community of practice; and (c) the *knowledge-creation metaphor* for team learning as co-creation, collaborative expansion, innovation, and transformation (Engeström & Sannino, 2010; Gergen, 1994; Paavola et al., 2004; Sfard, 1998; Wenger & Lave, 1991). Finally, this integrative learning model is both descriptive and prescriptive, describing what teams do

when they learn (sharing, co-construction and constructive conflict; storage and retrieval) and offering indications about what teams need to do to learn effectively (team reflexivity, boundary-crossing, and team activity). Ultimately, the model integrates the most essential forms of team learning conditions, behaviors, and outcomes. For this study, the team-level processes are referred to as TLBs (see Figure 2).

Figure 2. *Integrative Systemic Model for Team Learning* (Decuyper et al., 2010)
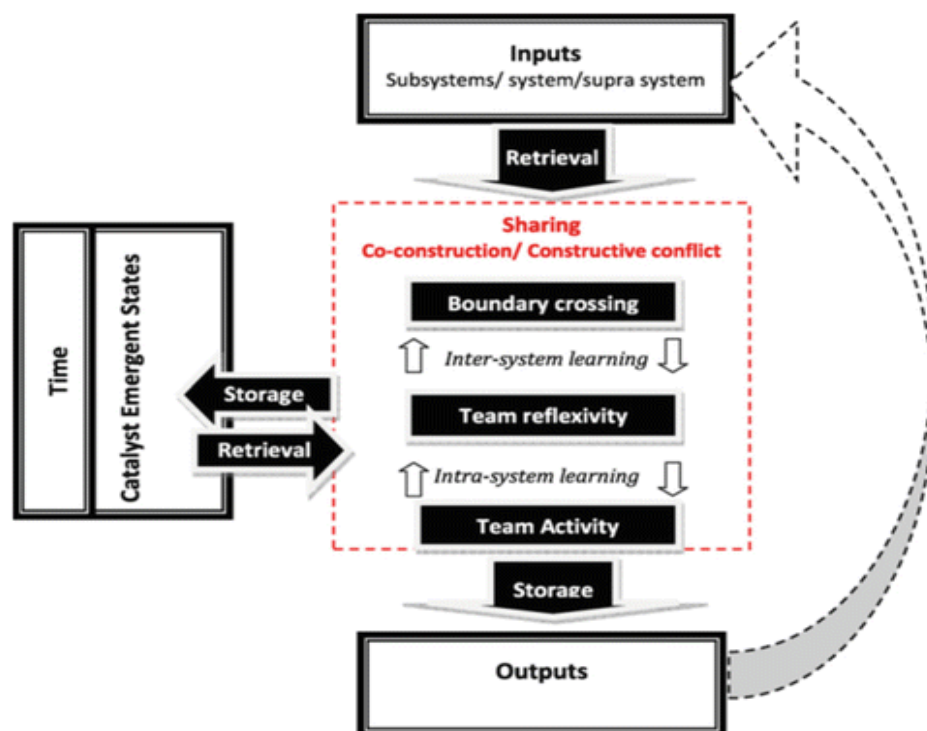
In alignment with Decuyper et al. (2010) and Widmann and Mulder (2018), three categories of TLB are distinguished for this study. The first category, *basic behaviors*, describes what happens when teams learn. Based on Wilson et al. (2007) and Van den Bossche et al. (2006), the three categories of basic behaviors are knowledge sharing, co-construction, and constructive conflict. The basic team learning processes result in change but do not necessarily lead to improvement (Sessa & London, 2008). The second category, *facilitating behaviors*, consists of team reflexivity and boundary

spanning. Team reflexivity refers to team members' interaction and discussion about strategies, tasks, and processes to inform vision and goal setting, while boundary spanning describes the communication of a team with others outside the team seeking information, resources, and support (Hirst & Mann, 2004). Facilitating behaviors influence both the efficiency and effectiveness of team learning. Finally, the third category of TLB, processes of *storage* and *retrieval*, is necessary for bridging the gap between past team learning and present or future teamwork/team learning processes. By means of storage and retrieval, shared knowledge, developed procedures, shared ideas, plans, and habits are saved in the 'software' (i.e. ,individual memory or other immaterial means) and the 'hardware' (i.e., databases, artifacts, or other material means) of the team, in such a manner that they can serve for later use or subsequent inspection (Decuyper et al., 2010). Despite these conceptual distinctions, TLBs are interconnected throughout the categories and do not follow a linear order. Rather, different types of TLBs occur in varying combinations, either simultaneously or sequentially (Decuyper et al., 2010).

Team Learning Conditions (TLCs)

Different conditions can hinder or enhance effective team learning by influencing TLBs (Decuyper et al., 2010; Edmondson, 1999). Some of the most discussed barriers of team learning identified in the literature include groupthink (Aldag & Fuller, 1993; Janis, 1972), diffusion of responsibility (Wallach et al., 1964, in Kayes et al., 2005), dominant leader (Edmondson et al., 2001), Abilene paradox (Harvey, 1974), free riding (Wagner, 1995), social loafing (Karau & Williams, 1993; West, 2004), and conflict escalation (McGrath et al., 2000; Senge, 1990; Wildemeersch et al., 1997). Due to the many potential pitfalls teams experience, they often fail to learn (Edmondson, 1999; Van den Bossche, 2006). In their case studies, Kasl et al. (1997) describe team learning as a dynamic process in which both team learning processes, and the conditions that support them, change qualitatively as the team adopts different modes of learning (i.e.,

Fragmented, Pooled, Synergistic, and Continuous). Kasl and her colleagues identified three TLCs. The first, Appreciation of teamwork, reflects the degree to which members value playing a team role and includes the openness of team members to hearing and considering others' ideas. The second, Individual expression, reflects the extent to which members have the opportunity to give input on forming the team's mission and goals, influence the team's operation on an ongoing basis, and feel comfortable expressing objections. The final TLC, Operating principles, reflects the extent to which the team has organized itself for effective and efficient operation, the development of shared beliefs, values, and purpose, and the balances of task management and relationship management. The first condition, appreciation of teamwork, strongly influences the remaining two. The meaning that individuals attach to teams is the context for both individual expression and operating principles. "In the Fragmented mode, the focus is on meeting the needs and enhancing the value of the individual contributor. In the Pooled mode, members continually balance individual needs against the group's needs. In the Synergistic mode, members have acquired a deep understanding of the creating potential in teams" (Kasl et al., 1997, pp. 241-242).

In their review of team learning literature, Decuyper et al. (2010) found ten variables that were most commonly explored in the literature and seem to have the most influence on team learning: shared mental models, team psychological safety, group potency and team efficacy, cohesion, team development, team dynamics, interdependence, team leadership, team structure, organizational strategy, and systems thinking.

Shared mental models are the team members' shared, organized understandings and mental representations of knowledge about key elements of the team's task environment (Klimoski & Mohammed, 1994; Kozlowski & Bell, 2008). Shared mental models result from team learning processes, immediately reinforce them, and catalyze team learning. Team psychological safety is "a shared belief that the team is safe for

interpersonal risk-taking" and represents a sense of confidence that the team will not embarrass, reject, or punish someone for speaking up (Edmondson, 1999, p. 354). Group potency and team efficacy refer to the team's level of confidence. The first refers to a more general collective belief that the group can be effective, whereas the latter refers to a more concrete shared belief that the group is capable of organizing and executing specified tasks (Mathieu et al., 2008). Cohesion consists of the forces acting on all the members to remain in the group (Festinger et al., 1950; Van den Bossche et al., 2006). This concept distinguishes between social cohesion (emotional bonds) and task cohesion (goal commitment), with the latter considered more important for team success. Team development and team dynamics describe the process of team formation and how both team learning processes and conditions evolve over different team-learning stages. For example, this process of team formation can be seen in the different stages of the cyclical model of Wheelan and Mckeage (1993) and the sequential model of Tuckman and Jensen (1977), which include forming, storming, norming, performing, and adjourning.

Team leadership is often defined in terms of the conditions or functions that need to be present in a team in order to learn and work effectively. For example, Drath et al. (2008) define leadership in terms of three basic functions: direction (vision), alignment (organization and coordination), and commitment (engagement toward vision). Interdependence describes team members' perceptions of whether others are necessary to achieve their goals. Interdependence can be (a) positive when individuals perceive that they can reach their goals if and only if the other individuals achieve their goals (cooperative link); (b) negative when individuals perceive that they can reach their goals if and only if the other individuals fail to obtain their goals (competitive link); or have (c) "no interdependence," whereby individuals perceive that they can reach their goal regardless of whether other individuals in the situation attain or do not attain their own. Team structure refers to how teams are organized and how member roles function. For example, when comparing three team structures and their effect on team learning, Ellis

et al. (2003) identified (a) divisional structures that employ broadly defined roles and provide broad information sources to team members; (b) functional structures that define roles more narrowly and provide the team members with unique sets of information; and (c) pair-based structures, offering a combination of both previous structures, and having the best effect on team learning. Organizational strategy refers to many inputs for team learning at the level of the organization or the environment. Some example inputs from the literature include organizational culture (Bain, 1998; Homan, 2001; Senge, 1990; Williams & O'Reilly, 1998; Zellmer-Bruhn & Gibson, 2006), national culture (Yorks & Sauquet, 2003), reward system (Slavin, 1980, 1996; Sundström et al., 2000; Vinokur-Kaplan, 1995), authority system (Bain, 1998; Brooks, 1994; Bunderson & Sutcliffe, 2003; Foldy, 2004; Gerwin & Moffat, 1997; Homan, 2001), and knowledge management system (Argote et al., 2003; Gibson & Vermeulen, 2003; Zellmer-Bruhn & Gibson, 2006). Finally, Systems thinking reflects the capability of team members to think in terms of interdependent systems and to understand how their team is a system that is bound together dynamically and interdependently with its context and its subsystems (Salas et al., 2000; Sterman, 1994). Team members who are not capable of understanding this dynamic interdependence, "learn ineffectively and develop short term solutions that prove to be the problems of tomorrow" (Decuyper et al., 2010, p. 127; Senge, 1990).

Decuyper et al. (2010) organize the influencing variables into five categories: inputs at the level of the system (team leadership, interdependence, team structure), the subsystems (team member systems thinking) or the supra-system (organizational strategy), catalyst emergent states (shared mental models, team psychological safety, group potency or team efficacy, cohesion), and time-related variables (group development and team learning dynamics) (see Table 1).

Table 1. *Team Learning Influencing Variables* (Decuyper et al., 2010)

System Level	- team leadership - interdependence - team structure
Subsystem Level	team member systems thinking
Suprasystem	organizational strategy
Catalyst Emergent States	- shared mental models - team psychological safety - group potency or team efficacy - cohesion
Time-related Variables	- group development - team learning dynamics

Team Learning Conditions (TLCs), Team Learning Behaviors (TLBs), and Innovative Work Behavior (IWB)

Regarding the relationship between team learning conditions (TLCs), team learning behaviors (TLBs), and innovative work behavior (IWB), research has shown that TLCs can influence TLBs, which in turn influences IWB. Widmann and Mulder (2018) found that the TLCs of *team structure*, *interdependence*, and *group potency* can positively influence all three categories of TLBs studied—specifically, the *basic behaviors* of knowledge sharing, co-construction, and constructive conflict, as well as the *facilitating behaviors* of team reflexivity and boundary spanning; and *storage* and *retrieval*. However, the authors clarify that not all TLCs influence TLBs to the same degree. In accordance with other studies (e.g., Bunderson & Boumgarden, 2010; Bresman & Zellmer-Bruhn, 2013), team structure seems to influence all TLBs, task interdependence influences three behaviors, and group potency was only found to influence team reflexivity. In their related study on TLBs and IWB of vocational educator teams, Widmann and Mulder (2018) found that the TLBs of knowledge sharing, team

reflexivity, boundary spanning, and storage and retrieval all relate positively to IWB, and team reflexivity and boundary spanning seem to be the most important behaviors for IWB. Other studies (Hu et al., 2009; Yu et al., 2013) support this, showing that knowledge sharing and interactive behavior among employees enhance innovative behavior. Knowledge sharing is important in a team to gain a shared understanding of the team's ideas and goals and can be considered a starting point. However, in order to transfer knowledge to new situations adequately, reflexivity is essential (West, 1996). An innovation-friendly climate pushes employees to engage in IWB as well. Climate can be considered a factor of the TLC of "organizational strategy" presented above as culture, reward systems, and authority (or autonomy), and all contribute to climate. Yuan and Woodman (2010) and Scott and Bruce (1994) found that organizational climates that are perceived as supportive and empowering are positively related to IWB as well (Jain, 2015).

Summary

Innovation is essential for organizations to remain competitive and ultimately successful. While they lack traditional triggers for innovation found in the private sector, knowledge-intensive public sector organizations (KIPSOs) like universities face internal and external pressures to innovate as well. The cultivation of employees' innovative work behavior (IWB) as part of a cross-boundary work team has the potential to catalyze this change. Team learning was explored from various perspectives and was presented through the lens of Decuyper et al.'s (2010) systemic, cyclical, and integrated model of team learning, which attempts to capture the complexity of team learning. Like IWB, team learning is a dynamic and temporal set of team behaviors. These can be influenced by different variables operating at multiple levels (organizational, team, and individual), generating changes or improvements over time for the team, its members, and the

organization (Decuyper et al., 2010). The somewhat limited research on individual and team innovative work behavior (TIWB), its facilitators and barriers was explored and found to have been influenced by certain team learning conditions (TLCs) (Messmann & Mulder, 2012; Widmann & Mulder, 2018). In the case of innovation development, which depends on team characteristics, there is evidence that team learning behaviors (TLBs) such as knowledge sharing and team reflexivity can foster IWB (Bednall et al., 2014; Widmann et al., 2019). The application of the team learning literature to innovative work behavior in the public sector may present challenges, as cross-boundary teams may face different obstacles than traditional teams. Additionally, success may be defined differently in the public vs private sector. However, the extant literature can be used as an initial framework for understanding the dynamics of TIWB and team learning.

Conceptual Framework

The conceptual framework for this study brings together processes of innovative work behavior (IWB), team learning, team learning behaviors (TLB), and the team learning conditions (TLC) that influence these processes. The unit of analysis for this study is a cross-boundary work team attempting an innovative redesign of a principal preparation program. Therefore, the focus of this framework is on how the team learns, what it learns, and how this learning translates into innovative work behaviors. The framework draws on the work of Widmann et al. (2016, 2019), Widmann and Mulder (2018), and Decuyper et al. (2010) in conceptualizing how the various aspects of team learning relate to each other and innovation development. In alignment with this research, this study focuses on the TLBs that are part of basic behaviors and facilitating behaviors that are important for generating shared knowledge; and the TLCs that have been shown to influence team learning. While three TLBs (knowledge sharing, team reflexivity, and boundary spanning) and three TLCs (team structure, interdependence, and group

potency) have been previously studied in the context of IWB (Widmann et al., 2019; Widmann & Mulder, 2018), this study sought to uncover any of the influencing variables identified by Decuyper et al. (2010). Although processes of TLBs and TLCs are not distinct, they are presented here as such for modeling purposes. Based on this literature review, the conceptual framework for this study is depicted in Figure 3.

Figure 3. *Conceptual Framework for the Influence of TLC and TLB on TIWB*

Contextual Factors:
Team Learning Conditions (TLC)
team structure
interdependence
group potency
shared mental models
team psychological safety
team efficacy
cohesion
team development
team dynamics

Team Innovative Work Behavior (TIWB)
Team creative behaviors (TCB)
opportunity exploration
idea generation

Team innovative behaviors (TIB)
idea promotion

Interpersonal Factors:
Team Learning Behaviors (TLB)
Basic behaviors
knowledge sharing
co-construction
constructive conflict

Facilitating behaviors
team reflexivity

Based on the work of Widmann et al. (2016, 2019), Widman and Mulder (2018), and Decuyper et al. (2010).

Chapter III

METHODOLOGY

Introduction to Research Design

The purpose of this case study on innovative work behavior (IWB) in higher education was to learn more about which team learning behaviors (TLBs) and team innovative work behaviors (TIWBs) are exhibited by cross-boundary knowledge-intensive public sector work teams to understand how these complex organizations can leverage learning toward practice improvement. Little is known about how universities innovate across boundaries. By becoming more innovative and responsive to changing customer expectations, universities can come closer to achieving the type of exemplary features, content, and experiences associated with effective leadership preparation. This will make them greater assets to the districts that hire their graduates and enhance their long-term sustainability. This study focused on understanding experiences of a university-based cross-boundary work team attempting an innovative redesign of a principal preparation program. The following research questions were explored:

1. What, if any, team innovative work behaviors (TIWBs) and team learning behaviors (TLB) were experienced by the cross-boundary work team?

2. To what extent, if any, did their work as a team result in perceived learning?

3. In what ways, if at all, has the cross-boundary work team's practice changed as a result of participating in the redesign process?

- In what ways, if at all, has the individual team members' daily practice within their respective organizations changed as a result of participating in the redesign process?

4. How, and to what degree, have contextual factors enabled and/or impeded the learning and practice of cross-boundary work team members?

In order to answer these research questions, I conducted a case study design bounded by the experiences of a purposefully sampled cross-boundary work team. The current chapter lays out the methodological foundations of this research design. I begin with an overview of the study design, including a justification for the use of a case study design. Next, I describe the data collection approach, including the use of a pre-interview questionnaire, a group interview, critical incident interviews, observations, and document and artifact review. Then I discuss the areas of information needed, description of the sample, methods for assuring the protection of human subjects, and methods for ensuring the trustworthiness of the research. Finally, I conclude the chapter with a discussion of the validity/reliability challenges and potential resolutions, and limitations.

Rationale for Case Study Methodology

This research was well-suited to a case study method, which allows researchers to "explore a real-life, contemporary bounded system ... over time, through detailed, in-depth data collection involving multiple sources of information" (Creswell, 2013, p. 97). Case study research, one of the most prevalent forms of social science research, has been widely used in business, education, psychology, sociology, political science, social work, community planning, and economics (Dooley, 2002; Merriam, 1998; Yin, 2003). From a process perspective, Yin (2003) has defined a case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly

evident" (p. 13). Yin also articulated three conditions that are useful in determining whether case study should be used as a research strategy; first, when the researcher is interested in "how," "what," and "why" questions; second, when the researcher is interested in contemporary events; and finally, when the researcher cannot control or manipulate behavioral events. Under these circumstances, case study research is deemed an appropriate strategy (Swanson & Holton, 2005). Yin (2003) has articulated five rationales for selecting a single case study approach: critical case, extreme or unique case, representative or typical case, revelatory case, or longitudinal case. In alignment with Yin's rationale on the selection of a critical case, this study offered an opportunity to test "a well-formulated theory for which there are a clear set of propositions, and the selection of a critical case enables the researcher to confirm, challenge, or extend theory" (Swanson & Holton, 2005, p. 337; see also Yin, 2003). The primary data collection methods consisted of a pre-interview questionnaire, semi-structured interviews utilizing a Critical Incident Technique (Flanagan, 1954), and a group interview with members of the cross-boundary team. I also directly observed the team's interactions over several points. Finally, I reviewed team documents and artifacts as a way of understanding how the lived experiences described by participants compared to the official goals articulated by their own organizations and the funder.

Areas of Information Needed

Several areas of information were important to determining participant suitability for the research and to answer the research questions. I focused on gathering information within the following four categories: (a) contextual, (b) perceptual, (c) demographic, and (d) theoretical as described below (see Table 2).

- Contextual—To enhance my understanding of the organizational contexts within which this team functions, I conducted a review of publicly available

organizational documents such as organization websites, annual reports, state

reports, and, when available, artifacts and other documents created as part of

the redesign process. This information provided insights into the organization's

history, mission, vision, values, and course and program offerings. Document

review was used to provide an understanding of the contextual environments

where the participants operate and insights into the organization's influence on

team behaviors.

- Perceptual—The perceptual data were collected through in-depth interviews

  based on the study's research questions. Information gathered captured

  participants' perceptions of team learning, facilitating or inhibiting conditions,

  and any resulting innovative work behaviors experienced within the team (see

  Appendix C for the critical incident technique [CIT] interview protocol). A

  group interview was conducted to gain contextual insight on the team's history,

  purpose, and functioning (see Appendix B for group interview protocol).

  Secondary interviews were conducted with select staff members within the

  participating organizations to capture their perceptions of organizational

  conditions for innovation, and with the funder to gain insight into the design of

  the initiative that instigated the formation of the cross-boundary work team.

- Demographic—I distributed a pre-interview questionnaire (see Appendix A) to

  collect vital information from each participant in advance of the in-depth

  interview. Participants were asked to provide profile information by completing

  a demographic inventory to obtain basic demographic data (i.e., age, gender,

  ethnicity, level of education) and professional information (i.e., current

  employer, job title, professional experiences). The data obtained from the

  demographic inventory were used to describe the sample population, ensure

  that participation criteria are met, and for comparison across organizations and

  contexts during data analysis.

- Theoretical—To shed light on what is already known, a literature review has been conducted to further the understanding of the phenomenon being studied in three major areas: (1) Team Learning, (2) Innovation, and (3) Innovative Work Behavior.

Table 2. *Methods Table*

Research Question	Data and Methods Used
RQ1: What, if any, team innovative work behaviors were experienced by the cross-boundary work team?	▪ Group interview (one-hour) ▪ Semi-structured critical incident interviews (one-hour) ▪ Direct observations from site visits and internal/external team meetings ▪ Examination of documents and other artifacts produced as a result of the redesign process (i.e. revised courses and sequencing, meeting protocols, work tasks, etc.)
RQ2: To what extent, if any, did their work as a team result in learning?	▪ Semi-structured critical incident interviews (one-hour)
RQ3: In what ways, if at all, has inter-disciplinary work team's practice changed as a result of participating in the redesign process? RQ3A: In what ways, if at all, has the individual team members' daily practice within their respective organizations changed as a result of participating in the redesign process?	▪ Semi-structured critical incident interviews (one-hour) ▪ Examination of documents and other artifacts produced as a result of the redesign process (i.e. agendas, protocols) to see how the use of time, topics of discussion, and workflow may have changed.
RQ4: How, and to what degree, have contextual factors enabled and/or impeded the learning and practice of cross-boundary work team members?	▪ Group interview (one-hour) ▪ Semi-structured critical incident interviews (one-hour)

Research Phases

Four stages of data collection and analysis, outlined in Table 3, aided in the collection of the areas information was needed and, at the same time, fulfilled the

intention of a descriptive, single-case study approach. To complete this research, I utilized five data collection methods: (1) a pre-interview questionnaire, (2) a group interview, (3) a semi-structured critical incident (CI) interview, (4) field observations, and (5) review of team documents and artifacts. Initially, I sent a pre-interview questionnaire to the organizational representatives who are members of the cross-boundary work team that are the focus of this case. In addition to collecting demographic information, an analysis of the questionnaire data confirmed participant suitability for the research and helped sensitize them to the topic. To establish a common understanding of innovative work behavior (IWB) and team learning behavior (TLB), these terms were explained first and key prompts were utilized. Following this explanation, the questionnaire asked respondents to reflect on two to three specific incidents where the team exhibited some of the IWB and TLB characteristics described above. Based on insights gleaned from the pre-interview questionnaire, the next phase of data collection consisted of a group interview and semi-structured critical incident (CI) interviews to go in-depth into participant experiences with innovative work behavior and team learning. These interviews were conducted over 60 days based on subject availability, and brief follow-up interviews were scheduled when additional clarification was necessary. I utilized the interviews to: (a) understand the team's history, purpose, and function in greater detail, (b) clarify responses and probe any themes that emerged while looking across responses, and (c) explore if and how their views may have shifted as a result of the interview process. Direct observation of team meetings and team participation in professional learning communities and other network activities occurred at several points (3-4) throughout the team's redesign process. These observations enabled me to describe behaviors to corroborate participants' perspectives that could not be obtained by relying exclusively on interview data. Through ongoing and iterative data analysis, I looked for emerging patterns and themes and adjusted the study design as appropriate. In the final stage, I reviewed publicly available documents from the participants' organizations as

well as artifacts produced as a result of the redesign process (i.e., agendas, protocols, etc.) to see how the use of time, topics of discussion, and workflow may have changed. The final analysis pulls together data from all four data collection methods as the foundation for a discussion of findings.

Table 3. Staged Sequence of Data Collection and Analysis

Pre-Interview Questionnaire	Group Interview	Critical Incident Interview	Direct Observation	Documents and Artifacts
Preliminary data analysis and participant selection	Contextual insight on the team's history, purpose, and functioning	Ongoing and iterative data analysis as interviews unfold	Ongoing and iterative data analysis through multiple observations	Document and artifact analysis and integration of data for final analysis

Study Sample

The study sample consisted of a cross-boundary work team attempting to redesign their university-based principal preparation program according to evidence-based principles and practices. The cross-boundary work team (hereafter referred to as the "redesign team") consisted of the following organizational members:

- Five (5) faculty members from Redwood State University (pseudonym)—a public research university based in California that serves as lead partner of the cross-boundary work team;

- Four (4) senior administrators from Border Field County Public Schools, Carlsbad County Public Schools, and Palomar Public Schools (pseudonyms)—urban public school districts in California that employ graduates of Redwood State University's program as principals; and

- Two (2) faculty members from the American Goldfinch University (pseudonym)—a public research university based in Washington state that serves as Redwood State University's "mentor program" providing technical expertise to the university; and

- One (1) senior staff member from the Education Foundation (pseudonym)—the funder of the University Curriculum Redesign Initiative (UCRI) was interviewed as well, though not an official member of the redesign team.

The assumption underlying the choice of these participants is as follows. Organizations engaged in developing and providing knowledge can be classified as knowledge-intensive organizations (Starbuck, 1992). Universities are public sector organizations largely involved with the transfer of knowledge-based services. Organizations characterized by these criteria are called knowledge-intensive public sector organizations (KIPSOs), which Bos-Nehles et al. (2017) defined as "organizations reliant on professional knowledge that provide knowledge-intensive services to create public value" (p. 380). Redwood State University (RSU) was selected as a site because they are considered innovators within their local context and can provide additional perspective into how, if at all, this cross-boundary innovation process differed from innovations they have attempted in the past.

The selected RSU faculty were those most directly involved in developing and implementing course content. The partnering districts had existing relationships with RSU prior to engaging in the current redesign and provided perspective on how and if their current experience differed from their previous relationship. American Goldfinch University faculty had already completed a program redesign and supported RSU through their own effort, giving them a unique vantage point on the university change process. The size of the sample is in alignment with a qualitative research approach and a purposefully selected sample (Yin, 2009). As the redesign team was still actively participating in the UCRI initiative at the time of this study, I aligned data collection

activities with their existing work activities (which include several previously scheduled meetings and observation opportunities) to ensure sufficient access to the team without creating an undue burden.

Methods to Ensure Participant Protection

Beyond the formal procedures required by the Institutional Review Board (IRB), which included mandatory training, a completed IRB application, and signed participants' rights (Appendix E) and consent forms (Appendix F), care was taken to ensure that the study was conducted with great respect and with as little disruption as possible to the work of the participants. As a philanthropic professional, and a representative of the organization funding the initiative in which the participants are engaged, I recognized the explicit and implicit power dynamics that existed as well as the philosophical, ethical, and political issues that informed the kinds of relationships I wanted to establish (Maxwell, 2013). I worked to mitigate these issues in a few specific ways. First, the site was selected, in part, because I had no managerial or financial authority over the participants, nor was I directly involved in their work. I believed this would reduce the likelihood that my engagement with them would be seen as either unduly coercive or potentially advantageous within the context of their funded work. Further, in an attempt to ensure that this study would not be unnecessarily burdensome on the participants, whose daily workloads are considerable, I scheduled as many key informant interviews and observation opportunities around existing, previously scheduled "grant activities," such as professional learning communities and site visits. I also conducted study activities well clear of any existing reporting requirements for the Education Foundation (or other funders if made aware) and took the district and university "life cycles" into account. I believed this would help achieve the goals of

equity and authentic participation without, as Burman (2001, cited in Maxwell, 2013) cautioned, "the perpetuation of existing power relationships" (p. 88).

Methods for Data Collection

Pre-Interview Questionnaire

As mentioned previously, I utilized five data collection methods: (1) a pre-interview questionnaire, (2) a group interview, (3) a semi-structured critical incident (CI) interview, (4) field observations, and (5) a review of team documents and artifacts. The objectives of the pre-interview questionnaire were to determine suitability for participation in the study, help prepare the participant for the critical incident interview, and collect demographic data. The pre-interview questionnaire had five sections: (1) demographic information, (2) professional information, (3) descriptions of team learning behaviors, (4) descriptions of innovative work behavior, and (5) identification of critical incidents. Demographic data were utilized during the analysis phase to compare interview data across contexts and included age, gender, nationality, ethnicity, and level of education. Professional information elicited data regarding the participants' current employers, job titles, job responsibilities, experience in K-12 and higher education, and role on the redesign team.

I used these data to determine participant suitability and later, during the analysis phase, for purposes of cross-case, inter-organizational comparison. In the third and fourth sections, I introduced the concepts of team learning behaviors (TLBs) and team innovative work behavior (TIWB). In the fifth and final section, I asked respondents to provide a description of a situation within their redesign efforts in which the team learned or when it might have missed an opportunity to learn, or when novel ideas or approaches were explored leading to changes to work processes or failed to do so. The intent of this section was to clarify what I intended to study and assess the mutual compatibility for the

research. I distributed the questionnaire electronically, with each participant receiving a personalized link to the questionnaire.

Group Interview

In order to understand the team's history, purpose, and functioning in greater detail, I conducted a group interview with the redesign team. This second data collection method allowed me to observe group dynamics prior to one-on-one interviews and helped me fine-tune my instruments and approach prior to the subsequent critical incident interviews.

Critical Incident Interview

The third and main method of data collection was an in-depth, critical incident interview. The Critical Incident Technique (CIT) consists of a flexible set of rules for collecting and analyzing data. Flanagan (1954) explained that "it should be thought of as a flexible set of principles which must be modified and adapted to meet the specific situation at hand" (p. 335). As Stano (1983) wrote, the main advantage of the CIT is the fact that a researcher's subjectivity—often an obstacle in any study—is neutralized. This is because the CIT collects data from the participants' perspective, and participants decide which incidents, situations, events, or activities are the most critical, memorable, or salient. The CIT generates data based on actual behavior and not on the view of the researcher who, no matter how detached, is likely to bring some preconceptions to the work at hand. The advantage of the CIT over some other methods is that the observer is expected to give concrete examples of behaviors. Therefore, assessment is based on an analysis of actual behavior rather than the interpretation by the observer (Gremler, 2004).

Five specific steps are followed in a critical incident technique: (a) determining the aim of the activity under study, (b) making plans and setting specifications, (c) collecting data, (d) analyzing data, and (e) interpreting the data and reporting results. The final three steps are linked to the method of data collection and are discussed here. Collecting data is

the third component of the CIT. This can be done in several ways, such as having expert observers watch people perform the task in question or by having individuals report from memory about extreme incidents that occurred in the past (Flanagan, 1954). During an interview, the researcher simply invites participants to tell a story about a critical event, experience, or incident; and asks them to explain why the specific story was significant or memorable (Vianden, 2012). For example, when utilizing the STAR interview response technique (Situation, Task, Action, Result), participants would be asked to describe (a) the context within which they performed a job or faced a challenge at work (situation), (b) their responsibility in that situation (task), (c) how they completed the task or endeavored to meet the challenge, and (d) the outcomes or results generated by the action taken (i.e., what was accomplished or learned). According to Voss (2009), the most effective time period for authentic recall of critical incidents should not extend more than four to six months from the incident. Finally, as Kain (2004) states, the most important conditions for the third component of the CIT are that (a) participants report actual incidents and behaviors, (b) the relationship of the reporter to the behavior is clear, (c) the incidents provided are sufficiently relevant to the general aim of the activity, (d) the participant clearly identifies what makes the incident critical, and (e) the reasons for this identification are clear to the researcher.

The fourth, and to many the most important, step involves analyzing the data. This can create a challenge stemming from the fact that there is no single "right way" for the researcher to describe the activity, experience, or construct. The purpose at this stage is to create a categorization scheme that summarizes and describes the data in a useful manner, while at the same time "sacrificing as little as possible of their comprehensiveness, specificity, and validity" (Flanagan, 1954, p. 344). According to Butterfield et al. (2005), data analysis necessitates navigating through three primary stages: (1) determining the frame of reference, which generally arises from the use that is to be made of the data and the conceptual framework; (2) formulating the categories; and (3) determining the level

of specificity or generality to be used in reporting the data. Practical considerations about the use of the research should drive the level of specificity or generality of the classification scheme. The headings should be logical and clear-cut, and Flanagan suggested that they should be easily discernible by the consumer of the research (Vianden, 2012). The Framework Method for the management and analysis of qualitative data provides clear steps to follow and produces highly structured outputs of summarized data. The Framework Method is most commonly used for the thematic analysis of semi-structured interview transcripts but can also be adapted for other types of textual data, including documents, such as meeting minutes or diaries, or field notes from observations (Gale et al., 2013). The Framework Method can be adapted for use with deductive, inductive, or combined types of qualitative analysis.

The final stage of the CIT involves decisions about interpretation and reporting. Flanagan (1954) suggested researchers start by examining the previous four steps to determine what biases have been introduced by the procedures used and what decisions have been made. Citing Woolsey (1986), Vianden (2012) asserts that "CIT reports should be 'vivid and evocative,' conveying an image of the critical incidents in each category. The purpose of the report drives the amount and type of information to be included" (p. 338). To determine these components, Flanagan (1954) encouraged researchers to explain what was most salient about the findings under the initial aim of the activity. He also advocated that, in order to strengthen credibility and trustworthiness, limitations be discussed, the nature of judgments be made explicit, and the value of the results be emphasized in the final report. There are several limitations to the CIT, including inconsistent use of the name and definition of the CIT (Kain, 2004), misinterpretation or misunderstanding of reported incidents by the researcher or subject (Gremler, 2004), and insufficiently rich detail, yielding a limited dataset (Vianden, 2012). However, for the selected study, CIT offers the best opportunity to collect data from the participants'

perspectives on which incidents, situations, events, or activities are the most critical, memorable, or salient.

Observations

The fourth method of data collection was the use of field observations. Although interviewing is often an efficient and valid way of understanding someone's perspective, Maxwell (2013) states that

> observation can enable you to draw inferences about this perspective that you couldn't obtain by relying exclusively on interview data. This is particularly important for getting at tacit understandings and "theory-in-use," as well as aspects of the participants' perspective that they are reluctant to directly state in interviews. (p. 96)

For this study, participant observation provided a direct opportunity to learn about their behavior and the context within which it occurs. I conducted several observations throughout the team's redesign process, including site visits, planning meetings, and professional learning communities. This included opportunities to observe how the redesign team engaged in learning and design activities both within and across the organizations participating in the UCRI initiative. As most of these observation opportunities occurred within the structure of the initiative and had been scheduled in advance, I was able to conduct them without additional burden on the participants. Finally, observation, in concert with interviews, provided the opportunity to better understand the phenomenon through triangulation. I also debriefed and explored my observations with the redesign team. This strategy reduced the risk that my conclusions would reflect only the biases of a specific method and allowed me to gain a more secure understanding of the issues I was investigating (Maxwell, 2013).

Review of Documents and Artifacts

The final method of data collection was the review of publicly available documents and redesign team artifacts, which served to describe the organization's history, mission,

vision, values, and course and program offerings. These documents included academic program descriptions, course materials, and other documents from before and after the program redesign. In addition to documents related to the redesign team's separate organizations, public documents from the initiative funder were reviewed. These included annual reports, implementation studies, and available research syntheses. Document review was used to provide an understanding of the contextual environments where the participants operated and insights into the organization's influence on team learning behaviors and innovative work behaviors. I reviewed these documents to gain a better sense of the context within which this work occurred as well as the artifacts produced throughout the redesign that demonstrate any explicit and implicit changes or learning that occurred.

Methods of Data Analysis and Synthesis

Any qualitative study requires decisions about how the analysis will be done, and these decisions should inform, and be informed by, the rest of the design (Maxwell, 2013). Yin (2002) defines analysis as "consist[ing] of examining, categorizing, tabulating, testing, or otherwise recombining both quantitative and qualitative evidence to address the initial propositions of a study" (p. 109). Stake (1995) defines analysis as "a matter of giving meaning to first impressions as well as to final compilations" (p. 71). In the author's view, "analysis essentially means taking our impressions, our observations apart" (p. 71). As a common trend in qualitative tradition, he suggests that researchers should conduct data collection and analysis processes simultaneously. Hence, there is no exact point in the research process to start analysis because there is no exact point to start data collection (Yazan, 2015). Coffey and Atkinson (1996) agree, stating, "We should never collect data without substantial analysis going on simultaneously" (p. 2). In line with this, I used my research questions and the related literature developed in Chapter II

to guide my data analysis. I utilized some of the analytic procedures outlined by Marshall and Rossman (2016), including (a) organizing the data, (b) generating case summaries and possible categories and themes, (c) coding the data, and (d) offering interpretations through analytic memos.

Recognizing the importance of well-organized data, I utilized an online transcription service (https://www.rev.com/) to transcribe my critical incident interviews immediately upon completion of the interview. In order to immerse myself as fully as is practical and confirm that the exact words of the participants were captured, I listened to the recordings while reviewing the transcriptions as well. When reviewing, I wrote notes that captured my own reflections and highlighted key concepts. Finally, I created participant summaries for each participant. This was done iteratively, both during and after data collection. In order to begin developing a manageable system of data classification, I began by "questioning the data, identifying and noting common patterns, creating codes that describe these patterns, and assigned coded pieces of information to the categories in my conceptual framework" (Bloomberg & Volpe, 2008, p. 97). In reviewing the transcripts, in alignment with Saldaña (2009), I began with an open coding system based on the actual language of the participants (and in the case of observations, their behaviors) and noted whether there is something in these data that might fit one of the descriptors of my conceptual framework while not attempting to "force" the data into predetermined categories. I developed data summary tables as I coded both to summarize the data and align the data to my preliminary research questions.

Issues of Trustworthiness

In their work, *Naturalistic Inquiry*, Lincoln and Guba (1985) addressed central questions that determine the trust we have in research designed to capture concerns with validity, reliability, objectivity, and generalizability, while broadening and deepening

them (Marshall & Rossman, 2016). Given ethical considerations and methodological differences, the traditional criteria pursued in research seeking to establish statistically significant causality or relationships do not apply. Rather, where the researcher is the instrument, "we distinguish the traits that make us personally 'credible' and ensure that our interpretations of the data are 'trustworthy'" (Marshall & Rossman, 2016, p. 323). Lincoln and Guba (1985) use the terms *credibility*, *dependability*, *confirmability*, and *transferability* and offer a set of procedures to help ensure that standards of trustworthiness.

Credibility

I employed a series of strategies to enhance the methodological validity of the study, including prolonged engagement, triangulation, and member checking. Prolonged engagement implies that the investigator performs the study for a period long enough to adequately represent the subject under investigation. Prolonged engagement in the field was achieved through conducting this study over several months, with many of the interviews and observations occurring within their own local contexts. In the case study method, Yin (2009) posits that triangulation aligns multiple perspectives and leads to a more comprehensive understanding of the phenomenon of interest. This study employed a variety of data collection methods for triangulation, including interviews, document review, and observations. In member checking, the participants are given the opportunity to assess the credibility of the author's account (Stake, 1995). I utilized member checking to assess the credibility of the findings from the participants' points of view by sharing my preliminary analysis, including themes with participants on an individual basis.

Dependability

According to Bitsch (2005), dependability refers to "the stability of findings over time" (p. 86). Dependability involves participants evaluating the findings and the interpretation and recommendations of the study to make sure that they are all supported

by the data received from the informants of the study (Cohen et al., 2011; Tobin & Begley, 2004). To ensure consistency and dependability with the data collected, I maintained an audit trail (Lincoln & Guba, 1985) through the ongoing use of a research journal with memos that documented changes in procedures and design. An audit trail allows external reviewers to understand and cross-check the inquiry process and show how the data were collected, recorded, and analyzed (Bowen, 2009; Li, 2004). Additionally, I established inter-rater reliability by eliciting the assistance of two cohort members to code interviews. I provided the cohort members with the coding scheme and several pages of three participant interviews and asked them to separately review and code the same transcript. This was to see the extent to which they coded similarly to me and to establish inter-rater reliability. After discussion around reconciling differences, we came to agreement on the coding for that interview.

Confirmability

Confirmability is "concerned with establishing that data and interpretations of the findings are not figments of the inquirer's imagination but are clearly derived from the data" (Tobin & Begley, 2004, p. 392). I established confirmability through the previously mentioned audit trail and through the use of a reflective journal. Specifically, I kept a reflexive journal, either handwritten or audio-recorded, to capture my own reflections on the events that happened in the field and how they related to the study.

Transferability

According to Bitsch (2005), the "researcher facilitates the transferability judgment by a potential user through 'thick description' and purposeful sampling" (p. 85). In order the strengthen the likelihood that the results of qualitative research can apply to other contexts with other respondents, this study provides a "thick description" of all research processes, from data collection to the production of the final report (Anney, 2014). Thick

description helps other researchers replicate the study with similar conditions in other settings.

Limitations of the Study

This study contains limiting conditions inherent to its design. In this study, I gave careful consideration to minimize the impact of these limitations. As the study's design and analysis ultimately rest in my own perspective and choices, subjectivity and researcher bias are a limitation. As already outlined in the section on researcher perspectives and assumptions of Chapter I, my perspective on the problem, the topic, my choice of research questions, and my theoretical construct are all a reflection of my worldview. As a philanthropic practitioner, I have developed my own perspective on what motivates organizations to change, as well as the type, scope, and sustainability of those changes. By way of researcher memos and notes, I documented explanations of any known biases and assumptions, and through conversations documented the explanations of those biases.

Another potential limitation is participant reactivity. Maxwell (1996) defines this as "the influence of the researcher on the setting or individuals studied" (p. 96). Because several of the participants know me, their responses might have been influenced or affected. Further, as a funder with inherent power imbalances discussed in Chapter I, participants may have been overly cooperative because of this familiarity. Or conversely, participants may have been more guarded and less candid in an attempt to hide anything they perceived as embarrassing. I believe that I cultivated a sufficiently safe environment enabling participants to freely share their experiences, thereby allowing me to collect the desired information for this study.

The use of convenience sampling to identify the study participants could also have affected information and credibility. Although there are nearly 700 university-based

principal preparation programs in the United States, the limited existing research on university-based principal preparation programs suggests that key features that make such programs successful are lacking and few have successfully implemented redesigns of the type being studied here. Further, those universities that have, are likely to have done so alone, without the input of their consumers (i.e., public school districts). As such, there may be concerns about the generalizability of the findings. However, I provided in-depth, rich descriptions of participant responses so external reviewers may determine whether and to what extent the study's findings may represent their own experiences.

A final potential limitation was the use of semi-structured interviews utilizing a Critical Incident Technique (Flanagan, 1954) and a relatively small sample as part of this qualitative study. The critical incidents described by the interviewees might not have encouraged the participants to reflect on their own learning or describe concrete innovative work behaviors. Previous studies on IWB and TLB in interdisciplinary work teams utilized surveys as the primary data collection method. A mixed-methods approach consisting of both surveys of several teams across multiple organizations and in-depth qualitative interviews of a subset might facilitate different avenues of exploration that enrich the evidence and enable questions to be answered more deeply.

Chapter IV

RESEARCH SAMPLE AND SETTINGS:

A CONTEXTUAL OVERVIEW OF THE PARTICIPANTS

Chapter Organization

The purpose of this case study on innovative work behavior (IWB) in higher education was to learn more about which team learning behaviors (TLBs) and team innovative work behaviors (TIWBs) are exhibited by cross-boundary knowledge-intensive public sector work teams in order to understand how these complex organizations can leverage learning toward practice improvement. In the context of this study, team learning behaviors are defined in alignment with Decuyper et. al.'s (2010) conceptualization of team learning as reflecting knowledge acquisition (sharing, storage, and retrieval), participation (boundary-crossing, team activity, and team reflexivity), and creation (co-construction and constructive conflict). Team innovative work behavior (TIWB) is defined as the sum of all physical and cognitive work activities teams carry out in their work context to attain the necessary requirements for the development of an innovation (Messmann & Mulder, 2012). Team innovative work behavior consists of four interrelated tasks that must be undertaken in the development of an innovation: (a) opportunity exploration, (b) idea generation, (c) idea promotion, and (d) idea realization (Messmann & Mulder, 2012).

This study sought to understand the team learning conditions and experiences of a university-based cross-boundary work team attempting an innovative redesign of a

principal preparation program. This chapter begins with a description of the design of the initiative that instigated the formation of the redesign team, the local context of the team and for the study, and an overview of the chronology of events. As the team is the unit of analysis for this study, the efforts of the organizational members of the redesign team are presented as a single case. To maintain participant anonymity, demographic information for the study's participants is presented in aggregate, and pseudonyms have been used to de-identify any uniquely identifiable information or characteristics. Chapter V includes the study's main findings, and representative data from the qualitative interviews are used to support the findings.

Initiative Context

University Curriculum Redesign Initiative (UCRI)

This section includes information about the mission and goals of the University Curriculum Redesign Initiative (UCRI), how Redwood State University's redesign team was selected to participate, and how the team was structured. As previously mentioned in Chapter I, given the demonstrated importance of effective school leadership, efforts are ongoing at many levels to develop and support effective principals. However, despite the growing recognition of the importance of the principal's role in school improvement, universities, by far the largest provider of principal training in the nation, have been criticized for not adequately preparing principal candidates for the challenges of today's schools. Criticisms of university-based principal preparation include a lack rigor and relevance (Darling-Hammond et al., 2007; Elmore, 2000; Levine, 2005) and other systemic flaws, such as how students are recruited and selected, the quality of curriculum and instructional methods, and the means used to assess graduates' learning and career advancement (Young, 2015). In response to these and other concerns about the current state of principal preparation, the Education Foundation (the Foundation) established the

University Curriculum Redesign Initiative (UCRI). The initiative, a multi-million dollar grant program, incentivized universities to redesign their principal preparation programs with the support of high-need districts that hire their graduates and in alignment with the features and context recommended in the growing evidence base on high-quality principal preparation. These and additional evidence-based features and contexts of effective university principal preparation programs are presented in brief in Table 4.

Table 4. *Evidence-Based Features and Contexts of Successful University Principal Preparation Programs*

Feature or Context	Description
Program features	
Coherent curriculum	The program's course of study is focused on instruction and school improvement, integrating theory and practice through active learning and input from faculty with experience in school administration.
Supervised clinical experiences	The program provides opportunities for participants to engage in leadership activities over a long period of time and obtain constructive feedback from effective principals.
Active recruiting	The program searches for high-quality candidates, screening applicants through meaningful assessments.
Cohort structure	The program is structured to provide mentorship and support for candidates.
Program context	
Effective program leadership	Program leaders are able to coordinate all stakeholders, obtain all necessary resources and put critical program features into effect.
University-district partnerships	The program works with partners in substantive and operative ways that contribute to program sustainability.
Financial support	Program participants are given the support they need to complete the program.
State context	The program's standards are aligned with state standards, such as those related to program accreditation and school leader certification.

Source: Evidence reviewed and compiled in Darling-Hammond et al. (2007); Wang et al., (2018).
Note: Darling-Hammond et al. (2007) identified a fifth program feature that is not part of the UCRI effort: continuous engagement with program participants, wherein the program offers induction coaching and support to graduates after they have been placed as principals.

These features include a comprehensive curriculum (a course of study, including content and organization of courses, that integrates theory and practice); well-supervised, extended internships with opportunities to experience the real work of principals; higher standards for recruitment and performance-based assessments to guide selection; and a cohort structure (Wang et al., 2018). These features and contexts also inform UCRI's three goals: (1) develop and implement high-quality courses of study and supportive organization conditions at universities where future principals receive their pre-service training; (2) foster strong collaborations between each university and its partner school districts; and (3) develop state policies about program accreditation and principal licensure to promote higher-quality training statewide.

Despite the fact that many principal preparation programs have been slow to adopt the evidence-based features of effective programs, and some studies suggest that a range of barriers hinder change (Mendels, 2016), UCRI sought to answer the question, "How can university principal preparation programs—working in partnership with high-need school districts, mentor preparation programs, and the state—improve their training so it reflects the evidence on how best to prepare effective principals?" To address this question, UCRI called for redesigning universities to attempt to more closely align with evidence-based program features, central to which is building strong university-district partnerships and exploring ways in which state policy could be leveraged to strengthen principal preparation. As part of the grant application, each redesigning university needed to meaningfully engage district partners. Since public school districts ultimately hire graduates of the university programs, districts provide a critical perspective on the context, needs, and challenges of real schools and the qualifications needed for successful school leaders. This perspective can, and should, also influence several aspects of the preparation program, including candidate recruitment and selection, relevant curriculum

and instruction, the provision of rich clinical experiences, as well as on-the-job support and mentoring, among others.

Finally, the universities and their partner districts both operate within a policy environment that is dominated by state-level policies that strongly influence many aspects of the "life cycle" of aspiring principals, including university program accreditation, principal licensure, leader standards, and evaluation criteria. State policymakers and other policy influencers also play a role in fostering an environment that supports school leaders and helps develop effective principals. Although the diversity of U.S. schools means that there is no single approach for developing and supporting effective principals that will work in all states, Manna (2015) argues that state leaders can leverage both "formal and informal" power to help schools develop effective principals. Therefore, state context may support or suppress redesign efforts. As such, UCRI required that each university also include a state partner to both inform, and be informed, about the redesign process taking place within their state. While the initiative had broad strategic objectives and milestones to be met within the redesign process, partnerships were given the flexibility to develop their own vision and approach for transformation that works for its unique context. The Education Foundation's intention was that the programs could both succeed in their own right and serve as models for other universities seeking to make similar changes. Through a competitive selection process, the Foundation selected Redwood State University as part of a cohort of principal preparation programs participating in UCRI. "These programs were selected in part because they had expressed interest and conducted some initial work toward redesign and were located in states that had or were exploring policies or practices favorable to improving principal training" (Wang et al., 2018, p. 8).

State and Local Context

Policy Context for University Preparation Program Redesign

As mentioned previously, state context may support or suppress redesign efforts. Therefore, UCRI's designers sought to invest in universities located within states with policy environments that were conducive, or at least not hostile, to preparation program improvement. The Education Foundation engaged two national organizations—a behavioral and social science research and evaluation organization and a membership organization representing a consortium of higher education institutions—to determine the favorability of the state policy environment by reviewing state policies and regulations and determining the extent to which they reflected research-based indicators of best practices in principal preparation. Among the "high-leverage" policy indicators that were identified by the higher education consortium, four reflected preparation program oversight and program attributes for consideration in state approval, and one reflected candidate licensure. The consortium's analysis found that almost half of the states (44%) had no high-leverage policies or only one, indicating "a lack of active state support for fostering high-quality principal preparation programs or improvement" (Mendels, 2016, p. 15). Based on a literature review and interviews with experts, the research and evaluation organization identified a set of 18 weighted indicators, most aligned with conditions to foster effective principal preparation. As shown in Table 5, there was general agreement and overlap between the approaches taken by the two groups. An analysis of their results showed that few states appeared to have in place state conditions and policies to support improvement in principal preparation. Among those that did, three states (Illinois, Kentucky, and Tennessee) had the most favorable policy conditions, while 10 others (California, Connecticut, Florida, Georgia, Iowa, Massachusetts, North Carolina, Pennsylvania, Rhode Island, and Virginia) had conditions considered conducive to improving principal preparation.

Table 5. *Assessing the Policy Environment of the States*

High-leverage policy indicators
An explicit selection process that includes targeted recruitment and performance-based assessments.
Clinically rich internship that, among other things, is tightly integrated with the curriculum, extends for 300 or more hours and provides mentor supervision.
University-district partnership that includes a commitment from the district to provide clinically-rich internship experience, collaboration on candidate selection, and alignment between district needs and program design.
Program oversight that requires state review at specified intervals, documentation, and/or site visits, an experienced oversight team, and a feedback mechanism to improve practice.
Licensure requirements including three or more years of teaching, a master's degree in educational leadership or related field, and completion of an approved preparation program.
Indicators of conditions to foster effective principal preparation
Increased program oversight, including collection and use of state data on matters including graduates' job placement, and review process for program improvement.
Targeted recruitment and improved candidate selection using performance-based assessments and consideration of evidence of candidate effectiveness as a teacher.
Cohort structures
Evaluations based on standards attainment rather than course completion.
Clinical internships that last at least 300 hours and expose candidates to multiple school sites and students with diverse learning needs.
A formal process for continuous program improvement based on graduate impact data.
Competency-based candidate licensure and licensure renewal based on evidence of the principal's effectiveness in areas including student learning improvement.

Source: Based on data from Education Foundation

Finally, at the time of UCRI's launch, two significant developments related to school leader preparation were occurring at the national level. The first was the development of a set of new National Professional Standards for Educational Leaders (PSEL), which provided a set of research-based core principles and values about what constitutes effective school leadership. They can be used to inform policy and practice

and to shape public understanding about what school leaders do (National Policy Board for Educational Administration, 2015). As part of UCRI, teams were explicitly asked to evaluate how well their state and program standards aligned with the PSEL. The second development was the passage of the Every Student Succeeds Act (ESSA, Pub. L. 114-95, 2015)—a reauthorization of the federal Elementary and Secondary Education Act (Pub. L. 89-10 165). ESSA allowed states to use federal funds on activities that would improve the quality and effectiveness of principals and other school leaders (Herman et al., 2017) and explicitly required states to consult with specific stakeholder groups on the development of the ESSA plan and other decisions (Council of Chief State School Officers, 2016). Those two aspects, funding for principal preparation and encouragement of stakeholder engagement (i.e., school districts), provided additional state context for UCRI.

California State Landscape

Redwood State University (RSU) and its public school district partners are located in the state of California. California's Commission on Teacher Credentialing (CTC) plays a role in both the approval and accreditation of principal preparation programs and the credentialing of the school administrators (principals and assistant principals) themselves. Preparation programs are reviewed and accredited every seven years and are assessed against CTC's Preliminary Administrative Services Credential Program Standards. Those standards are, in turn, aligned to the California Administrator Performance Expectations (CAPEs), which outline performance expectations for new administrators in the state. California has a two-tier credential structure in order to become an assistant principal or principal. The first is a pre-service Preliminary Administrative Services Credential, whereby candidates with at least five years of teaching experience complete an approved preparation program.

In addition to completed coursework and fieldwork, candidates are required to pass three cycles of the California Administrator Performance Assessments (Cal-APA) to be recommended for the Preliminary Administrative Services Credential (Tier I). Once hired into an administrative role in a school district, individuals have five years to earn their Professional Clear Credential (Tier II) by serving in a full-time administrative role for at least two years and completing an approved administrative services induction program. Redwood State University offers both credentials. The programs are offered off-campus at school district sites and are planned and delivered in partnership with those districts.

As UCRI got underway, California was in the process of reviewing, revising, and strengthening its preparation and certification system for school and district administrators. This work resulted in the updated program and professional standards, along with new content and performance expectations for candidates (Kearney et al., 2018). As part of this work, the CTC updated the mandatory Cal-APA. In addition to updated performance expectations for candidates, California also updated its administrator professional standards. These recently updated California Professional Standards for Education Leaders (CPSEL) identify what a school or district administrator must know and do in order to demonstrate effective leadership in the state (see Figure 4 below).

Figure 4. *California Credentialing Process*

SYSTEM QUALITIES				
MULTIPLE PATHWAYS	**ALIGNMENT**	**ACCOUNTABILITY**	**INDUCTION**	**COLLABORATION**
Preliminary · Traditional Program · Intern Program · Examination Pathway — **Clear** · Induction	· CAPE and CPSEL · Administrative Services Program Standards · Quality Professional Learning Standards	· CTC Accreditation System ○ Annual Data System ○ Program Review ○ Site Visit · Performance-based assessments	· Initial years of service · Coaching · Individualized program · Performance-based · Evidence-driven	· Program Sponsor and Candidate Employers · Preliminary and Clear Program Sponsors

Commission on Teacher Credentialing
Administrative Services Program Standards   10   *Handbook Revised July 2018*

Organizational Contexts

Redwood State University (RSU)

Redwood State University (RSU) is a public research university based in California that serves as the lead partner of the cross-boundary work team. There are 58 school districts in the region, the majority of which are mid-size urban systems, all of which educate low-income students. In collaboration with their district partners, the primary focus for Redwood State University's redesign process in year one was to (1) conduct a curricular audit using Quality Measures (King, 2018) to identify improvement opportunities by assessing the current curricular and clinical program against evidence of effective practice; (2) create a logic model for developing required courses that are sequentially organized; (3) leverage the knowledge gained from the development of the

California Administrator Performance Assessment to redesign curriculum and course content; and (4) develop and revise curriculum and courses to address the gaps identified.

Redwood State University's (RSU) principal preparation program had a long-standing, structurally defined relationship with Hill Valley Unified School District. While the other two districts had existing professional relationships with RSU, there was no formalized partnership to train aspiring leaders through a revised program until engagement with UCRI. As part of the grant application process, RSU selected Palomar High School District, Border Field Elementary School District, and Hill Valley Unified School District as their official partner districts and members of the redesign team (the team). While the partnership was underway, Carlsbad Unified School District joined later and served as a collaborative partner testing the redesigned curriculum and clinical experiences. Student demographic data from each of the partnering districts can be found in Table 6 below.

Table 6. *Partner District Student Demographic Data*

	District Name (pseudonym)			
	Palomar	**Hill Valley**	**Border Field**	**Carlsbad**
Demographic	**Number/Percent**	**Number/Percent**	**Number/Percent**	**Number/Percent**
Hispanic/Latino	31,404 (76.6%)	61,032 (46.5%)	20,594 (69.0%)	41,140 (57.3%)
Filipino	3,363 (8.2%)	10,762 (8.2%)	2,836 (9.5%)	2,010 (2.8%)
White	2,464 (6.0%)	30,713 (23.4%)	3,497 (11.7%)	8,903 (12.4%)
Black or African American	1,143 (2.8%)	13,388 (10.2%)	1,051 (3.5%)	8,688 (12.1%)
Asian	571 (1.4%)	10,763 (8.2%)	716 (2.4%)	4,954 (6.9%)
Native Hawaiian or Pacific Islander	99 (0.2%)	1,182 (0.9%)	199 (0.5%)	933 (1.3%)

Palomar School District

Palomar School District is a mid-sized urban district serving over 40,000 students in grades 7 through 12 and more than 22,000 adult learners. Approximately 25% of students are designated as English learners (almost 10,400 students). The district is organized across 32 school campuses, including two alternative schools and a continuation high school. The students live in communities that are themselves culturally, linguistically, and economically diverse. The district employs 26 principals, 55 vice principals, and 29 directors or Cabinet-level administrators.

Hill Valley Unified School District

Hill Valley Unified School District is a large urban district serving over 121,000 students in grades pre-K-12. Approximately 24% of students are designated as English learners (almost 32,000 students). The district is organized across 226 campuses, which include 117 traditional elementary schools, 9 K-8 schools, 24 traditional middle schools, 22 high schools, 49 charter schools, 13 alternative schools, and 5 additional program sites. The student population represents more than 15 ethnic groups and more than 60 languages and dialects. The district employs 168 principals, 97 vice-principals, and 9 principal supervisors.

Border Field Elementary School District

Border Field Elementary School District is a mid-size urban district serving 29,600 students primarily in grades pre-K-6. Approximately 35% of students are designated as English Language Learners (almost 10,360 students). The district is organized across 49 school campuses, which include 8 charter schools. The district employs 51 principals, 15 vice principals (associate principals), and 5 principal supervisors.

Carlsbad Unified School District

Carlsbad Unified School District is a large urban district serving 71,800 students in grades pre-K-12. Approximately 12.3% of students are designated as English Language

Learners (approximately 8,831 students). The district is organized across 85 school campuses. The free/reduced lunch rate for students is 65% (46,670).

American Goldfinch University (AGU)

American Goldfinch University is a public research university in Washington State that serves as the mentor program for the redesign team. AGU prepares educators for leadership roles in P–12 school systems using an innovative competency-based program. The program offers principal certification, program administrator certification, and a master's degree in education.

Figure 5. *Redesign Team Profile*
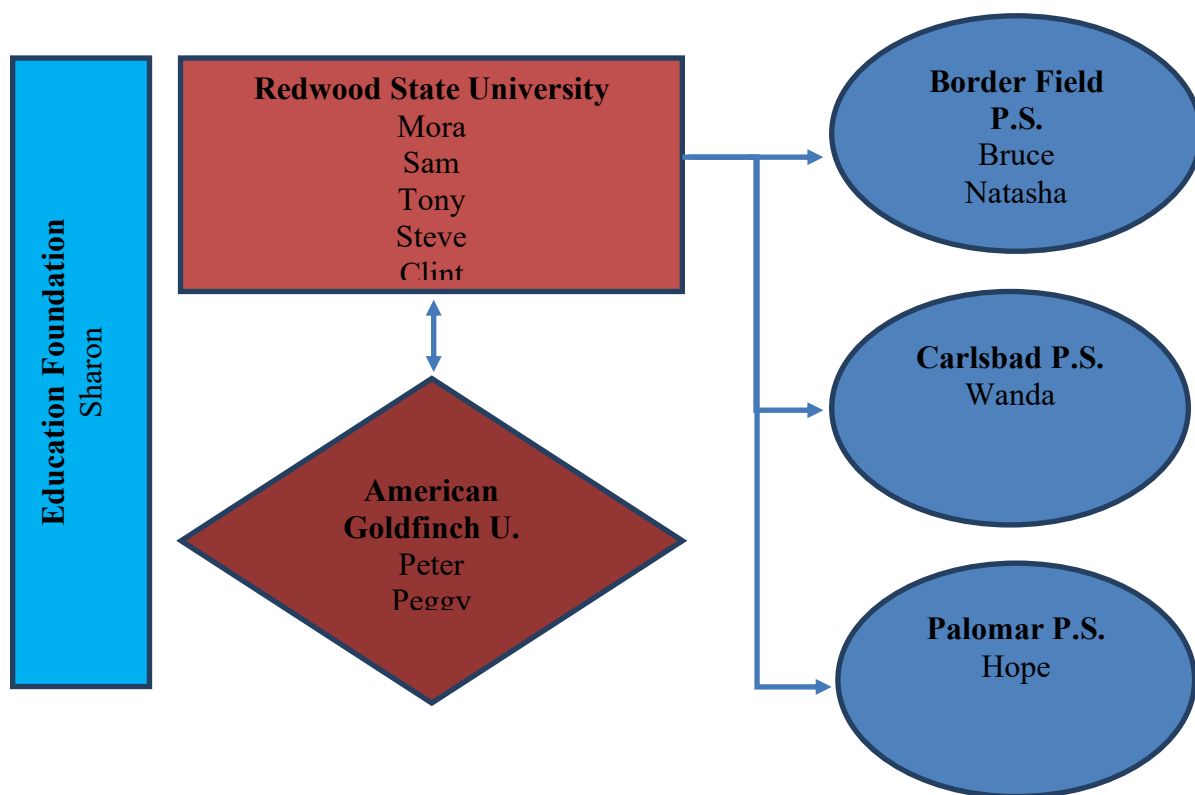
Redesign Team Profile

Within each of the partnering organizations, a senior leader was designated to manage the UCRI effort (see Figure 5). This was due, in part, to the initiative's design as well as the practicality of implementation. At Redwood State University (RSU), the department chair (Tony) served as Project Director, leading the team and serving as the primary liaison between the university and district partners as well as between the redesign team and the Education Foundation. In addition to the chair, four faculty members served on the team as well (Mora, Sam, Steve, and Clint). At each of the partnering school districts, the work was led by a senior administrator (usually the superintendent and/or cabinet-level official). The district representatives included Bruce and Natasha (Border Field County Public Schools), Wanda (Carlsbad County Public Schools), and Hope (Palomar Public Schools). American Goldfinch University, the mentor program, was also staffed by two faculty members of the university (a senior lecturer and dean emeritus). The mentor program representatives included Peter and Peggy. This group, accompanied by revolving membership from the partner organizations, formed the core team for the redesign effort. The redesign team of 11 consisted of 5 women and 6 men; nearly all (8 of 11) were White, with 3 participants self-identifying as Black, Hispanic/Latino, and Bi-Racial. Participant ages ranged from 40 to 65. All team members held doctorate degrees (Ed.D. or Ph.D.) and had an excess of 20 years of experience in education. Team demographics can be found in Table 7 (below) with corresponding pseudonyms for participant name and organization.

Table 7. *Redesign Team Participant Demographics*

Participant	Org. Name	Org. Type	Gender	Age	Ethnicity	Education	Title
Mora	Redwood State University	University	Female	56-60	White	Doctorate	Professor
Sam W.	Redwood State University	University	Male	51-55	White	Doctorate	Professor
Tony S.	Redwood State University	University	Male	51-55	White	Doctorate	Professor and Chair
Steve R.	Redwood State University	University	Male	60+	White	Doctorate	Professor
Clint B.	Redwood State University	University	Male	41-45	Black	Doctorate	Asst. Professor
Bruce B.	Border Field County Public Schools	District	Male	56-60	Hispanic/Latino	Doctorate	Superintendent
Natasha R.	Border Field County Public Schools	District	Female	46-50	White	Doctorate	Principal on special assignment
Wanda M.	Carlsbad County Public Schools	District	Female	51-55	White	Doctorate	Deputy Supt of Schools
Hope P.	Palomar Public Schools	District	Female	60+	Bi-Racial	Doctorate	Asst Supt of Leadership Dev (Retired)
Peter P.	American Goldfinch University	Mentor	Male	60+	White	Doctorate	Professor Emeritus & Dean Emeritus (Retired)
Peggy C.	American Goldfinch University	Mentor	Female	56-60	White	Doctorate	Senior Lecturer

Chronology of Events

The University Curriculum Redesign Initiative (UCRI) launched in the fall of 2016. After a competitive review process, the Education Foundation selected Redwood State University as one of seven university principal-preparation programs, with district and state partners, to participate in the initiative. Over the first two phases of implementation—mid-2016 through the end of 2018—there were several initiative design elements and mandated milestones that influenced the early phases of the team's development process:

- Conducting a curricular audit using Quality Measures (QM) to identify improvement opportunities by assessing the current curricular and clinical program against evidence of effective practice;

- Creating a logic model for developing required courses that are sequentially organized;

- Engaging a mentor program that would provide examples of effective and evidence-based program frameworks and curriculum;

- Collaborating with partner districts to redesign relevant course content, develop shared leader standards, utilize data to inform the identification and development of aspiring and established school leaders, and receive feedback on the job performance of its graduates;

- Leading the development of the California Administrator Performance Assessment; and

- Participating in several funder-sponsored professional learning communities (PLC) and network activities.

At the time of this study, RSU's redesign team was in the third phase of its redesign process, having successfully completed all required milestones of the first two

phases. Phase 1 included the development of the team's theory of action and logic model, a revised course of study, analyzed standards, and new syllabi for each course. In Phase 2, the team implemented the new courses and monitored the results, including a review of student perceptions, faculty perceptions, and changes in students' thinking (as evidenced in their work samples) and demonstrated mastery (as shown in their work samples). Finally, they used the results of the pilot administration of the Cal-APA to make additional changes to courses and clinical experiences. As they entered Phase 3, the team continued to focus on clinical experiences, specifically linking those experiences with the updated course of study and the results of the field test of the Cal-APA.

Chapter Summary

This chapter briefly described the demonstrated importance of effective school leadership and how concerns about the quality of their preparation led to the design and launch of the University Curriculum Redesign Initiative (UCRI). Next, it described the national and state-level policy context that influences university-based principal preparation and many aspects of the "life cycle" of aspiring principals, including university program accreditation, principal licensure, leader standards, and evaluation criteria. Finally, it described the member organizations within the redesign team, the team's objectives, how the team was structured, and demographic information for the study's participants. The following chapters will include the study's main findings and analysis. Representative data from the qualitative interviews will be used to support the findings.

Chapter V

FINDINGS

Chapter Organization

The purpose of this case study was to explore the experiences of a university-based cross-boundary team attempting an innovative redesign of a principal preparation program. The researcher believed that a better understanding of these experiences would help strengthen the collaborative relationships between universities and the districts they serve, leading to improvements in the quality of the preparation of the nation's school leaders. This chapter begins with a review of the research questions explored in the study and a brief overview of the main findings. Presented thematically, these findings will focus on a description of team activities and experiences that were directly observed or explicitly described by the redesign team. Despite their conceptual distinctions, the main concepts of team learning behavior (TLB), team learning conditions (TLC), and team innovative work behavior (TIWB) are interconnected, mutually dependent, and non-linear (Decuyper et al., 2010; Widmann et al., 2019; Widmann & Mulder, 2018). This "messiness" makes describing them as they appeared throughout the team's redesign process a more useful method of understanding its experience. Next, the key findings will be presented in greater detail, with additional quotes from participants to illustrate the sentiment shared by the larger group. Finally, brief analytic summaries of each finding will be presented.

Review of Research Questions and Main Findings

This chapter presents the key findings obtained from the group interview and 11 in-depth critical incident interviews with members of the redesign team, field observations, and document and artifact review. Three interviews were conducted face to face, and 9 were conducted via telephone. The interviews were structured around the following research questions:

1. What, if any, team innovative work behaviors (TIWBs) and team learning behaviors (TLB) were experienced by the cross-boundary work team?

2. To what extent, if any, did their work as a team result in perceived learning?

3. In what ways, if at all, has the cross-boundary work team's practice changed as a result of participating in the redesign process?

   - In what ways, if at all, has the individual team members' daily practice within their respective organizations changed as a result of participating in the redesign process?

4. How, and to what degree, have contextual factors enabled and/or impeded the learning and practice of cross-boundary work team members?

These questions focus on the behaviors exhibited and learning experienced by the team while implementing a redesign. Five major findings emerged from this study:

- Finding #1: Contextual pressures and opportunities served as both a catalyst for the initial partnership as well as continuous improvement.

- Finding #2: The team used the process of reimaging the new program as a way to develop a shared vision (or language), identify opportunities for improvement, and realign partnership activities and processes to implement the work.

- Finding #3: Partnerships evolved from "collaboration" to "interdependency" with success in this effort building confidence and credibility in future opportunities.

- Finding #4: Team leadership drove nearly all aspects of the process.

- Finding #5: Few participants reflected on their own learning; rather, they focused on changes in their practice and ways to improve the process.

The following is a discussion of those findings with additional details. In describing their experiences as part of the redesign team, the team members utilized descriptors that aligned to Decuyper et al.'s (2010) conceptualization of team learning as consisting of knowledge acquisition, participation, and creation. The first category, *basic behaviors*, describes what happens when teams learn and consists of knowledge sharing, co-construction, and constructive conflict. The basic team learning processes result in change but do not necessarily lead to improvement (Sessa & London, 2008; Van den Bossche et al.; 2006; Wilson et al., 2007). The second category, *facilitating behaviors*, influences both the efficiency and effectiveness of team learning and consists of team reflexivity and boundary spanning (Hirst & Mann, 2004). Finally, the third category of TLB, processes of *storage* and *retrieval*, is necessary for bridging the gap between past team learning and present or future team-work/team learning processes.

The team also utilized descriptors that aligned to several of the team learning conditions (TLCs) literature has indicated have the most influence on team learning (Decuyper et al., 2010); specifically, inputs at the level of the *system* (team leadership, interdependence, team structure), the *subsystems* (team member systems thinking) or the *supra-system* (organizational strategy), *catalyst emergent states* (shared mental models, team psychological safety, group potency or team efficacy, cohesion), and *time-related* variables (group development and team learning dynamics). Finally, the team described their experience in terms that align to the four interrelated tasks that must be undertaken in the development of an innovation: (a) opportunity exploration, (b) idea generation,

(c) idea promotion, and (d) idea realization (De Jong & Den Hartog, 2010; Messmann & Mulder, 2012). Despite the conceptual distinctions, TLBs, TLCs, and TIWBs occur in varying combinations, are interconnected throughout the categories, and do not follow a linear order. Rather, they are interconnected, mutually dependent, dynamic, and context-bound. The definitions and indicators used to code for these concepts are found in Appendix H.

While the findings will not be presented solely as a series of "counts" (e.g., x/19) to indicate the frequency with which a particular TLB, TLC, or IWB was mentioned or experienced by participants, the full frequency table can be found below (see Table 8). The frequency table indicates that team members most often described their activities and processes in terms of the TLBs of constructive conflict (basic behavior), team reflexivity, boundary spanning, and team activity (facilitating behaviors); the TLCs of organizational strategy, team leadership, psychological safety, and shared mental models; and the TIWB of idea realization. The frequency of relevant TLB, TLC, or TIWB will be presented with each finding.

Table 8. *Frequency Table of TLB, TLC, and IWB*

Dimension of TLB	Frequency of comment	Number of commenters
Team reflexivity (TR) - Facilitating	13	9/11
Boundary spanning (BS) - Facilitating	16	8/11
Constructive conflict (CoCon) - Basic	19	8/11
Team activity (TA) - Facilitating	8	6/11
Storage and retrieval (S/R) - Facilitating	6	5/11
Knowledge sharing (KS) - Basic	2	2/11
Co-construction (CoCo) - Basic	1	1/11

Table 8 (continued)

Dimension of TLC	Frequency of comment	Number of commenters
Team leadership (TL)	15	7/11
Organizational strategy (OS)	20	7/11
Psychological safety (PS)	6	5/11
Shared mental models (SM)	5	4/11
Team structure (TS)	5	3/11
Team efficacy (TE)	4	3/11
Cohesion (C)	5	3/11
Systems thinking (ST)	7	3/11
Interdependence (TI)	6	2/11
Group potency (GP)	5	2/11
Team development and team dynamics (TD)	1	1/11
Dimension of IWB	**Frequency of comment**	**Number of commenters**
Idea realization (IR)	12	7/11
Opportunity exploration (OE)	2	2/11
Idea generation (IG)	1	1/11
Idea promotion (IP)	0	0/11

The findings presented respond to the research questions of this study, with each aligned to one or more of the questions under study (see Table 9). In this chapter, I will describe what occurred when the team came together to work through the redesign. In the next chapter, I will display and analyze data through analytic categories aligned to this frequency table for all relevant TLB, TLC, and TIWB. Taken together they will help to answer my research questions with the nuance of the team's experiences.

As mentioned previously, the five major findings will be presented thematically with respect to the team learning behaviors (TLBs), team learning conditions (TLCs), and team innovative work behaviors (TIWBs). Findings will be presented thematically for two reasons; first, the concepts of innovative work behavior (Widmann et al., 2019; Widmann & Mulder, 2018) and team learning (Decuyper et al., 2010) are both dynamic

Table 9. *Alignment of Thematic Findings to Research Questions*

Finding	Research Question(s)
Finding #1: Contextual pressures and opportunities served as both a catalyst for the initial partnership as well as continuous improvement.	How, and to what degree, have contextual factors enabled and/or impeded the learning and practice of cross-boundary work team members?
Finding #2: The team used the process of reimaging the new program as a way to develop a shared vision (or language), identify opportunities for improvement, and realign partnership activities and processes to implement the work.	What, if any, team innovative work behaviors (TIWBs) and team learning behaviors (TLB) were experienced by the cross-boundary work team?
Finding #3: Partnerships evolved from "collaboration" to "interdependency" with success in this effort building confidence and credibility in future opportunities.	What, if any, team innovative work behaviors (TIWBs) and team learning behaviors (TLB) were experienced by the cross-boundary work team? How, and to what degree, have contextual factors enabled and/or impeded the learning and practice of cross-boundary work team members?
Finding #4: Team leadership drove nearly all aspects of the process	How, and to what degree, have contextual factors enabled and/or impeded the learning and practice of cross-boundary work team members?
Finding #5: Few participants reflected on their own learning, rather, they focused on changes in their practice and ways to improve the process.	To what extent, if any, did their work as a team result in perceived learning? In what ways, if at all, has the cross-boundary work team's practice changed as a result of participating in the redesign process? In what ways, if at all, has the individual team members' daily practice within their respective organizations changed as a result of participating in the redesign process?

and integrative processes that should not be treated as a series of discrete and separate

parts. The IWB tasks of opportunity exploration, idea generation, idea promotion, and

idea realization are not linear, discrete, or independent. Rather, they are interconnected,

mutually dependent, and connected through feedback loops. Individuals may be involved

in the accomplishment of one or more of these tasks simultaneously and repeatedly

(Dorenbosch et al., 2005; King, 1992; Scott & Bruce, 1994). Similarly, despite these

conceptual distinctions, team learning behaviors are interconnected throughout the categories and do not follow a linear order. Rather, different types of TLBs occur in varying combinations, either simultaneously or sequentially (Decuyper et al., 2010). The second reason to present the findings thematically comes as a result of conducting the semi-structured interviews utilizing a Critical Incident Technique (Flanagan, 1954). As a result, participants tended to reflect on their learning and describe their activities in relation to those incidents—or other programmatic goals and milestones—rather than as a distinct activity. In short, they learned and developed as a team while attempting to execute a series of tasks. Following each of the main findings, I will present brief analytic summaries pointing to the relevant TLB, TLC, and TIWB that were observed.

Finding #1

Contextual pressures and opportunities served as both a catalyst for the initial partnership as well as continuous improvement.

Table 10. *TLCs Aligned to Finding #1*

Dimension of TLC	Frequency of comment	Number of commenters
Organizational strategy (OS)	20	7/11

UCRI launched with the goal of improving the state of principal preparation based on the work and learnings of the Education Foundation. While the funding served as an incentive for participation, contextual pressures and opportunities also spurred the team's member organizations' desire to engage in this work. **Most team members (7/11) mentioned how participation on the team was a method of addressing an existing challenge or would align with the desired change (Organizational strategy).** An early UCRI requirement was to identify or develop program-level leader standards that would help guide the redesign work. Such standards were meant to identify what a principal

who graduates from the university program should know and be able to do. As mentioned previously, California recently updated program and professional standards, along with new content and performance expectations for candidates. Tony was selected by the state to participate on its Cal-APA Design Team, helping the California Commission on Teacher Credentialing (CTC) to design the tasks, rubrics, field tests, and other aspects of the newly designed assessment. This provided RSU with the unique opportunity to influence the state's development of the Cal-APA while aligning those efforts with the organizational goals of UCRI.

Tony, Steve, and Sam all saw revising the assessment (also referred to as the "exit exam") as an opportunity to be responsive to impending state changes while going beyond simply what was required for state compliance, but to continuously improve as well. As Peggy stated:

> I think it really helped that the Cal-APA was being generated right at the same time .... So Cal-APA is about to launch, [RSU] had been part of the process to develop that, so they knew they had to make some changes anyway to work with the new Cal-APA. So, it was actually the perfect storm for them. I mean, a perfect storm in a good way. (Peggy)

Sam and Tony echoed the point:

> It has been a very difficult and ongoing process to say, "How do we determine mastery of the standards that we all agreed to?" ... I think a lot of teams would've said, "Here's our exit exam. It measures the standards. We're finished. Next task." I think another group of people would say, "This is good enough. We're not sure it's actually possible to measure equity-driven leadership. If we get [the candidates] to the standards, it's good enough." And so, it's this ongoing conundrum, this challenge that we have on the team that I think is appropriate and useful. (Tony)

> The one nut we continue to try and crack is the assessment piece. [We] piloted a couple of different approaches. All of them work, but we don't like any of them. That nut exists within the larger nut, which is the Cal-APA, the statewide tests. That really threw into disarray everything we had traditionally assessed in our program because it shouldn't be duplicative given only so much time for assessment. So, I would say the team as a whole still continues to consult around that piece. And I think that's our biggest challenge because we just haven't got it right yet. (Sam)

It remains an ongoing quest for us that it's something we come back around to. It's something that generates still a lot of conversations kind of out of the blue, a team member will say, "I was thinking about the exit exam. Have you thought about this?" And we haven't solved it yet. We haven't given up and every year we have to give an exit exam and it gets better every year, but it's the source of open conversation on the team, this quest to know, how someone is ready? (Tony)

While revisions to the exit exam provided an opportunity for timely continuous improvement, some aspects of the redesign process were not as well received. As a required milestone of UCRI, the team was asked to develop or adapt program-level (university) standards and align them to district-level leader standards. The Foundation's rationale in requiring this was the belief that by co-developing a set of shared standards, the partners would agree on the necessary skills and competencies that an effective principal should have. Initially, this created some frustration for the team as they faced two seemingly contradictory tasks. The initiative asked them to develop new, *shared* standards with their district partners. However, in California, unlike some other states within the initiative, leader standards for preparation programs are driven by the California Administrator Performance Expectations (CAPEs) and for school districts by the California Professional Standards for Educational Leaders (CPSEL). The development of new, shared standards seemed a potential waste of effort. Steve voiced the team's frustration with the misalignment between the grant's expectations and the team's local context:

Most of the other [UCRI] programs were very responsive to the national standards. But California wrote similar but different state standards and our commission on teacher credentialing reviews that program against those [California] standards and accredits us based on those standards. The fact that we had to continue to make alignments between national and state and continue to point out how we're different or whatever, just made us look like we're acting elite when we're just trying to be realistic. (Steve)

The one thing that made us look a little more pompous ... or more aloof ... or more just engaged nationally than we wanted to be was the fact that ... California is different. It is ... but everything is different. The fact that our State standards had to drive our program. We got so wrapped up for so long, especially that first year or two, trying to compare the national [PSEL]

standards with the State standards. With the standards for preparing versus practicing administrators and all these side by side comparisons. I thought it kept us from doing the work we knew we needed to do. Pointing that out, made us look less cooperative than we wanted to be. (Tony)

While a frustrating exercise, the process of developing program-level standards also represented an opportunity for district partners to provide input to the university about the type and characteristics of school leaders they needed. This directly responded to some long-standing challenges identified by the districts, including desired improvements in hiring, professional development, and evaluation—all of which are influenced by the standards:

> We had a significant number of our principals retiring [and] also at the onset of hiring we had a couple of new principals that left abruptly. It made me think, we need to do something different because we can't afford to hire and then [replace] someone every year or two. There was definitely a need to make sure that our new principals were well prepared. (Bruce)

> We knew that we were going to have retirements, that we were going to have new positions to hire. So, part of my work was working with the HR assistant too and re-crafting how we actually did preliminaries and get people to interview. [Asking] "What does that process look like?" "How do we actually conduct an interview to get to the best candidates?" and "What information do we need and what was missing?" (Hope)

> We've also recognized, and this isn't new, that we had to turn our attention recently to addressing the need to support our current leaders as well. That is not just something that I'm concerned about at the RSU redesign level. But also, in my work with coaching and mentoring principals within Border Field. As well as others around the county, and statewide and nationally. (Natasha)

Bruce went on to remark how the process had also influenced the district's evaluation process:

> We completely reviewed and updated our principal evaluation system and we had principals, cabinet, and myself involved in that endeavor. We completely constructed the assistant principal evaluation as well in line with the efforts that we underwent in looking at capsules and making sure the leadership standards .... We unpacked the leadership standards and we just made sure that they were connected to our eval system. Both principal and AP. (Bruce)

Finding #1 Brief Analytic Summary

Several elements of UCRI presented opportunities for the university and district to respond to environmental challenges and organizational opportunities. This rationale for participation seemed to be both the result of environmental pressures and alignment with each organization's strategy to solve persistent, "real world" problems. As mentioned in Chapter IV, there were several contextual factors that contributed to the environmental and organizational influences experienced by the team. Those environmental influences were present at the national, state, and local levels and included several changes California undertook to strengthen its preparation and certification system for school and district administrators. The team's leader (Tony) and district representatives were able to align the UCRI redesign efforts to their own organizational goals and ensure compliance with impending state mandates.

<div align="center">

Finding #2

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The team used the process of reimaging the new program as a way to develop a shared vision (or language), identify opportunities for improvement, and realign partnership activities and processes to implement the work.

Table 11. *TLBs Aligned to Finding #2*

Dimension of TLB	Frequency of comment	Number of commenters
Boundary spanning (BS) - Facilitating	16	8/11
Constructive conflict (CoCon) - Basic	19	8/11

At the onset of the redesign process, it was necessary for the team to come to an agreement around both the explicit expectations of the grant requirements (or milestones), as well as a shared agreement about the practical implications of those requirements and how best to implement them in their context. **Most of the team**

members (8/11) described the process of coming to a shared understanding and developing a common language as a significant part of the team's early efforts.

> I think having a quest, a goal, is always important for a team. If we don't have a purpose to come together with something bigger, then it turns into just dissemination of information and that can happen on email. (Natasha)

> We developed some common nomenclature, common language, some expectations that the language that we would be using in a pre-service program, the candidates will hear their school leaders using. (Steve)

> Having critical conversations [and] mutually beginning to understand where each person is coming from and the type of barriers that they have to face really makes a difference. (Bruce)

Several team members (both district and university) recognized the benefits of having different, non-traditional voices around the table and engaging them deeply:

> We started to understand how much more powerful we could be if [we had] more of a perspective of what the districts' programs were doing. Rather than the district just being involved in what we were doing. (Steve)

> I see [the university] as partners, going through processes together, and sharing materials, ways of thinking in a new way. And that's both pushing our thinking and also in some cases confirming. (Wanda)

But they also realized that that type of engagement was a relatively rare occurrence:

> [In my last position] having seen some of the lack of engagement or the disengagement with some of the district people and a lack of care or concern with regards to practitioners, I think is a general theme, [but here] building relationships with the district folks as well as state folks there was a sense of mutual respect. (Clint)

> ... it was a critical moment [for the team] because it was actually seeing how a university could conceive of a curriculum that would reinforce the dispositions of equity leadership [in our district]. (Wanda)

> You show your interest with where you spend your time [and] what you spend your time doing. The resources that came from [the Foundation], while it certainly could have been accomplished without them, I'm not saying that they were absolute. But they increased the opportunity to say, "let's make this a priority, let's put some time aside and let's really open our programmatic books and take each other seriously." So, days together rather than an hour together, it makes a huge difference. (Steve)

However, while most agreed that the team was becoming more efficient in executing their shared tasks, not all voices felt heard equally and acknowledged that strong differences of opinion persisted. While these tensions never became lasting impediments to the work, they did remain an element of the group's experience:

> My work is to specifically challenge the status quo. When that's not being challenged or critiqued, I think that's a challenge for someone who is critiquing it, such as myself who is pushing back on it. It could potentially cause some friction. (Clint)

> I think definitely the change of ethnicity [within the team] definitely changed how people interacted. It wasn't until there were more people added to the [university team] that it became less "this is our program." (Hope)

> The racial and other hierarchy dynamics are extant. I have to work to get [some people] to stop talking so much, and [consider], "what other perspectives do we have?" (Peggy)

> I don't know that we were ready for the harder conversations, [but] the work can go much deeper if you just keep coming back and giving people time to develop the trust needed to push on each other's thinking. (Clint)

Finding #2 Brief Analytic Summary

Several TLBs were demonstrated by the team as it went about the work of creating a shared vision and building the type of effective partnership that would be required to implement the redesign. These TLBs included taking the initiative to cross the borders of the team (boundary spanning) and the process of negotiation and dialogue that uncovered diversity in identity, opinion, etc. within the team (constructive conflict). Boundary spanning and constructive conflict occurred throughout the redesign process. Ultimately, it seems that the team was able to leverage this toward team performance by ensuring disparate voices were heard and valued.

Finding #3

Partnerships evolved from "collaboration" to "interdependency," with success in this effort building confidence and credibility in future opportunities.

Table 12. *TLBs Aligned to Finding #3*

Dimension of TLB	Frequency of comment	Number of commenters
Boundary spanning (BS) - Facilitating	16	8/11
Constructive conflict (CoCon) - Basic	19	8/11
Team activity (TA) - Facilitating	8	6/11

As mentioned previously, the university and partner districts that composed the team had existing relationships of varying degrees of duration and depth. While describing these existing relationships as "transactional" may be too simplistic, the relationships were, at least, somewhat siloed, with the university and district seeing their responsibilities as complementary but distinct. **However, the majority of the team identified the activities related to gaining insight and feedback from partners— boundary spanning (8/11) and "learning by doing"—team activity (6/11) in order to meet milestones as key for moving the work forward.** Specifically, three critical incidents were identified more often than any others: (1) the completion of the Quality Measures audit to assess the strength and gaps of the existing program; (2) the development of a logic model to guide the program's redesign; and (3) the development of shared leader standards (referred to as the "Five Types of Leadership Thinking"). It is worth noting that each of these incidents was related to programmatic milestones required by the initiative.

Nearly half (4/11) of the team members remarked on the Quality Measures (QM) process as helping to strengthen team-building efforts. As part of their early implementation activities, the team was tasked with conducting a curricular audit using

the Quality Measures (QM) to identify improvement opportunities by assessing the current curricular and clinical program against evidence of effective practice. Developed by the Education Development Center (King, 2018), the QM helps principal preparation program leaders and others to assess the quality of principal training. The QM is based on Darling-Hammond et al.'s (2007) research on exemplary principal preparation practices, and the QM's rubric indicators and criteria describe effective practice and call for users to provide evidence of their program's effectiveness along five domains (recruitment and selection of candidates, curriculum, instructional methods, clinical practice, and assessment of outcomes for graduates). A significant aspect of this facilitated process is the gathering of evidence to support preliminary ratings for each domain and convening as a full team (university and districts) to review the evidence and agree upon ratings (Wang et al., 2018).

As an example of boundary spanning across the team's different organizational member types, all partners participated in the QM process, including the districts providing feedback on their perceptions of the program and where they thought there was room to improve. Coming to an agreement on ratings was an iterative process and exposed some differences of opinion. These differences pushed the team to try and square the various perspectives of those university-based members responsible for designing the program with those of the district-based members.

> My responsibility was to provide an honest rating of the program and feedback to [RSU] about the program and candidates for the purpose of improving the program and skill set of graduates. Upon completion of the task, the results were all skewed to the 'Exceeds/Meet' end of the scale while the [Palomar] results were the only ones identified at the opposite end. The [RSU] lead became quite defensive at this time and attempted to push us to change our responses .... This action led me to wonder how I would be able to be a team member who proposed differing views or beliefs throughout the [redesign]. I wondered if my voice would be considered and how I would need to respond to the work honestly without upsetting the other team members. (Hope)

The gathering of evidence, rather than the solicitation of opinions alone, encouraged the team to come to a shared understanding of the program's strengths and opportunities for improvement. These data-informed conversations helped facilitate team activity and boundary spanning as the team sought to surface underlying opportunities for program improvement. As Hope stated:

> [QM] provided opportunities [to look at] similarities and differences, but then allowed us to agree that we think these are the areas that we need to work on. As we were teamed together working on the QM [ratings], we would ask, "So what examples do we have?" Getting people to come together and work together, that team component [made the process] feel like my input was going to be valued as well as their input valued.

Peter, one of the team members from the mentor program, remarked on how significant it was for the university to undergo the type of authentic reflection and explicit provision of evidence that the QM process elicited:

> [There was] that kind of a contextual commitment of the entire team to put everything on the table. I wasn't there for the first QM review, but this one was the second one and, at that point, they of course had already done significant amounts of work in redesign. Even though they had invested a lot in the redesign, they recognized there were other significant changes they needed to pursue. The first thing that stands out for me is the flexibility of the team to say, "Well, this isn't good enough yet. We need to continue to tweak it and revise it." [They] were so conscientious about really using this as an opportunity to put everything on the table. (Peter)

The team's QM results were kept confidential and not shared with the Foundation. The funder promised redesigning universities' confidentiality with regard to the QM process in hopes that it would encourage all partners to be more candid in their self-reported ratings. Subsequently, the team used the results to assess and inform the revision of RSU's clinical practices. Later in the redesign process, RSU revisited their QM experience and the boundary spanning and team activities that informed their initial and final ratings. Believing that this experience would be beneficial to other universities hoping to strengthen their programs through greater district engagement, RSU began outreach to other universities and districts as potential partners. This type of outcome was

in line with the Education Foundation's intent (i.e., spreading lessons beyond a single site). As Sharon reflected,
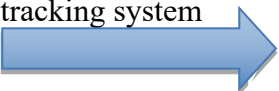
> Some of the groups began to refer to themselves not as partnerships or teams, but as interdependencies, which is exactly what we were trying to promote. That represents not only the depth of the learning, but also the depth of the implementation and ultimately the sustainability. Because if you've got teams and they've all bought in, you have a better quality product because it's going to meet the needs of the districts as well as the university, as well as the state. (Sharon)

Nearly half of the team (4/11) identified the development of the Logic Model as significant. In the first year of UCRI, The Education Foundation asked the team to develop a program-specific logic model to guide the redesign process by establishing a clear vision of the future and demonstrating how the redesign features they planned would lead to the graduates they envision. The belief from the Foundation was that it would drive the programs toward more meaningful change through deepened partnerships. While the Foundation required the development of a logic model, it did not dictate the form the model should take. Initially, this "flexibility" caused confusion and frustration on the part of some team members. As Bruce stated, "At first it was nebulous. It was, 'Okay, what exactly do we have to do?' It was not as clear in the onset." Sam echoed the point:

> There certainly were times that I will say where the [Foundation's] goal posts were not exactly solid in my mind. But a good team can deal with ambiguity because we find comfort in our shared concern around something and then we problem solve. OK, well, so if we're not going to get clarity, if no templates are going to be provided or guidance is going to be given and we're just told to do what works for us .... [If] that's what it is, then I think in some ways the team becomes frustrated at times and then becomes more resolute or at least ours did in terms of what we produce. (Sam)

There was debate among and between the Foundation and the participating teams on the purpose and structure of a logic model and whether it should be a *theory of change* or *theory of action* instead. Logic models took on many different forms but generally had four features, as illustrated in Table 13.

Table 13. *Common Features of a UCRI Redesign Logic Model*

RESOURCES Organizations and materials	ACTIVITIES Key redesign tasks and strategies	OUTPUTS The redesigned program	OUTCOMES Intended impact
• UCRI project team • Partner organizations • Other state and national groups • Nonprofit organizations • Technical assistance providers • Leader standards	• Design curriculum and instruction • Develop clinical experiences • Establish more rigorous recruitment and selection processes • Coordinate activities around the leader tracking system	• UCRI program materials • Effective staff • Aligned curriculum • A leader tracking system	Some participants emphasized the development of transformational leaders or aimed for a model principal preparation program; others provided outcomes relevant to each partner (e.g., improved credentialing program or hiring practices)

Source. Based on data from Education Foundation.

While there was agreement that the logic model would help guide the change process, there was less clarity about the exact structure and components of the model, as well as how and to what degree it should reflect the perspectives and contribution of the stakeholders. This confusion led to the development of an early version of the product that did not initially align with the expectations of the Foundation. However, a process that began as a source of frustration also served as a turning point for the team as they utilized its development as an opportunity to create a foundational document that would serve their long-term strategic needs, not just the requirements of the grant.

> [The Foundation asked for] a theory of change or theory of action or whatever. We did one and not the other and then we were confronted with this dilemma that we hadn't done what we were expected to do. I work with a bunch of high performers who are super pleasing people and don't like to get things wrong. And so, when I came back from the meeting [and said], "We don't have this done yet. We're not there yet. This is what I learned at this meeting ...." It was a really interesting process to watch and how the

team came together. We were faced with a task, a new task that we'd thought we'd be unsuccessful on. We kind of felt that our support system misled us and it'd be easy to assign blame [but] they didn't. (Tony)

I think clarity happened when we got together as working teams and then RSU invited Carlsbad [County Public Schools] to talk about their journey and that really helped us create more understanding of what was to be expected. (Bruce)

That was when we started working on, "Well, what is this program going to be?" This idea of equity-driven engagement and inspirational learners came out of that meeting, and that would be at the center of the theory of action and then the logic model that was developed. So, that's what began the work. But it meant that the program had to shift and change pretty dramatically to make that happen. (Peggy)

The process of developing the logic model supported team-building throughout the redesign process.

I gave them that choice. I said to them, "We must do this [logic model]. That's a non-negotiable. [But] we can do it as a compliance task or we can do them as a driver. Both options are okay with me." Their response was, "Let's look at what it needs to be, but let's make it useful for us. Let's not go through some task that's not going to mean anything to us." That's what I really appreciated about it. It could have very easily been something that sits on somebody's computer for the rest of your life and that we never refer back to and it does nothing for us…. (Tony)

This was still relatively early in the project. We had a number of think tank meetings in partnership with the districts [and] began moving as a group from theory to practice to actually realize some of these ideals that we've been talking about. (Mora)

There was no preconceived outcome and there was no ... what's the word for it? When you come up with an idea and then you want to protect it? There was none of that either. It was just everybody was very open and, in this process, we critiqued, and it was the good of the whole, I think. We came to a consensus. (Sam)

Despite a challenging start to the process, ultimately, the logic model became an anchor document, often referred to and utilized as a starting point for future refinement. The team starts each meeting with the logic model slide and highlights the part of the logic model that the group is working on. This has allowed various and an evolving cast of team members to understand the impact their work will have on the entire system that

is being developed. After completing the final logic model, located in Appendix I, it has remained relatively unchanged. As Tony reflected,

> I think it set out our vision of the what and the how. It's less about the why, but that set out our vision of the what and the how. So, think of what we're going to accomplish and just how we're going to do it. I mean, we really haven't even revised it. It's still the thing we talked about. Where we are and we circle a box in the logic model and say, "This is what we're working on today. We had this many years ago. This is today's work." (Tony)

Nearly half of the team (4/11) stated that developing the Five Types of Leadership Thinking moved the team's work forward by serving as an organizing principle for the team's distinct yet interconnected activities. Central to the team's ultimate goal was revising the course content and field-based learning and professional expectations to reflect RSU's primary focus: developing equity-driven leaders with the knowledge, experiences, and dispositions and behaviors proven essential to effective school leadership for the state's most challenging schools. The desire to develop equity-driven leaders served as an organizing principle that helped to more clearly align many of the team's activities into a coherent whole. An area central to this goal was the identification of the behavioral traits and dispositions they would assess in their candidates. Over the course of several months, the team identified the five major dispositions as (1) *Systems Thinking*, (2) *Data & Design Thinking*, (3) *Climate & Culture Thinking*, (4) *Learnership Thinking*, and (5) *Operational Thinking*. The development of these dispositions was guided by the facilitation of the mentor program, as described below, and proved a method for constructive conflict, team reflexivity, and ultimately team building.

The development of the Five Types of Leadership Thinking was heavily influenced by the facilitation of the mentor program, and the accompanying team structures, to move the work forward. Early in the development process of the Five Types of Leadership Thinking, the representatives from American Goldfinch

University—the mentor program—guided the team through a structured process of small and large group teaming activities in order to gain insight from all partners, delegate development of different aspects of task, and consult on the results. The team was assigned pre-work to be completed prior to all in-person meetings to ensure time could be used as productively as possible. As Natasha noted, "There wasn't a lot of spinning on stuff that didn't need to be discussed at that time. It was really the meat and potatoes of what needed to be decided, and what needed to be considered." This was done both for efficiency's sake but also as a means of ensuring sufficient input from all organizational partners. These efforts supported boundary spanning and team activity (learning by doing) by efficiently gaining input of all team member types (i.e., university and district) and beginning to surface interdependencies while continuing to move the project forward.

> I started talking about "what are all the types of things we wish that administrators had experienced with background competencies that are necessary to be truly a high functioning, successful administrator?" We broke up into smaller groups. So, it was an RSU person, a person from one of the school districts, so we each had our own teams, and from that, we started putting them into thematic units. Like, "Oh look, there's their theme. There's that theme." Then we did the wordsmithing of what could we get these down to that we all could agree to. That's where the five types of thinking came from. (Wanda)

> The district people are there in many ways to inform the work [and] to say, "We're the people out here in the field doing this work, these are the people we need [and] what we need [them] be able to do." I think they've been able to affect change back and forth. So, things that happen in the district affect the program, changes in the program are affecting the district. (Peggy)

> It was an iterative successive approximation process where we put everything on the table. Early on we broke into groups, we brainstormed, we consulted the standards, then we thought about what does that look like in application? [After] we got an initial set of categories of thinking, we broke off and, over time, [worked in] sub-teams. So, usually three or four people ... they were responsible for building out one of the five things. And then we come back together, show those and critique them. And that's how I think they best evolved over time. (Sam)

One of the major early points of moving from theory into action was in the establishment of these workgroups where we had come as a large group with district partners in identifying five explicit areas of leadership thinking. So, we [came to] agreement on what those five major areas would be [and] at that point, we then divided into these working groups. One of the working groups was the operational thinking working group. [For] me that was ... I feel like I turned a corner. And so those [small] workgroups [had] six or seven of us comprised of myself as an RSU faculty member, and then district partners, and some other folks who worked within the program. But primarily, district partners. That was the majority thinking that was there. (Mora)

However, the development of the Five Types of Leadership Thinking had to go beyond helping to set shared expectations for assessing candidates. As Peter stated, "The behaviors had to reflect not only the standards, both types, but the team's explicit focus on equity as well." Hope agreed: "[Developing the Five Types of Leadership Thinking] .... was a critical moment because it was actually seeing how a university could conceive of a curriculum that would reinforce the dispositions of equity leadership [in our district]." The Five Types of Leadership Thinking served as a means of checking alignment between curriculum, clinical practice, and assessment while serving as a method of continual reflection on the efficacy of their program.

> While [the Five Types of Leadership Thinking] do not represent a comprehensive set of standards, but rather the thinking that overlies all of the standards, they do highlight a gap in the ways in which future leaders have been educated. These ways of thinking, and the standards that are connected and applied by engaging in this type of thinking, are guiding syllabus revisions and new syllabi development, as well as local performance assessments of candidates' knowledge, skills, and dispositions. (Tony)

> The first things that come to mind are how the Five Types of Leadership Thinking that are foundational to our program. The equity index, as well as some of the equity-driven leadership attributes and responsibilities. I feel that I was a big part of the design and development of those. As well as trying them out with actual students and classes in our district. (Natasha)

> Then what we did was, as a result of those standards we were able then to fully create our school profile and our leadership profile in the sense that creating those metrics that would be aligned to those expectations. We were able then to align the data to help us assess how well leaders are performing. (Bruce)

> To me, [Five Types of Leadership Thinking] were one step closer to reflecting the actual performance in the workplace. All of our syllabi have to have the California State standards on them for standardization. But we're hoping that [our candidates] can look at these 600 plus statements that come out of the standards and [see that] ultimately what we're after is for you to be a reflective, equity-driven practitioner and you're going to call upon what you've learned in these five domains [and] that is how you will be successful on the job. (Sam)

As a result of the experience, the RSU team updated the Five Types of Leadership Thinking to align with both California Administrator Performance Expectations (CAPE) and California Professional Standards for Education Leaders (CPSEL), Tier 1 and Tier 2 standards, creating a cohesive set of experiences that helped all parties "own" the standards as well as the competencies they're designed to capture. As Sam reflected,

> The Five Types of Leadership Thinking stands out in my mind because it's most proximal to what actually happens in the real world. A lot of times we get stuck in standards and other more deconstructed aspects of what people need to learn and do without really thinking about how they will come together on the job at the moment of need. I think a lot of times the actual practice, the application goes unnoticed or underappreciated. (Sam)

Finding #3 Brief Analytic Summary

The team participated in several activities designed to help them come to a shared understanding about the underlying strengths and weaknesses of the existing program (QM process), identify a collective vision of the future and strategic, collective path forward (Logic Model), and align the activities they planned to produce the types of graduates they envisioned for their redesigned program (Five Types of Leadership Thinking). As with the previous finding, the activities involved in the development of these artifacts featured the TLBs of boundary spanning, constructive conflict, and learning by doing (team activity) because each involved overcoming the siloed perspectives traditionally found in their work and coming to a truly "shared" vision and collective strategy. While it will be discussed further in the following section, the TLC of leadership was also apparent throughout this finding. The mentor program (American

Goldfinch University) designed the structured learning process of small and large group teaming activities, while the team leader (Tony) created the conditions that empowered the team to experiment (and risk failure) as they learned together. This represented a shift from more superficial *partnerships* and *collaborations* whereby organizations engage in joint work but never relinquish control of what they consider their existing expertise; to a new type of *interdependent* working relationship. The team was able to learn and generate knowledge through the transformation of the group experience (Kayes et al., 2005).

Finding #4

Team leadership drove many aspects of the redesign process.

Table 14. *TLCs Aligned to Finding #4*

Dimension of TLC	Frequency of comment	Number of commenters
Team leadership (TL)	15	7/11
Psychological safety (PS)	6	5/11

The team's leadership had a profound impact on the team's learning and development as well. While the facilitating role of leadership for team learning (Decuyper et al., 2010) and innovation development (Bos-Nehles et al., 2017) has been well established in research, that influence has also informed several aspects of the learning and productivity of the redesign team. As mentioned previously, Tony was RSU's department chair and served as UCRI Project Director. As such, he led the team's redesign activities and was the primary liaison between the university and the Education Foundation—the initiative's funder. Additionally, he was responsible for securing the commitments of the partnering districts to engage in the redesign effort. **Most team**

members (7/11) stated that Tony's leadership contributed to the team's development and the successful implementation of the redesign process. Tony practiced a "shared leadership" style throughout the redesign process. Shared leadership is

> the transference of the leadership function among team members in order to take advantage of member strength (e.g., knowledge, skills, attitudes, perspectives, contacts, and time available) as dictated by either environmental demands or the development stage of the team. This kind of leadership does not presuppose the absence of a hierarchical formal leader, but it does require the formal leader to relinquish authority to other members of the team and therefore enhances team learning. (Decuyper et al., 2010, p. 125)

These leadership influences were most directly experienced by the RSU representatives on the team. Sometimes this leadership style was demonstrated through the removal of structural barriers and having the highest expectations for the team's work:

> Leadership frames the ability to [make change]. Tony, as Project Director but also as Department Chair, was taking it upon himself to make it clear to the team that he was prepared to clear the way at the levels above to make that change. So, he kind of took that structural barrier off the table. And made it okay to look at a significant change. It [also] helps when you're a grantee and you're provided with resources to do this work. It adds a level of credibility and urgency to the work. (Peter)

> The strategy comes from [Tony]. I mean [Tony] is phenomenal at what he does. So, there's no way to not give that credit there. That's for starters ... to have sound solid leadership and people who buy into it. And that epitomizes the potential and the possibilities of a good strategy, you know, having good leadership. (Clint)

Tony echoed this point on holding the team to high expectations and building a team he was confident in: "I think our motivation is to be the best, to have market share, to be the best program out there, at least in California if not the country. We're motivated to be the best." He continued:

> That [high standard] comes with the territory of who I'm able to recruit. They are driven. They've experienced success in their past, either as a superintendent or a principal or whatever, and they know what it takes to do jobs. Unlike some professions where you're hiring a lot of novices, they

need to be trained up, we don't do that. I haven't had to spend time developing expertise. I spend time on how the team functions, how the team works, how the team accomplishes stuff, not on their expertise. (Tony)

This sense of trust was touched on by several team members. **Nearly half of the team members (5/11) described Tony's leadership in terms related to creating conditions ripe for experimentation and psychological safety.**

> [Tony's] a key part of that because he's a very creative individual, and so I think that that's part of it. But it is also his prioritizing creative ideas and allowing and creating spaces where those ideas can be emerged and shared without being sort of shut down. Again, universities, another characteristic of them is that they propose to be quite egalitarian spaces but they are really rife with power structures. And I think that [Tony] has done a really good job of making sure that all voices have equal value and prominence. (Peter)

> It's really [Tony] saying, "It's okay to have a unique thought." I think that oftentimes the new person ... and also grappling with all the identities you're walking in with in addition to being a new person, it may be hard to say in front of somebody who's going to be serving on your advancement committee, "I don't agree with you," or, "I have a thought." (Peggy)

> [Tony] is somebody that I've known and respected for many, many years, and not realizing that I was on his radar for something bigger and greater. From [Tony's] vote of confidence, and me being involved in other projects [with him] that I wouldn't have otherwise been involved in, other people have gotten to know me, and who I am personally. As well as a leader. (Natasha)

This appeared to be an intentional strategy on Tony's part. Making others feel valued, particularly given the hierarchical structure of higher education, required making those expectations explicit.

> I really said to people, "I really want to know what you think. Don't hold back. Tell me the truth." So, I think I publicly said that all the way through our team. I think that's important. I think it also comes with experience with me and experiences with each other that ideas are valued. That when we talk to each other, we want to hear what people have to say [so] that we make decisions based on the best information that we can find. So, I think experience matters ... that [they say] "Wow, he did ask. And I wasn't belittled or shamed or told that was a bad idea." All of those experiences shape our next willingness to engage. (Tony)

For his part, Tony acknowledged his own positional authority but felt his real effectiveness came from motivating others and acting as a problem solver: "I mean, I have the de facto title that I'm the boss at [Redwood State]. So, there is that. There's positional authority there. I get that. But I think, on the team, it has to do with credibility, knowledge, experience, dedication. There are qualities that people look for in someone they want to follow." This was echoed by Sam: "I trust [Tony] for everything ... so, when I see him okay with [taking something on], then immediately my default is [to think] 'This is going to work.'"

Finding #4 Brief Analytic Summary

Team leadership influenced several aspects of the team's learning. As mentioned throughout this chapter, Tony helped to create conditions to support the team's learning. His existing relationships and reputation as a scholar in the education leadership field helped attract partnering districts to engage in the redesign. His positional authority within the university provided the opportunity to align the team's efforts with the broader organizational goals of RSU and empowered the team members (through increased psychological safety) to take calculated risks in designing an innovative program. Taken together, these efforts helped strengthen team cohesion and reduce many of the traditional barriers to change that usually stifle redesign efforts.

Finding #5

Few participants reflected on their own learning; rather, they focused on changes in their practice and ways to improve the process.

While there was significant learning that took place on the team in the process of their redesign activities, few of the team members reflected on their learning as a distinct phenomenon. Rather, the team seemed to describe their own learning—on the occasions

that it was described at all—through the lens of accomplishing a task such as a

programmatic milestone or improving some functional area.

> We engaged in some group learning, like "What are theories of action? Why are they useful? Why would they be asking us for this?" And we made an important decision. But [the logic model] became a critical incident for me because it showed how the team learned to come together because this is early in the process. How the team learned to come together, how they learned to communicate with one another, how they learned to make decisions and how they learned to problem solve. And I think they got, from that experience, there are multiple right answers to this. (Tony)

> I thought [the RSU partnership] was a real learning experience as we got to understand what the future expectations for our leaders will be. Especially in the performing assessment, the Cal-APA, and then that helped us really look at "How do we bring a performance type of assessment for leaders in their learning as well?" (Bruce)

> So, there's learning that I've taken, bits and pieces of coach training, that I've sat through with our principals that I use in my day-to-day work. So, I don't want to underestimate it, but I also am not sure how many actual direct links I would make to my day-to-day work. But I know there are influences, there are affirmations, there are resources that I've used that have resulted because of the partnership ... outside of the day-to-day work. That we can reach out to [Tony] and colleagues to say, "Can you comment on this? Or what resources do you have for this upcoming [learning community] visit?" Going through [the] process together and sharing materials [and] ways of thinking. [The partnership] is a learning community for us beyond the walls of our district. (Wanda)

The team seemed to describe its learning more in the context of how their

individual or organizational practices had improved and, to a great extent, attributed that

improvement to their experiences on the team. Both university and district team members

seemed to conclude that they had a better understanding of the needs of principals on the

ground, and that understanding had influenced their practice.

> But one of the things [I learned] for sure is just understanding the impact of a principal [and] a preparation program and understanding how the reclamation of [those experiences] is so central and so pivotal. Not only that but just understanding how relationships across stakeholders matter and can really impact the kinds of changes that are needed. [I got] to see that in action…. (Clint)

I think as open as anyone believes they are … [no one] says, "I'm not open to new ideas." That's just not how any of us perceive ourselves. But [if] you've been teaching a course for a number of years; one of two things happens. You either get stale and this becomes routine, and you don't want to change it because you've reduced the number of hours you have to put into it. Or you continually invested in it to the point where you really feel it's working well. It's a natural tendency to say, "Why are you breaking this?" [But] every once in a while, putting yourself in check, it helps me realize that when I'm working with new [principals] there are a lot of teachers in school that feel that way. So, I'm glad that I trust my colleagues and process enough that I have not dug in my heels as much. What I personally learned is its human nature to not want to change something that's working well. But when you're part of a large effort, [you've] got to realize you're part of the orchestra, you're not a soloist. (Steve)

I've had more empathy, understanding of our newest principals. The first three years is such a learning curve for principals and I don't take that for granted anymore. I'm much more methodical in my messaging and how I share our initiatives or share any news. I make sure that I connect with my newest principals more frequently. (Bruce)

I mean, I'm proudest that the whole cohort will come out and go back into our schools with a changed perspective on their role as an educator, which will impact, if nothing else, it will impact the students. On a larger level, my hope is that it impacts their entire school. And potentially if they go into administration, their sphere of influence expands with that working knowledge, and with what they have learned, they will take it out into the field and use it. (Wanda)

The clearest demonstration of the team's collective learning toward improved practice is perhaps the team member organization's intentional efforts to spread their lessons across the state of California. As reported in Finding #1, organizational strategy served as a catalyst for the partnership's formation. But it influenced the team's cohesiveness and how it positioned itself for future opportunities as well. This spread goes beyond recruiting students to their redesigned (and improved) program. At the time of this study, RSU was revising the performance assessment (Cal-APA) based on results from the "pilot year" for all program candidates to identify improvement opportunities. In addition, RSU also received a grant from a California-based funder to mentor five other principal preparation programs across the state in redesigning their programs, which has

the potential to impact future leaders statewide. The potential to share their learning more

broadly was voiced by several team members:

> I think the team's greatest success is that their event horizon has really
> moved beyond [Redwood State], and now the state of California. And I see
> the team as being hugely influential, now, in the state. At the beginning, it
> was about designing work for [Redwood State]. Now, the work of the team
> is really focused on the spread strategies, developing opportunities for
> further work around the state, and sharing their learning with others. But I
> think their biggest accomplishment is taking something that has been
> successful at [Redwood State] and now how can we share our learning with
> others so they can figure out what that success looks like in other parts of the
> state. (Peter)

> The redesign has led to not only the attention of state policymakers, and
> other state and district leaders but [funders] too because [that] really supports
> the next level from the [Education Foundation] work ... statewide support for
> leadership development. My role there is to really help other universities
> connect better with their districts [and] to make [them] partners, real
> partners, in the work. (Natasha)

> I think our greatest success, which is one that I plan on absolutely
> continuing after this project's sunset, is that we have been able to develop
> much more meaningful and deeper relationships with district partners that
> not only I know will continue, but have also helped us to be able to initiate
> new relationships with districts that we don't have partnerships with.
> Because it's kind of like we've got a little bit of a blueprint of how to go
> about doing that. (Mora)

> It's personally given me hope for other universities to think that so we
> now have [another local university] knocking at our door frequently wanting
> to talk about our partnership. They know that we're working with [Redwood
> State] since we were transparent about that. But so, it gives me hope that
> even in that academic setting there's a potential to transform what students
> experience. I personally think just back to the core beliefs like it also
> personally affirms just the need to really stick to your core beliefs even when
> things are hard. (Wanda)

Finding #5 Brief Analytic Summary

The team exhibited several TLBs throughout the redesign process, including

boundary spanning, team activity, and constructive conflict, which resulted in newly

productive, interdependent relationships and new ways of working together. Despite the

practice changes that resulted, the team rarely perceived their learning as a distinct phenomenon. However, evidence of the team's learning was best exhibited through the artifacts this learning produced, such as a Logic Model, updated leader standards, and revised course sequences among others. This type of unnoticed, incidental learning (Marsick & Watkins, 1990) was achieved through accomplishing a task such as a programmatic milestone or improving some functional area. While most team members did not reflect on their individual learning, the artifacts produced and activities implemented through the redesign process demonstrate a deeper understanding of the perspectives and values of partners.

Chapter Summary

This chapter began with a review of the research questions explored in the study and a brief overview of the five main findings. I explained that the findings would be presented thematically rather than solely as a series of "counts" (e.g., x/19) to indicate the frequency with which a particular TLB, TLC, or IWB was mentioned or experienced by participants. This was done for two reasons: first, since the concepts of team learning and innovative work behavior are dynamic and integrative processes and, despite their conceptual distinctions, they should not be treated as a series of discrete and separate parts. The second reason for the thematic presentation was that participants tended to reflect on their learning and describe their activities in relation to those incidents—or other programmatic goals and milestones—rather than as a distinct activity. In essence, they learned and developed as a team while attempting to execute a series of tasks.

The study's findings were that: (1) contextual pressures and opportunities served as both a catalyst for the initial partnership as well as continuous improvement; (2) the team used the process of reimaging the new program as a way to develop a shared vision, identify opportunities for improvement, and realign partnership activities and processes

to implement the work; (3) partnerships evolved from "collaboration" to "interdependency" with success in this effort building confidence and credibility in future opportunities; (4) team leadership drove nearly all aspects of the process; and (5) few participants reflected on their own learning; rather, they focused on changes in their practice and ways to improve the process. Findings were discussed in greater detail with additional quotes from participants to illustrate the sentiment shared by the larger group, to offer a more nuanced or augmentative point-of-view about a larger theme and maximize the diversity of voices included. The next chapter analyzes these findings to respond to the research questions in the context of the research literature and the theoretical lens used for the study.

Chapter VI

ANALYSIS

Introduction

This study sought to understand the team learning conditions (TLC) and experiences of a university-based cross-boundary work team attempting an innovative redesign of a principal preparation program. The work team brought together stakeholders representing a lead university, three partnering, high needs public school districts, and a mentor program. The previous chapter synthesized the descriptive findings obtained from 11 in-depth interviews with members of the redesign team, field observations, and Critical Incident Questionnaires. This chapter presents the analysis, synthesis, and interpretation of the study's key findings to answer the study's research questions. The data were coded and analyzed first by research question, and then organized thematically in alignment with the conceptual framework presented in Chapter II. The framework draws on the work of Widmann et al. (2016, 2019), Widmann and Mulder (2018), and Decuyper et al. (2010) in conceptualizing how the various aspects of team learning relate to each other and innovation development (see Figure 3 in Chapter II). The study was based on the following four research questions:

1. What, if any, team innovative work behaviors (TIWBs) and team learning behaviors (TLB) were experienced by the cross-boundary work team?

2. To what extent, if any, did their work as a team result in perceived learning?

3. In what ways, if at all, has the cross-boundary work team's practice changed as a result of participating in the redesign process?

- In what ways, if at all, has the individual team members' daily practice within their respective organizations changed as a result of participating in the redesign process?

4. How, and to what degree, have contextual factors enabled and/or impeded the learning and practice of cross-boundary work team members?

These four research questions were satisfied, in part, by the findings presented in the previous chapter. Several dimensions of team learning behaviors were exhibited by the team, and that learning was strongly influenced by conditions such as *organizational strategy* and *team leadership*. Further, while these behaviors were exhibited throughout the bounded lifespan of the team's development, it was difficult for the team to reflect on their own learning or changes in everyday practice that resulted in the abstract. Rather, the team's perceptions of its own learning were most clearly articulated in the context of work (i.e., developing a product or implementing an activity).

In this chapter, I share insights resulting from a cross-interview analysis. The goal was to develop a more sophisticated and nuanced view of the findings (Miles & Huberman, 1994). To address the core research questions, this chapter analyzes key research data based on similarities and differences in participants' interview responses, as well as observations and related documents and artifacts, in order to shed additional light on the findings, and thus the research questions. The discussion takes into consideration the literature on adult learning, team learning, innovation, and university-based principal preparation. The implications of these findings are intended to shed light on how cross-boundary work teams learn in the field of education. The chapter concludes with a reflection on my initial assumptions from Chapter I, and a summary that incorporates a note regarding potential researcher bias in the interpretation of the findings.

Analytic Categories

Three relevant analytical categories, or key distinctions in the patterns in the data, emerged from the findings: (a) team learning behaviors (TLB) and team innovative work behaviors (TIWB) as dynamic, inter-connected, non-linear processes; (b) organizational and environmental forces influencing learning; and (c) perceived learning and practice changes (see Table 15). Addressing the first research question, the cross-boundary work team experienced team learning behaviors and innovative work behaviors as dynamic, interconnected, non-linear processes in alignment with Decuyper et al. (2010), Widmann et al. (2019), and Widmann and Mulder (2018). The activities contributing to the achievement of milestones the participants identified as critical incidents showed several fluid and interconnected aspects of the team learning and innovation process. The second analytical category, perceived learning and practice change, corresponds to the study's second and third research questions. As mentioned in Chapter V, few of the team members reflected on their learning as a distinct phenomenon. Rather, the team members seemed to describe their own learning through the lens of accomplishing a task such as a programmatic milestone or improving some functional area. The third analytical category responds to the fourth research question in the study and comprises the organizational and environmental forces that impacted learning. Included in this category were the team learning conditions (TLC) articulated by Decuyper et al. (2010). Those related to team leadership, psychological safety, organizational strategy, and systems thinking were mentioned more often and by more participants than other TLC.

Table 15. *Research Questions, Analytic Categories, and Definitions*

Research Question	Analytic Category	Definition of Category
(1) What, if any, team innovative work behaviors (TIWBs) and team learning behaviors (TLB) were experienced by the cross-boundary work team?	(1) Team learning behaviors (TLB) and team innovative work behaviors (TIWB) as dynamic, inter-connected, non-linear processes.	This category encompasses *which* TLB and TIWB the team experienced or exhibited while implementing the redesign.
(2) To what extent, if any, did their work as a team result in perceived learning?	(2.0) Perceived team learning and practice changes.	This category encompasses the ways and degree to which the team reflected on their own learning.
(3) In what ways, if at all, has the cross-boundary work team's practice changed as a result of participating in the redesign process? (3a) In what ways, if at all, has the individual team members' daily practice within their respective organizations changed as a result of participating in the redesign process?	(2.1) Perceived team learning and practice changes.	This category encompasses the ways in which the team transferred what they learned through their participation in the redesign to their ongoing work sites.
(4) How, and to what degree, have contextual factors enabled and/or impeded the learning and practice of cross-boundary work team members?	(3) The organizational and environmental forces influencing learning.	This category encompasses the organizational and environmental forces that *influenced* the team's learning.

Analytic Category 1: Team Learning Behaviors (TLB) and Team Innovative Work Behaviors (TIWB) as Dynamic, Inter-connected, Non-linear Processes (Research Question 1)

The first research question sought to determine which team innovative work behaviors (TIWBs) and team learning behaviors (TLB), if any, were experienced by the cross-boundary work team. In describing their experiences as part of the redesign team,

the participants utilized descriptors that align to Decuyper et al,'s (2010) conceptualization of team learning as reflecting knowledge acquisition (sharing, storage, and retrieval), participation (boundary-crossing, team activity, and team reflexivity), and creation (co-construction and constructive conflict). All of the team learning behaviors that are part of basic behaviors (i.e., what happens when teams learn) and facilitating behaviors that are important for generating shared knowledge were present, although not to the same degree. The TLB, TLC, and IWB most often described by the team are defined in Table 16.

Table 16. *Definitions TLB, TLC, and IWB Described by the Team*

Team Learning Behaviors	
Dimension	**Definition**
constructive conflict	A conflict or an elaborated discussion that stems from diversity and open communication and leads to further communication and some kind of temporary agreement (Van den Bossche et al., 2006).
team reflexivity	While engaging in team reflexivity, teams build shared cognition about the team goals, about the ways to reach them, and about the process of working towards their goals (Decuyper et al., 2010). Team reflexivity can be seen as a process of double-loop learning within the team (Argyris, 1977).
boundary spanning	Taking initiative to cross its borders, that is, sharing and asking for information and feedback with/from other individuals or units outside of the team (Kasl et al., 1997).
team activity	The process of team members working together, mobilizing physical and psychological means required for goal attainment. Learning by doing (Arrow et al., 2000).

Table 16 (continued)

Team Learning Conditions	
Dimension	**Definition**
team leadership	Team leadership is then defined in terms of the conditions or functions that need to be present in a team, in order to be learning and working effectively. Drath et al. (2008) define leadership in terms of three basic functions: direction (vision), alignment (organization and coordination) and commitment (engagement towards vision).
psychological safety	A shared belief that the team is safe for interpersonal risk-taking and a sense of confidence that the team will not embarrass, reject, or punish someone for speaking up (Edmondson, 1999).
organizational strategy	Influences of the organization or the environment on learning including organizational culture, reward system, and viewing local responsiveness elements as key resources (Decuyper et al., 2010).
systems thinking	The capability of team members to think in terms of interdependent systems [and] to understand how their team is a system that is interdependently connected to actions of all other team members, other stakeholders in the organization, customers, competitors, the environment, etc. (Senge, 1990; Sterman, 1994; Vennix, 1996).
Innovative Work Behavior	
Dimension	**Definition**
Idea realization	Activities to implement the idea [including] the development of the innovation, making it part of regular work processes and testing and modifying the outcome (De Jong & Den Hartog, 2010; Messmann & Mulder, 2012).

In this context, and in alignment with Decuyper et al. (2010), constructive conflict includes the process of negotiating diverse or even contradictory meanings and by striving toward an agreement or compromise beyond team members' comfort zone (Van den Bossche et al., 2006). Team reflexivity involves a discussion about strategies, methods, tasks, and processes to get a clear vision about the team's goals and establishing the

methods and processes of working toward them. Team reflexivity can be seen as a process of double-loop learning within the team (Argyris, 1977). Boundary spanning involves the team members taking initiative to cross their own borders, that is, sharing and asking for information and feedback with/from other individuals or units outside of the team (Kasl et al., 1997). Team activity involves working toward the attainment of team goals and developing and testing new working methods and routines that enable the team to accomplish their tasks more efficiently—learning by doing (Arrow et al., 2000). As seen in Table 17 below, team members most frequently described their activities and processes in terms I refer to as the basic processes of constructive conflict, and the facilitating processes of team reflexivity, boundary spanning, and team activity. Analysis of data by demographic factors such as education, age, and gender did not yield any noteworthy patterns. However, analysis based on team member organizational type (i.e., university, district, or mentor program) resulted in some patterns worthy of additional attention. Following is a discussion of the cross-case analysis of data for the team learning behaviors based on the main indicators for each category, as well as insights based on related theory, and my own observations/experience, as appropriate (see Tables 18-22).

Table 17. *Cross-case Analysis of Content/Overview*

	University (n=5)	School District (n=4)	Mentor (n=2)	Total (n=11)
Dimension of Team Learning Behavior (TLB)				
Team reflexivity	3	4	2	9
Boundary spanning	4	4	0	8
Constructive conflict	3	3	2	8
Team activity	3	3	0	6
Dimension of Team Innovative Work Behavior (TIWB)				
Idea realization	5	1	1	7

In articulating their experiences as part of the redesign team, the team members utilized descriptors aligned to TLBs as conceptualized by Decuyper et al. (2010). The researcher coded their responses to reflect this conceptualization. While none of the learning dimensions were described by all 11 team members, "team reflexivity" was described by 9 of the participants, including all members from the school districts and mentor program. The learning dimensions of "boundary spanning" and "constructive conflict" were both described by 8 of the participants. Team activity was described by just over half the participants. The researcher notes that neither of the team members from the mentor program described "boundary spanning" or "team activity." The remaining basic and facilitating learning behaviors of "storage and retrieval," "knowledge sharing," and "co-construction" were mentioned by fewer than half of the participants.

Team learning behaviors.

Team reflexivity.

Table 18. *Cross-case Analysis of Content/Team Reflexivity*

	University (n=5)	District (n=4)	Mentor (n=2)	**Total** (n=11)
Dimension of TLB				
Team reflexivity	Number of commenters			
	3	4	2	**9**
	Frequency of comment			
	6	5	2	**13**

Team reflexivity involves a discussion about strategies, methods, tasks, and processes to get a clear vision about the team's goals and establishing the methods and processes of working toward them. As a self-described "high performing team," these dimensions were widely described across various activities in how they developed a clear

vision on where they stood (current reality), where they wanted to reach (ultimate team goals), and how they planned to reach it (team methods and instrumental team goals). While the dimension of "team reflexivity" was mentioned by nearly all team members, a review of the indicators for this category shows some slight variation in emphasis between the cases. The dimension of team reflexivity was mentioned by all of the district and mentor team members but was mentioned most frequently by team members from the university.

While the broad goal of redesign was established by the Education Foundation, the vision for the desired future state was led by the university in close collaboration with the districts through a process structured, in part, by the mentor program. As university-based team member Sam stated,

> I think that to be honest with you, the fact that somebody was funding this work [helped], [but] we had already gone through a fair amount of reflection in applying for the funding. So, we knew what we were signing up for. And I think we already had established an expectation among ourselves for the fact that's what we would do. (Sam)

The ultimate team goal, as espoused by university-based team leader Tony, was exceptionalism: "I think our motivation is to be the best, to have market share, to be the best program out there, at least in California if not the country. We're motivated to be the best." From the university's perspective, this goal went beyond meeting and exceeding standards of excellence within the field. Rather, it was seeking a unique value proposition offered by Redwood State University. In the case of the redesign team, that value was an explicit focus on equity and producing school leaders prepared to lead with equity-centered values. Tony continued, "In every conversation about what it takes to be the best, it ends up being about the inequities [in the school system] and the fact that [university's] have not delivered on a promise of equity [and] despite decades of work, schools are still inequitable. [As] as result, society is inequitable." This equity-centered vision was shared by the districts as well, most notably by district-based team member

Wanda, who remarked that the university's vision for equity-driven leadership is what attracted her to being part of the team—going out of her geographic region to work with RSU. She had been frustrated by the fact that "[our] local university partners … were not moving in the same direction relative to equity… as we wanted to."

This reflection of current vs future state seemed most clearly prevalent as the team assessed the RSU program's effectiveness along the five domains of Education Development Center's (King, 2018) Quality Measures process, and the development of the Five Types of Leadership Thinking (i.e., improved performance standards). In both cases, the team seemed to have rather explicit conversations about the strengths and weaknesses of their current program, processes, and assessments while continually reflecting on how to achieve their vision. This is consistent with past research that has found that team reflexivity promotes awareness of the objectives, strategies, processes, and environments of teams. This awareness may lead to the identification of discrepancies between current and ideal factors in the team's domain, prompting arousal and action such as innovation to reduce the discrepancies (Schippers et al., 2015).

Boundary spanning.

Table 19. *Cross-case Analysis of Content/Boundary Spanning*

	University (n=5)	District (n=4)	Mentor (n=2)	**Total** (n=11)
Dimension of TLB				
Boundary Spanning	Number of commenters			
	4	4	0	**8**
	Frequency of comment			
	7	9	0	**16**

Boundary spanning involves taking initiative to cross the borders of the team, that is, sharing and asking for information and feedback with/from other individuals or units

outside of the team (Kasl et al., 1997). In the context of this study, boundary spanning was quite prevalent both between team members from different organizations and with stakeholders and constituencies outside of the team. This was due, in part, to the team's structure, which was heavily influenced by the design of the University Curricular Redesign Initiative (UCRI) and required representation from the redesigning university, its partnering districts, and the mentor program. Like "team reflexivity," "boundary spanning" was mentioned by the majority of team members. A review of the indicators for this category shows the dimension was noted by all district team members, nearly all (4/5) university team members, and quite frequently by these participants as well. The primary boundary spanning activities described by participants occurred *within* the team by members from different organizations in the design phase and *between* the redesign team and other members of their respective organizations. As Clint remarked, "[One] of the things [I learned] for sure is just understanding … how relationships across stakeholders matter and can really impact the kinds of changes that are needed." As the team began to prototype various aspects of the redesign, they began to seek the input of other practitioners and stakeholders from outside the team, avoiding the dangers of "groupthink" while seeking to ensure that the team's work was as relevant to current and aspiring school leaders as they had hoped.

However, it should be noted that while boundary spanning was noted most often by university- and district-based team members, it was not mentioned by either of the two mentor program-based team members. This may potentially be attributed to the unique position the mentor program members played on the team. While the American Goldfinch University (AGU) representatives were part of the redesign team, they were in some ways external to it as well. The structure of URCI dictated that Redwood State (RSU) partner with a mentor program—a traditional or alternative principal preparation program that had particular expertise in areas that the university program sought to develop or improve. Having been selected by RSU to help support their redesign process,

perhaps AGU viewed themselves more as facilitators and resources to the team's redesign process rather than members *participating* in it. Describing herself as a facilitator, Peggy reflected on her experiences on the team a "designer in service of the content." Relatedly, AGU had no previous relationship with RSU or their district partners. As a university based outside of California, they did not serve the same communities or prepare principals to serve in local school districts. Finally, as AGU had already completed their own redesign with district partners years prior, perhaps boundary spanning activities were taken for granted as a necessary part of the process and so did not rise in their minds.

Constructive conflict.

Table 20. *Cross-case Analysis of Content/Constructive Conflict*

	University (n=5)	District (n=4)	Mentor (n=2)	**Total** (n=11)
Dimension of TLB				
	Number of commenters			
Constructive conflict	3	3	2	**8**
	Frequency of comment			
	8	4	7	**19**

Constructive conflict is a process of negotiation or dialogue that uncovers diversity in identity, opinion, etc. within the team. It is defined here as a conflict or an elaborated discussion that stems from diversity and open communication and leads to further communication and some kind of temporary agreement (Van den Bossche et al., 2006). As opposed to "regular" conflict, which might be seen as a personal or emotional rejection instead of a difference in the interpretation of the problem, constructive conflicts are more likely to lead to learning and conceptual advancement and tend to lead team members out of their comfort-zone (Decuyper et al., 2010). A review of the

indicators for this dimension shows it was noted by most of the team (8/11) and across all member types. It was noted most frequently by the university-based members, followed closely by the mentor program-based members. It is possible that this was mentioned more frequently by these groups due to their roles on the team. As mentioned previously, as the redesigning university, RSU was primarily tasked with changing their program to be more effective and more fully meet the needs of their districts. Conversely, AGU had already successfully redesigned their program and was responsible for helping facilitate a similar process based within the unique context at RSU. In both cases, team members were responsible for negotiating the diversity of backgrounds, experiences, cultures, and perspectives on the team in order to accomplish their goal.

While it seems there was general agreement about the team's strategic goal of focusing on "equity-centered leadership" as central to their redesign, concretizing that goal and making it explicit across the practical aspects of the program (i.e., standards, exit exam, logic model, etc.) required building trust, negotiating diverse perspectives, and navigating power dynamics within the organizations. This was a challenge anticipated by some of the university team members. As Clint stated, "I don't know that we were ready for the harder conversations, [but] the work can go much deeper if you just keep coming back and giving people time to develop the trust needed to push on each other's thinking." This was echoed by Steve, who said, "We started to understand how much more powerful we could be if [we had] more of a perspective of what the districts' programs were doing. Rather than the districts just being involved in what we were doing." Negotiating perspectives was not limited to including districts in a university change process but addressing internal differences of opinion within the university as well. For example, there was some initial disagreement about the scale of the changes the program would make. This was one aspect of the mentor program's facilitation task. As mentor program team member Peggy stated, "I had a little bit of a concern that the team

might be seeing this as a tweak versus a complete overhaul and redesign .... This is bigger than just a tweak."

Communication toward coming to an agreement occurred at several points throughout the redesign process as the team completed several of the program's milestones, including undergoing the Quality Measures (QM) process and the development of the program's Logic Model, the Five Types of Leadership Thinking, and revised exit exam. Navigating constructive conflict on task performance uncovered the diversity of identity and opinion within the team and even challenged some longstanding beliefs. The influence of diversity on the conversation went beyond simply a "diversity in perspective," but a diversity of culture and background that informed how team members approached a redesign focused on equity. As Clint stated, "I'm talking specifically about diversity in perspective as it relates to people of color and their experiences and how those experiences translate into the work that they do and how they see the world." This was expressed by both university- and district-based team members.

These aspects were at the forefront of the minds of mentor program team members. As Peggy stated, "The racial and other hierarchy dynamics are extant. I have to work to get [some people] to stop talking so much, and [consider], 'What other perspectives do we have?'" She continued, "I think that's another layer of this is making sure that you give yourself the time to develop the trust but then also recognize that you're never going to move completely away from the identities and the hierarchies that are present." This desire to ensure disparate voices were heard was reinforced by Peter—another mentor program-based team member: "Having critical conversations [and] mutually beginning to understand where each person is coming from and the type of barriers that they have to face really makes a difference." According to Decuyper et al. (2010), some prior research suggests that the constructiveness of a conflict depends on its nature: affective/relational conflict versus cognitive/task conflict (De Dreu & Weingart, 2003). Jehn (1995) showed, for example, that relational conflicts are dysfunctional, while moderate levels of task

conflict are beneficial for team performance. Ultimately, it seems that the team was able to leverage this constructive conflict toward team performance by ensuring that disparate voices were heard and valued.

Team activity.

Table 21. *Cross-case Analysis of Content/Team Activity*

	University (n=5)	District (n=4)	Mentor (n=2)	Total (n=11)
Dimension of TLB				
Team Activity	Number of commenters			
	3	3	0	6
	Frequency of comment			
	4	4	0	8

Team activity is the process of team members working together, mobilizing physical and psychological means required for goal attainment. It involves testing new working methods and developing routines that enable the team to accomplish their tasks more efficiently—in effect, learning by doing (Arrow et al., 2000). A review of the indicators for this dimension shows it was noted by just over half of the team (6/11) and in equal numbers of commenters and frequency by the university and district team members. Improvements in work routines and increasing efficiency occurred throughout the redesign process and were explicitly remarked on in connection to the achievement of milestones the participants previously identified as critical incidents. Experimentation can be considered a special form of team activity and a necessary mode of system activity for effective learning (Dechant et al., 1993; Decuyper et al., 2010; Goodman & Chalofsky, 2005; Kayes et al., 2005; Senge, 1990; Sterman, 1994). This version of team activity is potentially most evident in the development and continuous refinement of the California Administrator Performance Assessments (Cal-APA). At the time of this study, RSU

piloted a revised performance assessment (exit exam) and continuously refined the exam's design based on candidate feedback and analysis of their performance. This process served to put the team's learning and insight into action while providing an opportunity for continuous improvement. The team recognized they had not "cracked the assessment piece" but that it improved with every implementation cycle.

However, while team activity was noted by both university- and district-based team members, it was not overtly mentioned by either of the two mentor program-based team members. As with boundary spanning, the unique position that the mentor program members played on the team, facilitators of the team as well as members of it, may have focused on helping create the conditions for team activity, rather than feeling like full participants in those activities themselves.

Team innovative work behavior. Team innovative work behavior (TIWB) is defined as the sum of all physical and cognitive work activities teams carry out in their work context to attain the necessary requirements for the development of an innovation (Messmann & Mulder, 2012). Team innovative work behavior consists of four interrelated tasks that must be undertaken in the development of an innovation: (a) opportunity exploration, (b) idea generation, (c) idea promotion, and (d) idea realization (Messmann & Mulder, 2012). Contrary to my expectation, no team innovative work behaviors (TIWBs) were clearly exhibited or described by the team with the exception of idea realization. The scarcity of findings related to IWB could be the result of methodological choices, conceptual aspects of learning at work (i.e., informal or situational learning), the demographic makeup of the team, or some combination.

One potential explanation for the dearth of team innovative work behavior findings could be a result of how the data were collected. Previous studies on IWB in interdisciplinary work teams utilized surveys as the primary data collection method (De Jong & Den Hartog, 2010; Messmann & Mulder, 2012, 2015; Widmann et al., 2016, 2019). This was done to enable the analysis of many teams composed of hundreds of

individuals across multiple organizations and even between countries. However, as this study's unit of analysis was a single cross-boundary work team, the primary data collection method was a series of semi-structured interviews utilizing a Critical Incident Technique (Flanagan, 1954) with members of the redesign team and the initiative's funder. Respondents were asked to reflect on their experiences as part of a redesign *process* rather than the redesign's *outcome*. As Merriam (1988) stated, "The interest [in a qualitative study] is in process rather than outcomes" (p. xii); while this does not mean that qualitative research is unconcerned with outcomes, it does emphasize that a major strength of qualitative research is in getting at the processes that led to these outcomes, processes that experimental and survey research are often poor at identifying (Britan, 1978; Maxwell, 2004; Patton, 1990). Additionally, De Jong and Den Hartog (2010) found survey-based employee self-ratings and supervisor ratings of IWB to have inherent problems. The decision to privilege interviews over surveys (where participants would have been asked to explicitly respond to IWB indicators) may have made IWB harder for me to detect.

Another potential explanation for the scarcity of team innovative work behavior findings could be how the data were coded. I employed a structural coding method that applies a content-based or conceptual phrase representing a topic of inquiry to a segment of data that relates to specific research questions used to frame the interview (MacQueen et al., 2008). As structural coding both codes and initially categorizes the data, I believed it was the most suitable for interview transcripts. However, as mentioned previously, team learning and innovative work behavior are dynamic and integrative processes that should not be treated as a series of discrete and separate parts. As such, it is possible that some of the overlapping or concurrent activities that were coded solely as team learning behaviors could have been simultaneously coded as innovative work behaviors as well. Simultaneous coding is the application of two or more different codes to a single qualitative datum and is appropriate when the data's content suggests multiple meanings

that necessitate and justify more than one code, since complex "social interaction does not occur in neat, isolated units" (Glesne, 2006, p. 150; see also Miles & Huberman, 1994). For example, the IWB task of *idea generation*—which involves a critical examination of predominant beliefs, the expression of new ideas, and the public discussion of the changes necessary to solve the identified problem—includes activities that could be considered aspects of the TLBs of "boundary spanning" or "team reflexivity" depending on the context.

Idea realization.

Table 22: *Cross-case Analysis of Content/Idea Realization*

	University (n=5)	District (n=4)	Mentor (n=2)	**Total** (n=11)
Dimension of TIWB				
Idea Realization	Number of commenters			
	5	1	1	7
	Frequency of comment			
	10	1	1	**12**

In articulating their experiences as part of the redesign team, the team members utilized descriptors aligned to the TIWB of "idea realization" as conceptualized by Messmann and Mulder (2012). The researcher coded their responses to reflect this conceptualization. Idea realization was described by just over half (7/11) of the team members, but only once each by two team members representing a school district and the mentor program. However, this dimension was mentioned by all university-based team members and relatively frequently. Idea realization involves the creation of a physical or intellectual prototype of the innovation, experimenting and refining it based on feedback, and planning on its strategic integration into organizational practice. Idea realization

includes not only the development of the innovation but also making it part of regular work processes and testing and modifying the innovation-based outcomes (De Jong & Den Hartog, 2010; Messmann & Mulder, 2012). It is possible that idea realization was more significant to university-based team members for several reasons. The overall goal of the university's participation in the initiative was to redesign its program based on evidence of best practice and with the feedback and collaboration of their partner districts. As such, it was likely a shared expectation that the redesign process would involve piloting and testing new approaches to implementing their program—specifically across the Quality Measures' five domains (recruitment and selection of candidates, curriculum, instructional methods, clinical practice, and assessment of outcomes for graduates). In addition, these activities also aligned to programmatic milestones of the UCRI initiative and were identified as critical incidents by team members. Finally, an orientation of continuous improvement, and an expectation "to be the best," was a consistent feature of the team's work.

Analytic category 1 summary. Detailed examination of the indicators for the first analytical category (behaviors observed) identified the basic processes of "constructive conflict" and the facilitating processes of "team reflexivity," "boundary spanning," and "team activity" as the team learning behaviors (TLBs) most exhibited by the redesign team. When considered across member types (university, school district, and mentor program), the dimensions of "team reflexivity" and "boundary spanning" were mentioned by the majority of team members and were mentioned most frequently by team members from the university. The dimension of "constructive conflict" was noted by the majority of team members, most frequently by the university-based members, followed closely by the mentor program-based members, while "team activity" was noted by just over half of the team and in equal numbers of commenters and frequency by the university and district team members. Contrary to my expectation, no team innovative work behaviors (TIWBs) were exhibited or described by the team except for "idea realization." The

dimension of "idea realization" was described by all university-based team members and relatively frequently, but only once each by two team members representing a school district or mentor program. Potential explanations for the scarcity of findings related to IWB, including how the data were collected and coded, were also discussed.

Analytic Category 2: Organizational and Environmental Forces that Influenced the Team's Learning

The fourth research question sought to determine how, and to what degree, contextual factors enabled and/or impeded the learning and practice of the redesign team. This analytic category encompasses the organizational and environmental forces that influenced the team's learning. Different conditions can hinder or enhance effective team learning by influencing TLBs (Decuyper et al., 2010; Edmondson, 1999). Some of the most discussed barriers of team learning identified in the literature include groupthink (Aldag & Fuller, 1993; Janis, 1972), diffusion of responsibility (Wallach et al., 1964, in Kayes et al., 2005), dominant leader (Edmondson et al., 2001), Abilene paradox (Harvey, 1974), free riding (Wagner, 1995), social loafing (Karau & Williams, 1993; West, 2004), and conflict escalation (McGrath et al., 2000; Senge, 1990; Wildemeersch et al., 1997). Due to the many potential pitfalls teams experience, they often fail to learn (Edmondson, 1999; Van den Bossche et al., 2006).

In their review of team learning literature, Decuyper et al. (2010) found ten variables that were most commonly explored in the literature and seem to have the most influence on team learning: shared mental models, team psychological safety, group potency and team efficacy, cohesion, team development and team dynamics, interdependence, team leadership, team structure, organizational strategy, and systems thinking. In describing their experiences as part of the redesign team, the participants utilized descriptors that align with Decuyper et al.'s ten variables that influence team learning, referred to here as team learning conditions (TLC). The researcher coded their responses to reflect this conceptualization. As seen in Table 23, team members most

frequently described their activities and processes in terms most aligned to the TLCs of organizational strategy, team leadership, psychological safety, and shared mental models. While none of the learning conditions were described by all 11 team members, "organizational strategy" was described by 7 of the participants, including both members of the mentor program and approximately half of the members from the university and school districts. The learning condition of "team leadership" was also described by 7 participants, similarly distributed across member types. The dimensions of "psychological safety" and "shared mental models" were described by 5 and 4 participants, respectively. The remaining TLCs of group potency and team efficacy, cohesion, team development, team dynamics, interdependence, and team structure were mentioned by fewer than 1/4 of the participants.

Table 23. *Cross-case Analysis of Content/Overview (TLC)*

	University (n=5)	School District (n=4)	Mentor (n=2)	**Total** (n=11)
Dimension of Team Learning Conditions (TLC)				
Organizational strategy	3	2	2	**7**
Team leadership	4	1	2	**7**
Psychological safety	2	1	2	**5**
Shared mental models	2	1	1	**4**

Analysis of data by demographic factors yielded no noteworthy patterns; however, analysis based on team member organizational type did. Following is a discussion of the cross-case analysis of data for the team learning conditions based on the main indicators for each category, as well as insights based on related theory, and my own observations/experience, as appropriate (see Tables 24-27).

Organizational strategy.

Table 24. *Cross-case Analysis of Content/Organizational Strategy*

	University (n=5)	District (n=4)	Mentor (n=2)	**Total** (n=11)
Dimension of TLC				
Organizational strategy	Number of commenters			
	3	2	2	7
	Frequency of comment			
	10	6	4	**20**

Organizational strategy refers to many inputs for team learning at the level of the organization or the environment. Some example inputs from the literature include organizational culture (Bain, 1998; Homan, 2001; Senge, 1990; Williams & O'Reilly, 1998; Zellmer-Bruhn & Gibson, 2006), national culture (Yorks & Sauquet, 2003), reward system (Slavin, 1980, 1996; Sundström et al., 2000; Vinokur-Kaplan, 1995), authority system (Bain, 1998; Brooks, 1994a; Bunderson & Sutcliffe, 2003; Foldy, 2004; Gerwin & Moffat, 1997; Homan, 2001), and knowledge management system (Argote et al., 2003; Gibson & Vermeulen, 2003; Zellmer-Bruhn & Gibson, 2006). A review of the indicators for this dimension shows it was noted by most of the team (7/11) and across all member types. It was noted most frequently by the university-based members, followed by the school district members and then the mentor program. The fact that the dimension was mentioned most frequently by the university, but relatively evenly mentioned by all member types, may be due in part to the fact that each member organization had their own reason to participate on the team.

This rationale for participation seemed to be both the result of environmental pressures and alignment with each organization's strategy to solve persistent, "real-world" problems. Decuyper, et al. (2010) citing Zellmer-Bruhn and Gibson (2006),

showed how different organizational strategies of Multinational Companies (MNC) that use teamwork have different implications for team learning. They showed that strategy features such as global integration, tight coordination, and interdependence between subsidiaries constrain local adaptation, inhibiting team learning. Through its efforts to integrate, central leadership restricts the potential changes teams can consider, reducing their opportunities to look for improvements and their motivation to learn. Conversely, strategies viewing local responsiveness as key resources, and supporting independence and low corporate socialization, positively influence subsidiary team learning, because they promote both the necessity and feasibility of learning.

As mentioned in Chapter IV, there were several contextual factors that contributed to the environmental and organizational influences experienced by the team. Those environmental influences were present at the national, state, and local levels. At the national level, these influences included the passage of the Every Student Succeeds Act (ESSA, Pub. L. 114-95, 2015)—a reauthorization of the federal Elementary and Secondary Education Act (Pub. L. 89-10 165). ESSA allowed states to use federal funds on activities that would improve the quality and effectiveness of principals and other school leaders (Herman et al., 2017) and explicitly required states to consult with specific stakeholder groups on the development of the ESSA plan and other decisions (Council of Chief State School Officers, 2020). Additionally, newly developed National Professional Standards for Educational Leaders (PSEL) provided a set of research-based core principles and values about what constitutes effective school leadership (National Policy Board for Educational Administration, 2015). While indirect influences on the team itself, these two national efforts strongly influenced the design of the University Curriculum Redesign Initiative (UCRI) and the required milestones the team needed to successfully complete. These aspects influenced the context under which the team began their redesign work and influenced the process of implementation.

At the state and local level, environmental influences included several changes California undertook to strengthen its preparation and certification system for school and district administrators. Contrary to the voluntary national PSEL standards, California's updated program and administrator professional standards (*California Professional Standards for Education* Leaders, CPSEL) along with new, mandatory content and performance expectations for candidates (*California Administrator Performance Assessments*, Cal-APA) had a significant influence on the team's learning. As mentioned previously, the team was required to develop or adapt program-level (university) standards and align them to district-level leader standards as a required milestone of UCRI. The Foundation's rationale in requiring this was the belief that by co-developing a set of shared standards, the partners would agree on the necessary skills and competencies that an effective principal should have. However, since all university programs and districts *must* be aligned to the state standards, the team expressed frustration with the misalignment between the grant's expectations and the team's local context. Resolving this issue spurred the team to create a set of shared standards aligned to the state's (authority system) and in compliance with the funder (reward system) while strengthening the interorganizational relationships by directly responding to some longstanding challenges identified by the districts—including desired improvements in hiring, professional development, and evaluation—all of which are influenced by the standards. This organizational tension between compliance with authorities and responsiveness to local needs and opportunities seemed to be among the chief influences on the team's learning.

Team leadership.

Table 25. *Cross-case Analysis of Content/Team Leadership*

	University (n=5)	District (n=4)	Mentor (n=2)	**Total** (n=11)
Dimension of TLC				
Team leadership	Number of commenters			
	4	1	2	7
	Frequency of comment			
	10	2	3	**15**

Team leadership is often defined in terms of the conditions or functions that need to be present in a team in order to learn and work effectively. For example, Drath et al. (2008) define leadership in terms of three basic functions: direction (vision), alignment (organization and coordination), and commitment (engagement toward vision). Covey (2004) adds the functions of empowerment and modeling. Decuyper et al. (2010) state, "This kind of leadership does not presuppose the absence of a hierarchical formal leader, but it does require the formal leader to relinquish authority to other members of the team and therefore enhances team learning" (p. 126; see also Brooks, 1994a; Day et al., 2004). Like "organizational strategy," a review of the indicators for this dimension shows that references to "team leadership" were noted by most of the team (7/11), but while noted across all member types, it was noted much more frequently by the university-based members. This could be explained, at least in part, by the team's structure and distribution of responsibilities.

By design of UCRI, the university was the "lead partner" in all aspects of the initiative—from preparing and submitting the initial funding proposal, to identifying partner districts and selecting the mentor program, to ensuring the timely completion of deliverables and other milestones. At Redwood State University (RSU), the department

chair (Tony) served as Project Director, leading the team and serving as the primary liaison between the university and district partners as well as between the team and the Education Foundation. Tony helped to create conditions for the team's learning through a combination of positional authority within the university, national recognition as a scholar in education leadership and equity, empowerment, and modeling high expectations.

As department chair, Tony was able to place the redesign project within the context of the larger organizational strategy of RSU's Department of Educational Leadership. For example, the team's activities provided the opportunity to redesign course content and clinical experiences in close consultation with several districts in the region. These partner districts, all primarily made up of students of color, allowed the university to redesign "equity-centered" leadership content based on, and in response to, the needs of their consumer. Similarly, the districts got greater access to the university, in some cases having district staff serving as clinical faculty, and the opportunity to ensure that the candidates trained at the university (anticipated to potentially serve in the district) have been trained with their local context in mind. In addition to aligning the redesign activities to the department's equity strategy, he also ensured the work was protected to some extent from other confinements of the university system. As UCRI Project Director and Department Chair, Tony made it clear to the team that he was "prepared to clear the way at the levels above" and address some of the structural barriers that would have made change unlikely.

Tony's prior research and reputation also helped to facilitate the team's learning. At the time of the study, he had already authored or co-authored several journal articles and books, one focused explicitly on educational equity, and was a nationally respected leader in the education field. This reputation allowed him to attract the participation of desired districts, quickly build trust among the team members, and get buy-in on a vision and strategy. This was mentioned often by the university members: "... sound, solid

leadership and people who buy into it ... that epitomizes the potential and the possibilities of a good strategy" and "I trust [Tony] for everything ... so, my default is [to think], 'This is going to work.'" This is not to imply that other team members did not take a leadership role. At several points throughout the redesign process, leadership was delegated to the team member best suited to tackle a specific piece of work. Doing so helped the team not only to distribute the tasks more equitably between members, but also to "really *own* the process." This shared leadership style was demonstrated throughout the redesign process and resulted in greater team cohesion and increased psychological safety.

Psychological safety.

Table 26. *Cross-case Analysis of Content/Psychological Safety*

	University (n=5)	District (n=4)	Mentor (n=2)	**Total** (n=11)
Dimension of TLC				
Psychological safety	Number of commenters			
	2	1	2	**5**
	Frequency of comment			
	3	1	2	**6**

Team psychological safety is "a shared belief that the team is safe for interpersonal risk-taking" and represents a sense of confidence that the team will not embarrass, reject, or punish someone for speaking up (Edmondson, 1999). As mentioned previously, and in alignment with Edmondson, empowering leaders are those who coach team members and help to resolve problems, effect team norms, stimulate team communication, and enhance team learning. Team psychological safety mediated the effect of leadership on team learning. A review of the indicators for this dimension shows it was noted by just under half of the team (5/11) and across all member types. It was noted slightly more frequently by the university-based members, and to a lesser extent by the school district and mentor

program members. The fact that the dimension was described most frequently by the university, but relatively evenly mentioned by all member types, likely reflects the role of team leadership in creating the conditions for creative expression in the context of the redesign. The team often described the need and desire to "put everything on the table" as an essential step to accomplishing the team's various tasks. Some aspects of the redesign required them to revise and refine an existing aspect of their program—the Cal-APA "exit exam," for example; while others required them to create something new in alignment with funder expectations, such as the logic model and Five Types of Leadership Thinking. Irrespective of the task, the voices of all member types on the team were expected to have equal value and prominence. As one member put it, "It's okay to have a unique thought." This was possibly because the team was very intentionally constructed, ostensibly because each member had the combination of skills and expertise necessary to achieve the team's goals. It is possible that this allowed the team to begin with the assumption that their ideas were welcome—an assumption, intentionally supported by the team's leader, who stated, "When [a team member] wasn't belittled or shamed or told 'that was a bad idea.' All of those experiences shape our next willingness to engage." Team members described the atmosphere on the team as one that prioritized creative ideas and created spaces where those ideas could "emerge and [be] shared without being shut down." This pursuit of surfacing the best ideas as a way to achieve the team's goals is potentially reflective of the fact that, as mentioned previously, the team was motivated to be the best preparation program in the state, if not the country. This sense of high expectations for the team's performance helped create conditions where new ideas were encouraged.

Shared mental models.

Table 27. *Cross-case Analysis of Content/Shared Mental Models*

	University (n=5)	District (n=4)	Mentor (n=2)	**Total** (n=11)
Dimension of TLC				
Shared mental models	Number of commenters			
	2	1	1	**4**
	Frequency of comment			
	2	2	1	**5**

Shared mental models are the team members' shared, organized understandings and mental representations of knowledge about key elements of the team's task environment (Klimoski & Mohammed, 1994; Kozlowski & Bell, 2008). Shared mental models result from team learning processes, immediately reinforce them, and catalyze team learning. According to Senge (1990), effective teams develop shared mental models about the current reality (shared situational awareness), the shared future (shared vision, values and goals), and the way to realize the shared vision starting from current reality (meta-cognition, instrumental theories, methods, procedures, strategies). From his perspective, teams should develop shared mental models about both the current and future state because "it is the difference between them between them that facilitates a creative tension that generates motivation for team learning" (Decuyper et al., 2010, p. 122).

A review of the indicators for this dimension shows it was noted by fewer than half of the team (4/11) and with fairly equal frequency across all member types. An analysis of data by team member organizational representative yielded no noteworthy patterns; however, the development of shared mental models in what Wegner (1987) and Wegner et al. (1991) call "the transactive memory system" can be seen throughout the team's

milestone development, particularly that of the Logic Model (Appendix I). As mentioned previously, as a condition of the grant, the redesign team was tasked with developing a program-specific logic model to guide the redesign process. After using the results of the Quality Measures (QM) process to determine the current state of the program (baseline), the team established a clear vision of the future and demonstrated how the redesign features they planned would lead to that new program they envisioned. Essential to this process, as with many others in the redesign process, was the idea of a *shared* vision and path forward. As the university and school district partners may have come to the initial partnership with different ideas or visions for what a program that met their needs would consist of, they needed to collaboratively develop the path forward. That "creative tension" was often expressed as the team sought to develop a collective identity and move beyond the organizational silos they had traditionally occupied. A driving feature of this learning process on the team seemed to be ensuring "utility" rather than simply compliance concerning many of the team's activities. For example, in describing the approach to the Logic Model, one team member said, "Let's look at what it needs to be, but let's make it useful for us. Let's not go through some task that's not going to mean anything to us." Ultimately, it resulted in codifying the team's collective vision, process, and strategies, as well as desired outcomes at their future state.

Analytic category 2 summary. Detailed examination of the indicators for the second analytical category (environmental factors) identified the TLCs of "organizational strategy," "team leadership," "psychological safety," and "shared mental models." When considered across member types (university, school district, and mentor program), the dimensions of "organizational strategy" and "team leadership" were mentioned by the majority of team members, including both members of the mentor program and approximately half of the members from the university and school districts. The dimensions of "psychological safety" and "shared mental models" were mentioned by about half of the participants and fairly equally distributed across member types. The

remaining TLCs of group potency and team efficacy, cohesion, team development, team dynamics, interdependence, and team structure were mentioned by fewer than 1/4 of the participants.

Analytic Category 3: Perceived Team Learning and Practice Changes (Research Questions 2 and 3)

The second and third research questions sought to determine to what extent, if at all, the team's efforts in the redesign process resulted in perceived learning and practice changes. This analytic category encompasses the ways and degree to which the team reflected on their own learning as well as the ways in which the team transferred what they learned through their participation in the redesign to their ongoing work sites. Contrary to my expectation, none of the participants could identify a specific skill or behavior that they learned as a result of their participation on the redesign team, and few (2/11) could articulate how their participation may have influenced their everyday practice. Rather, when probed, participants tended to describe their learning activities in relation to critical incidents—or other programmatic goals and milestones—rather than as a distinct activity. As with the study's findings related to IWB mentioned previously, the scarcity of findings related to perceived learning and practice change could be the result of methodological choices of the researcher and conceptual aspects of learning at work (i.e., informal or incidental learning).

As mentioned previously, the primary data collection method was a series of semi-structured interviews utilizing a Critical Incident Technique (Flanagan, 1954) with members of the redesign team and the initiative's funder. I expected that the team would experience moments when they were able to achieve certain task goals (or milestones) for the first time, and they would also potentially face problems that were beyond their capability to resolve. Further, I anticipated that participants would also experience moments when they discovered that the assumptions they had made or understandings they possessed were not sufficient for problem situations in the workplace (Billett, 1994).

This perspective was captured by a team member describing his experience: "That really threw into disarray everything we had traditionally assessed in our program…." While the team did describe incidents critical to their development and how they were able to achieve certain goals *as a team*, it is possible they did not recognize their own learning as distinct from those activities and thus could not articulate that learning. Marsick and Watkins (1990) used informal and incidental learning to distinguish between planned and unplanned learning. They described informal learning as experiential and non-institutional, and incidental learning as unintentional, a byproduct of another activity. In this context, learning is assumed to be an action arising from experience that may enable the learner to develop and acquire new skills. The literature on incidental learning has highlighted that this type of learning is unintentional or unplanned learning that results from other activities in the workplace. It often occurs through observation, social interaction, and problem solving. Incidental learning is often not recognized by employees as learning per se and, like informal learning, is not always recognized by the organization as legitimate learning (Le Clus, 2011). This does not mean that learning has not occurred; rather, it is possible that the learning has simply gone unrecognized.

Chapter Summary

In this chapter, a detailed analysis was provided for each analytic category of the findings. Detailed examination of the indicators for the first analytical category (behaviors observed) identified the basic processes of "constructive conflict," and the facilitating processes of "team reflexivity," "boundary spanning," and "team activity" as the team learning behaviors (TLBs) most exhibited by the redesign team. When considered across member types (university, school district, and mentor program), the dimensions of "team reflexivity" and "boundary spanning" were mentioned by the majority of team members and most frequently by team members from the university.

The dimension of "constructive conflict" was noted by the majority of team members, most frequently by the university-based members, followed closely by the mentor program-based members; while "team activity" was noted by just over half of the team and in equal numbers of commenters and frequency by the university and district team members. Contrary to my expectation, no team innovative work behaviors (TIWBs) were clearly exhibited or described by the team except for "idea realization." The dimension of "idea realization" was mentioned by all university-based team members and relatively frequently, but only once each by two team members representing a school district or mentor program. Potential explanations for the scarcity of findings related to IWB were also discussed.

Detailed examination of the indicators for the second analytical category (environmental factors) identified the TLCs of "organizational strategy," "team leadership," "psychological safety," and "shared mental models." When considered across member types (university, school district, and mentor program), the dimensions of "organizational strategy" and "team leadership" were mentioned by the majority of team members, including both members of the mentor program and approximately half of the members from the university and school districts. The dimensions of "psychological safety" and "shared mental models" were described by about half of the participants and fairly equally distributed across member types. The remaining TLCs of group potency and team efficacy, cohesion, team development, team dynamics, interdependence, and team structure were mentioned by fewer than 1/4 of the participants.

Finally, an examination of the indicators for the third analytical category (perceived learning) showed that, contrary to my expectation, none of the participants could identify a specific skill or behavior that they learned as a result of their participation on the redesign team, and few could articulate how their participation may have influenced their everyday practice. Rather, participants tended to describe their

learning activities in relation to the achievement of tasks, goals, or milestones; not as a distinct activity. Potential explanations for these phenomena were discussed.

In summary, the team exhibited several team learning behaviors throughout the redesign process. While all TLBs explored were described by all the member types, most behaviors were described most frequently by the university-based team members. Only one TIWB was overtly described by the team, but many of the behaviors identified through TIWB mirror several of the learning behaviors that were articulated by the team. The team's capacity for learning and innovating was strongly influenced by the organizational conditions that brought the team together as well as the team's structure, leadership, and facilitation. While few of the team members were able to articulate their own learning and practice changes explicitly, they did reflect on their learning in the context of task completion and goal achievement. The next chapter provides a discussion of the analysis of findings, as well as conclusions and recommendations for future research and practice implications.

Chapter VII

DISCUSSION

Synthesis

In the previous chapter, a detailed analysis was provided for each analytic category of the findings. The following three analytical categories were identified: (a) team learning behaviors (TLB) and team innovative work behaviors (TIWB) as dynamic, inter-connected, non-linear processes; (b) organizational and environmental forces influencing learning; and (c) perceived learning and practice changes. In this chapter, I will discuss key points from the analysis of findings and provide an interpretation of the meaning and implications of the major themes that emerged from the findings.

Aligned to *Research Question 1*, the analytic category of dynamic processes encompasses which TLB and TIWB the team experienced or exhibited while implementing the redesign, and demonstrated how processes were recurring, messy, and non-linear. In addition, it begins to explain how the team's composition and structure, existing relationships and roles, and the timing of the study itself influenced the findings. The Education Foundation and the design of the University Curricular Redesign Initiative (UCRI) greatly influenced the team's structure. As mentioned in Chapter IV, while each organization could select the representatives who served on the team, the team's broad structure and organizational membership type were dictated by the initiative's design (i.e., university, district, and mentor program membership). This funder requirement resulted in a *cross-boundary* redesign team.

Team structure refers to the extent to which the division of labor (specialization), leadership roles within the team (hierarchy), work routines, priorities. and procedures (formalization) are clearly defined and understood by the team members (Bresman & Zellmer-Bruhn, 2013). The intentional structure of the redesign team helped provide clarity on each of these aspects: leadership (hierarchy) through the designation of a Project Director as team lead, specialization through membership type, and broad team objectives and priorities through the goals of the initiative (formalization). It also ensured that boundary spanners would be present to question existing ways of working and offer multiple perspectives that could lead to innovation. The team's structure influenced both TLBs such as boundary spanning (discussed in the next section) as well as TLCs such as team leadership (discussed in the analytic category of *organizational* and *environmental influences* below).

I anticipated that the team would exhibit several of the team learning behaviors identified by the literature—particularly the behaviors and features exhibited by relatively mature teams. The team's experience largely supported existing literature. In planning and implementing the redesign, the team continually engaged in discussion about strategies, tasks, and processes to inform vision and goal setting; sought information, perspectives, and resources from outside their respective organizations; and developed and tested new working methods and routines. As many of the team members had existing working relationships, the TLBs of team reflexivity and team activity enabled the team to acquire and process new information quickly and efficiently. However, since the redesign team's specific membership and structure were relatively new, boundary spanning and constructive conflict occurred throughout the redesign process (cyclically rather than sequentially), causing the team members to continuously interrogate their own assumptions, rationales, and work routines based on dialog and others' perspectives (i.e., double-loop learning). Team members had to integrate their knowledge with others' knowledge by revealing implicit assumptions about the problem they were trying to solve

and by working to understand each other's perspective through probing. In this way, they could uncover each other's mental models, which had implicitly shaped solution paths, and appreciate the constraints or priorities that mattered to the others with respect to each solution (Edmondson & Harvey, 2017). But, not every cross-boundary teaming effort required deep issues to be resolved or new agreements to be created. In some instances, the team was able to develop integrative solutions without "deeply sharing" each other's knowledge, thereby "transcending knowledge differences rather than traversing knowledge boundaries" (Majchrzak et al., 2012, p. 952). As a result, some of the team's redesign activities moved relatively quickly, while others required the team had to "go slow to go fast" and seek consensus before moving forward. This analytical category highlighted the strength of Decuyper et al.'s (2010) model, recognizing that different types of TLBs occur in varying combinations, and to varying degrees, either simultaneously or sequentially.

I anticipated that the team would exhibit all four interrelated tasks that must be undertaken in the development of an innovation, including opportunity exploration, idea generation, idea promotion, and idea realization. While the environmental forces that influenced TIWB will be discussed in the following section, it is worth noting here that the team's experience seemed to only partially support existing literature on the team innovative work behaviors most likely to be demonstrated within the context of universities and other knowledge-intensive public sector organizations (KIPSOs). In planning and implementing the redesign, the team did not exhibit any innovative work behaviors save for *idea realization* (i.e., testing and modifying the innovation and making it part of regular work processes). This ran contrary to my expectation, as some previous research on KIPSOs (Bos-Nehles et al., 2017) argued that these organizations seem to be successful in *generating* innovative ideas, even if structural impediments make turning these innovative ideas into the new norm difficult. Conversely, the team's experiences supported previous research on innovation in higher education that focused largely on

improvements to operational effectiveness, whether in curricular programs (McClure, 2015), delivery mechanisms (Davis & Jacobsen, 2014), pedagogical approaches, support service mechanisms (Sultan & Wong, 2013), or management (Amaral et al., 2003; Hasanefendic et al., 2017). Each of these areas aligns with the "idea realization" phase of IWB. As mentioned in Chapter VI, the scarcity of findings related to IWB could be the result of methodological choices of the researcher. It is possible that several TLBs exhibited by the team could have been considered IWBs when viewed through a different methodological lens. Further, the research was conducted on a relatively stable team that had been together for nearly two years, asked to reflect on their experiences (both current and previous). While the team may be involved in the accomplishment of one or more IWB tasks simultaneously and repeatedly, had they been observed at a different stage of the project—and by extension a different stage of team development—it is possible that the other IWB tasks may have been exhibited as well.

Aligned to *Research Questions 2* and *3*, the analytic category of perceived team learning and practice changes encompasses both the ways and degree to which the team reflected on their own learning and transferred what they learned to their ongoing work sites. I anticipated that the team would reflect on their own learning in the context of their work. As educators responsible for designing the learning experiences of others, I believed that reflection as a distinct task would be part of their daily practice and experience. This belief was based on previous research, which articulated several team learning behaviors that point to an ongoing process of collective reflection and action (Argyris & Schön, 1978; Edmondson, 1999; Gibson & Vermeulen, 2003; Kasl et al., 1997; Van der Vegt & Bunderson, 2005). However, as mentioned in Chapter V, this was not the case, at least not overtly so. Deeper analysis begins to explain why team members seemed to describe their own learning through the lens of accomplishing a task such as a programmatic milestone or improving some functional area.

As part of the redesign process and participation in UCRI, the team achieved several of these tasks and produced artifacts such as a Logic Model, updated leader standards, and revised course sequences, among others. Edmondson and Harvey (2017) point to practices involving dialog, such as stories and metaphors, but also objects like diagrams, prototypes, and models, as helpful to practitioners traversing knowledge boundaries. Learning behaviors, accompanied with objects, are thus "useful for teaming across boundaries to broaden understanding of the problem faced, and to find and adapt approaches to solving it" (p. 353). The process of developing these artifacts required different approaches and discourse than had been previously employed, and the implementation and refinement of programmatic improvement required new ways of working within and across organizations. While most team members did not reflect on their individual learning, the artifacts produced and activities implemented through the redesign process demonstrate a deeper understanding of the perspectives and values of partners. This analytical category supports the types of unintentional, unplanned, or invisible (unrecognized) learning that is embedded within activity, context, and culture (Eraut, 2004; Lave & Wenger, 1990; Marsick & Watkins, 1990).

Aligned to *Research Questions 4*, the analytic category of organizational and environmental influences encompasses the forces that facilitated or inhibited the team's learning. This includes the larger social system in which the team is embedded, the characteristics of the task the team is tackling, the timeframe of the teaming effort, and the leadership or governance structure under which the team is acting. I anticipated that the team would experience several of the team learning conditions (TLCs) identified by the literature—particularly team leadership, team structure, interdependence, and group potency, which prior research had found could positively influence the TLBs studied here (Widmann & Mulder, 2018). In addition, I expected that the bureaucratic environment represented by universities and other KIPSOs would potentially stifle learning and innovative efforts but that skillful leadership could moderate these effects. This latter

point was strongly supported, as deeper analysis showed that the intersection of team structure, leadership, and organizational strategy created conditions for accelerated learning and practice changes.

Team structure clearly defines each team member's role and tasks using specialization, hierarchy, and formalization. When roles, tasks, task sequences, and routines have been clearly specified by a team's structure, teamwork becomes a more predictable process, and formalization helps team members to establish a shared understanding about how to organize individual work to achieve collective goals (Ji & Yan, 2020). Research suggests that hierarchy in a team tends to decrease uncertainty in interpersonal interactions, benefits intrateam coordination, and helps to establish shared behavioral expectations for different team members (Halevy et al., 2011, 2012). Hierarchy is an aspect of the team's structure. In the context of this study, hierarchy is represented by the team's leadership.

As mentioned in Chapter V, the team's leader helped create conditions for the team's learning through a combination of positional authority within the university, national recognition as a scholar in education leadership, empowerment, and modeling high expectations. Further, the team's leader helped align the team's activities with the broader organizational goals, some of which preceded the team's involvement in the initiative. As a result, while the traditional barriers to change in the KIPSO setting described in Chapter IV were still present, the alignment of the team's efforts with the organization's culture and goals supported the team's redesign efforts. This analytical category supports the existing literature on the role of leadership and organizational strategy (and culture) in supporting both innovation and team learning.

Discussion and Conclusions

As stated in Chapter IV of this study, the Education Foundation (the Foundation) established the University Curriculum Redesign Initiative (UCRI) as a multi-million dollar grant program incentivizing universities to redesign their principal preparation programs in close collaboration with the districts that hire their graduates and in alignment with the growing evidence base on high-quality principal preparation. The study followed Redwood State University (RSU) and their district partners (Palomar, Border Field, and Carlsbad) as they attempted an innovative redesign of RSU's principal preparation program. The study's findings were as follows: (1) contextual pressures and opportunities served as both a catalyst for the initial partnership as well as continuous improvement; (2) the team used the process of reimaging the new program as a way to develop a shared vision, identify opportunities for improvement, and realign partnership activities and processes to implement the work; (3) partnerships evolved from "collaboration" to "interdependency" with success in this effort, building confidence and credibility in future opportunities; (4) team leadership drove nearly all aspects of the process; and (5) few participants reflected on their own learning; rather, they focused on changes in their practice and ways to improve the process. These results are largely in line with the desired outcomes of UCRI, which themselves were a response to longstanding beliefs about the necessity of university-district partnerships in the improvement of university principal preparation. This discussion will focus on the structural aspects of UCRI and the context of university-based principal preparation in an attempt to gain additional insight about this experience when viewed through the theoretical lenses of innovation (public sector), organizational and team learning, and university-district partnerships; it will make recommendations therein.

Team Learning Behaviors (TLB) and Team Innovative Work Behaviors (TIWB) as Dynamic, Inter-connected, Non-linear Processes (*Research Question 1*)

Two major findings of this study related to how the practical activities involved in collaboratively envisioning a new program that authentically engaged district partners' perspectives in all aspects deepened team cohesion. Creating a "shared vision" for the redesigned program and explicitly involving partners' expertise in all aspects of design and implementation shifted the partnership from a traditional "collaboration" to a newly interdependent relationship. At least two conclusions can be drawn from these results. First, these results indicate high levels of engagement in TLBs and some moderate levels of engagement in TIWB (specifically the domain of *idea realization*) that were experienced by the team as they engaged in a series of complex tasks and programmatic milestones related to the redesign process. Second, the team also remained relatively stable over the course of implementation, and this stability likely led to the exploration of new opportunities to spread that learning. As Widmann and his colleagues (2019) found, one possible reason for the high engagement and stability relates to the structure of the team. The redesign team worked on complex work tasks to meet institutional and environmental challenges and were together over a longer period with little change in team composition. The results might be different for recently established teams, as past research has shown that more team learning occurs in the later phases of team development (Raes et al., 2014), and engagement in TLBs might be expected to increase in long-established teams.

While the redesign team's specific membership and structure (i.e., university, districts, and mentor program) were dictated by the design of the UCRI initiative and were relatively new, many of the participants had existing relationships and had worked together in the past in dyads and smaller subgroups or on more discrete tasks. That could explain why, in some ways, the redesign team experienced the same learning stages as newly formed teams (i.e., Dechant et al.'s [1993] fragmented, pooled, synergetic, and continuous learning phases), while in others they were able to ramp up more quickly and

get some of the learning benefits of more established teams. One of those benefits is ongoing knowledge sharing and boundary spanning, resulting in increased contact with other team members and individuals outside the team when implementing new ideas. Previous research has found that teams that share knowledge throughout the year are better at evaluating alternative solutions during idea realization (BoSomech & Drach-Zahavy, 2007; Widmann et al., 2019). This may explain the presence of the sole TIWB finding of idea realization. Idea realization involves implementing new ideas, producing a prototype or model of the new product, technology, or process (Janssen et al., 2004), testing and modifying the prototype (Scott & Bruce, 1994), and routinizing the new way of doing such that the innovation becomes part of the regular work processes of workgroups or entire organizations (De Jong & Den Hartog, 2010). The team's successes in the redesign went beyond recruiting students to their redesigned (and improved) program. The process resulted in Redwood State University, in collaboration with at least one of their partner districts, receiving a grant to mentor five other principal preparation programs to similarly redesign their own programs.

Perceptions of Team Learning and Practice Changes (*Research Questions 2 and 3*)

Another major finding of this study was that few of the study's participants reflected on their own learning; rather, they focused on changes in their practice and ways to improve the process. Two conclusions can be drawn from this. First, learning, in the context of this redesign team, was indistinguishable from their daily work, and evidence of it can be most clearly seen in the artifacts they produced through their learning rather than through reflection upon the learning itself. Despite reporting significant change to several aspects of their program and acknowledging that their work practices have changed as well, participants had difficulty articulating the learning that resulted from those changes and how that learning influences their day-to-day work. This experience closely resembles what past research has articulated as informal learning,

which is largely invisible because much of it is either taken for granted or not recognized as learning. As such, individuals often lack awareness of their own learning, and the resulting knowledge is considered part of the individual's personal capability rather than something that has been learned (Eraut, 2004). However, despite their difficulty describing the more complex aspects of their work and the nature of their learning experiences, several artifacts demonstrate that learning has occurred. As part of this redesign work, the university and districts served as reciprocal thought partners and decision makers in course sequencing, field-based learning (clinical practice), and culminating exit exam. Reciprocally, the university worked to help the districts revise their principal job descriptions and evaluations. Artifacts of the team's work, including the Logic Model, Five Types of Leadership Thinking (i.e., Professional Expectations), and updated Cal-APA (exit exam), show a principal preparation program that is materially different than it was previously and more clearly reflects the insights gained through the cross-boundary partnership between the university and its partner districts (Appendix J).

Another possible explanation for this experience is the nature of *intention* with regard to informal learning and how it is influenced under different conditions. Eraut (2004) distinguishes between three levels of intention, between reactive or opportunistic learning that is near-spontaneous and deliberative learning that is more considered (see Table 28). From this perspective, *reactive learning* occurs in the middle of the action and, although it is intentional, there is little time to think. *Deliberative learning*, on the other hand, includes "both `deliberate' learning where there is a definite learning goal and time is set aside for acquiring new knowledge, and engagement in deliberative activities such as planning and problem solving, for which there is a clear work-based goal with learning as a probable by-product" (Eraut, 2004, p. 250; see also Tough, 1971). Because most of these latter activities are a normal part of working life, they are rarely regarded as learning activities, even though important learning often occurs. Perhaps the same

knowledge that was commonly and uncritically used in the day-to-day activities before the redesign was used afterward more intentionally, but equally uncritically.

Table 28. A *Typology of Informal Learning*

Time of focus	*Implicit learning*	*Reactive learning*	*Deliberative learning*
Past episode(s)	Implicit linkage of past memories with current experience	Brief near-spontaneous reflection on past episodes, events, incidents, experiences	Discussion and review of past actions, communications, events, experiences
Current experience	A selection from experience enters episodic memory	Noting facts, ideas, opinions, impressions; asking questions; observing effects of actions	Engagement in decision making, problem solving, planned informal learning
Future behavior	Unconscious expectations	Recognition of possible future learning opportunities	Planning learning opportunities; rehearsing for future events

Source: Eraut (2004)

Innovation, and corresponding behaviors, lived within the context of work in the realm of what was feasible, practical, and ultimately useful (pushing at the boundaries). This supports previous research that employees were more innovative when they anticipated that such behavior would benefit their work (Yuan & Woodman, 2010) and that in the higher education context, motivation to change the institutionalized curricular practices was intrinsic and came from the individual's interest in several issues, such as how students were taught and who participated in education, rather than a solely extrinsic motivation and short-term benefits of innovation on the institutional level (Hasanefendic et al., 2017).

The Organizational and Environmental Influences on Team Learning and Innovative Practice (*Research Question 4*)

The final major finding of this study is that organizational response to contextual pressures and opportunities served as a catalyst for the formation of the initial cross-boundary partnership and, over time, a means of continuous improvement as well. State context and organizational strategy catalyzed the team's formation, while outside funding from the Education Foundation helped to concretize it. Additionally, team leadership influenced nearly every aspect of the team's development and the implementation of its work. Two conclusions can be drawn from these findings. The first conclusion is that universities and school districts, as well as other knowledge-intensive public sector organizations, should consider the broader environmental factors that can facilitate or impede their efforts and should candidly assess their own organizational readiness for change.

In the context of this study, the confluence of several environmental factors contributed to the team's formation and set the conditions for learning. The first was regulatory—a series of impending changes to California's preparation and certification system for school and district administrators. The second factor was strategic, as both Redwood State and their partner districts had a strategic rationale for participation in the redesign as it aligned with each organization's broader, long-term goals. The third factor influencing the team's initiation was the role of the Education Foundation as a source of both financial and strategic resources. Taken together, these conditions helped incentivize the team's formation while concretizing its structure and guiding its development. This supports the findings of Hasanefendic et al. (2017) and others who assert that that innovation in higher education is a response to environmental pressures (Chatterton & Goddard, 2000), where universities are compelled to innovate within institutional structures and curricular programs (Davis & Jacobsen, 2014; Dee & Heineman, 2016; McClure, 2015) and where such innovation is mediated by the organization's internal

characteristics, including culture (Kezar & Eckel, 2002), values and norms (Merton et al., 2009), and structure and identity (Fumasoli et al., 2015).

This conclusion also supports the work of Teles (2008), who argues that foundations are not solely sources of financial resources, but "critical coordinating structures where information is gathered, lessons drawn and disseminated, and slack resources directed" (p. 21). Teles refers to foundations that "move beyond funding to provide coordination and advice" as "strategic coordinators" (p. 51). This was the case in this study's context as well. In addition to explicit financial resources, involvement with the Education Foundation provided increased national visibility, access to professional learning communities, mentor programs, technical assistance providers, and various other supports. In brief, both the university and the districts desired the types of change redesign could bring, but they also recognized they would face the same significant regulatory, structural, and financial limitations that have thwarted similar efforts in the past. Involvement in the University Curriculum Redesign Initiative (UCRI) set the stage for the redesign team to address those challenges holistically.

The second conclusion drawn from these findings is the pivotal role of team leadership. Redwood State University's department chair, Tony, served as Project Director, leading the team and serving as the primary liaison between the university and district partners as well as between the team and the Education Foundation. This role provided him the opportunity to create the conditions on the team to promote team learning and innovativeness while removing some institutional barriers to the team's work by aligning it to the organization's strategic goals. Team leadership's influences on team learning are well documented (Decuyper et al., 2010). This study supports previous claims regarding the importance of the direct supervisor for the creation of a work and social environment that encourages innovation and change (Damanpour & Schneider, 2009; Yuan & Woodman, 2010).

While the traditional constraints posed by institutional factors (i.e., power structures, values, norms, taken-for-granted attitudes, behaviors, and routines) that can inhibit innovation in the higher education context were present, Tony exemplified several of the individual characteristics consistent with an "institutional entrepreneur." Specifically, he leveraged his and the team's motivation to change, significant field experience, and strategic use of networks to disrupt the status quo and innovate within the institution despite being constrained by environmental and institutional factors (Waldron et al., 2015). Having a shared goal of "being the best" helped align the team's work to RSU's organizational strategy, and the belief that there were "no bad ideas" enhanced team psychological safety. Both aspects are important in understanding how groups develop through time, and which social conditions are related to increased engagement in team learning behavior.

Summary of Conclusions

In summary, several conclusions can be drawn from the research questions. First, these results indicate that high levels of engagement in TLBs and some moderate levels of engagement in TIWB (specifically the domain of idea realization) were experienced by the team as they engaged in a series of complex tasks and programmatic milestones related to the redesign process.

Second, the team remained relatively stable over the course of implementation, and this stability likely led to the exploration of new opportunities to spread that learning.

Third, learning, in the context of this redesign team, was indistinguishable from their daily work, and evidence of it can be most clearly seen in the artifacts they produced through their learning rather than through reflection upon the learning itself.

Fourth, innovation, and corresponding behaviors, lived within the context of work in the realm of what was feasible, practical, and ultimately useful (pushing at the boundaries).

Fifth, the confluence of several environmental factors (both internal and external) contributed to the team's formation and set the conditions for learning.

Finally, leadership was pivotal in the creation of a work and social environment that encouraged team learning and innovativeness while removing some institutional barriers to the team's work. Taken together, these conclusions inform several recommendations for both practice and policy. These recommendations will be explored in the following section.

Recommendations for Practice and Policy

Directly linked to the study's conclusions, and based on the key insights summarized above, what follows are recommendations grounded in theory and research that universities and public school districts can consider as they seek to improve the quality of school leadership preparation. It should be noted that some of these recommendations may be difficult to adopt depending on the specific organizational conditions and the state's policy environment.

Recommendation 1: Identify a Team Leader with Positional and Reputational Authority

The direct involvement of senior leadership is essential for aligning this work to the broader strategic organizational goals and for creating the conditions that encourage learning, experimentation, and measured risk taking. Universities and districts should identify a team leader who has several attributes. First is sufficient positional authority to help create conditions conducive to the team's learning. Specifically, this means the removal or mitigation of bureaucratic structural barriers, the allocation of resources (including staff release time), and the alignment of the team's work to that of the broader organization's goals. At the university level, that means the engagement of the department chair or similar position empowered to lead (or at least strongly influence) the

long-range development of the department within the context of the university vision, mission, and goals, and the daily progress toward achieving teaching, research, and service goals as set out in the department's plan. From the district perspective, it means the engagement of the cabinet-level positions within the central office who have the ear of the superintendent and can directly or indirectly influence relevant departments, such as curriculum and instruction, professional development, and talent development. The selection of such leaders helps support the team's activities as central to the organizations' *actual work*, aligned to its priorities and long-range planning, rather than as a "side project" or an "add on," and reduces the likelihood that the team's efforts would be siloed.

The second necessary attribute of the team leader is that of a personal reputation. The reputation of the team's leader needs to be one based on the setting of ambitious goals, excellence in execution, and shared leadership. Previous success builds credibility, helping to attract partners to the work, and builds their confidence that the work can actually be successfully implemented. Further, the leader must recognize that failure, or at least sub-optimal outcomes, is a possibility. As such, rather than taking a dictatorial style or limiting activities to those of compliance, the team leader must trust the expertise and capabilities of the individual team members, balancing high expectations and accountability while empowering the team to take risks. The selection of such a leader provides "cover" to the team and increases ownership and psychological safety.

Recommendation 2: Select a Team Based on Existing Relationships and Shared Commitment to Change, Even if Approaches Differ

Selecting the right organizations to partner with and the right individuals within each organization to serve in key roles is essential. Universities and districts should develop criteria for selecting the team based on each organization's long-term strategic goals and desired team structure. The redesign process involves a series of complex tasks, coordinated over several phases, and requires an interrogation and reconsideration of

long-held beliefs and ways of working to implement. Universities and districts should engage with partners who share their vision (i.e., better prepared school leaders who are ready to lead on Day 1), and with whom they have existing, effective relationships, and the buy-in of senior leadership. There are at least two reasons for this. First, given the nature of the work, precious time and relationship capital could be squandered if organizations' senior leaders do not agree on the mutual need for change. Organizations will likely differ in what approaches and concrete actions are necessary for accomplishing partnership goals. This is to be expected. However, disagreement on the fundamental need for change could doom meaningful redesign efforts. Second, organizations with an existing relationship are more likely to trust the intention and capability of their partners. As such, it is more likely that organizational leadership will prioritize the work and support it through the provision of staff release time and the sharing of scarce financial resources. This issue of staffing (i.e., who serves on the team from each organization) is of particular importance. Whether university-based faculty or district-based senior administrators, team members should be deeply committed to the prospect of change (informed by evidence and in partnership), the expertise and positional authority to advocate for the effort within their organization and to operationalize redesign ideas, and commitment and capacity to stay involved throughout the redesign process.

Recommendation 3: Start with the End in Mind and Use Evidence to Challenge Assumptions

A significant amount of time should be dedicated to the team members developing a shared vision and common understanding of what needs to change and agreeing on a unified approach to improvement. Negotiating the diverse and often contradictory views between research and practice makes successful university-district partnership relatively rare, despite general agreement about its utility for improvement. Universities planning on attempting a similar redesign should not rely solely, or even primarily, on their own

opinions of what needs to change. Seeking external feedback from stakeholders, and the gathering of evidence to demonstrate quality (or effectiveness), can encourage the programs and their partners to come to a shared understanding of the program's strengths and opportunities for improvement. Additionally, co-creating artifacts such as a logic model (or theory of change or action) and leader standards make implicit, taken-for-granted expectations and beliefs explicit and puts them in context. Constructing shared leader standards allows partners to agree on the profile of an effective leader, while the logic model development process shows the role each of the partners plays in that leader's development, support, and evaluation. Both activities help facilitate the development of an interdependent rather than a transactional relationship between the partners.

Recommendation 4: Be Opportunistic by Aligning Activities to Organizational and Environmental Forces

The national and state policy context greatly influences the conditions for university program improvement and may support or suppress redesign efforts. These influences include university program accreditation, principal licensure, leader standards, and evaluation criteria. Universities and districts should first assess their own state policy environment for both potential opportunities and constraints to better understand the "boundaries" within which they believe they can function. Since any potential improvements would need to align with statutory expectations and state standards, universities and districts should be opportunistic and pursue bolder action on occasions where the regulatory environment is favorable. When that environment is less prescriptive or silent on specific details, universities and districts may still be able to push at these boundaries, making changes that reflect authentic engagement between the partners even if changes are ultimately more modest.

As recommended in other studies (Gates et al., 2020), in order to create conditions for evidence-based practice improvement, state policymakers should consider (a) creating

incentives and offering resources and professional development rather than mandates; and (b) in the cases where mandates are desirable, offering both support and a phased non-consequential pilot or "trial period" to precede any mandated changes. Incentives and resources can offer advantages over mandates by acknowledging that, in many cases, the universities themselves know which changes are best in their local context and allowing them to determine whether a new policy or practice is feasible. Further, if the university is considered successful in the change (i.e., improved quality, increased registration, higher satisfaction ratings, etc.), they may serve as examples for other universities across the state. As states have several levers to promote program improvement at their disposal, some combination of mandates, incentives, and supports should be considered based on their local context.

Recommendations for Future Team Learning Research

While it is hoped that this study provides important insights for practitioners and policymakers, the contextual specificity of the study also sheds light on some opportunities for further research.

Recommendation 1: In Order to Determine Which Results Were Caused by Which Team Characteristics, Future Research Should Use Samples of Teams from Different Domains

Future research on team learning should use samples with teams from different domains that could help to identify domain-specific relationships and domain-specific characteristics of team learning. This recommendation is based on the composition of the team and the specificity of results. Because of the selection criteria for the participant sample, a cross-boundary team working on complex and knowledge-intensive tasks in an attempt to innovate, the results reported herein may have application to similar teams: KIPSOs and select university/district partnerships. While past research has shown how

team structure can influence learning (Decuyper et al., 2010) and innovation, the special characteristics of the team under study could differ from those of teams in other areas and organizational types.

Relatedly, the role of the Education Foundation in influencing the team's formation, cohesion, and initial development through the design of the University Curricular Redesign Initiative (UCRI) may also limit the applicability of results. While foundation funding to improve educational outcomes is not a new phenomenon (Quinn et al., 2014), funding for this specific type of effort is relatively infrequent. Sampling can help to identify patterns related to different team characteristics, such as team composition, funding, or time.

Recommendation 2: Future Research Should Study the Learning and Performance of Multiple Teams over an Extended Period

Future research would benefit from gathering longitudinal data using mixed methods and multiple sources in order to grasp the complexity of the dynamics between different influencing processes within team functioning. This recommendation is based on the duration of the study's observation. At the time of this study, the team had been together over 18 months in pursuit of their redesign and had achieved several milestones they identified as critical incidents in Chapter IV. While the requirement to complete tasks over a relatively short time may seem adequate for team learning and innovation development, and team characteristics remained relatively stable over that period, it is unclear how the team would have continued to develop and how learning would have been influenced over a longer period. Research suggests that team learning behaviors are higher in the latter phases of group development, because these latter phases are also characterized by higher psychological safety and group potency, which research has shown to be important predictors for team learning behaviors (Raes et al., 2014). As team learning increases over time, longitudinal studies are needed to examine contextual change and team development in different domains. For example, further focus of

longitudinal studies could be on the different levels of team learning (team and organizational level), and a larger sample size featuring multiple teams would allow analysis within and between-group differences (Widmann et al., 2019).

Revisiting Assumptions

I had four key assumptions, noted in Chapter I, that I held as I began my research. I will present and discuss each of these assumptions in light of the study findings and analysis. My first assumption was a belief that strategic grantmaking and collaborative learning can catalyze innovation and sustainable, organizational transformation. Specifically, I held the belief that philanthropic funding could incentivize organizations to make, or at least attempt, organizational changes in response to the funding opportunity and that the lessons learned in the pursuit could make those changes lasting ones. My study provided partial support for this view. As discussed in Chapter V, while the funding from the Education Foundation helped provide an incentive for the members of the redesign team to participate in UCRI, it was not the most significant facilitator. It seemed that contextual pressures and opportunities also spurred the team's member organizations' desire to engage in this work. Where the Foundation had a stronger influence on the team's activities was in how it structured the initiative: encouraging the engagement of multiple districts, pairing with a mentor program, and artifact or milestone development.

My second assumption was that any changes that do not result in an appreciable benefit to the organization, or if benefits are achieved but are too expensive or disruptive to the culture, would not be sustained. My study provided strong support for this view. Because the changes to the program (i.e., content, curriculum, clinical, etc.) and ways of working (newly interdependent partnerships with districts) allowed RSU to respond to both contextual pressures and opportunities as well as further the university's strategic

goals, those changes have a greater likelihood of being sustained. Further, the lessons learned and practice changes that resulted from RSU's redesign experience have created the opportunity for them to serve as models for other universities seeking to make similar changes. This, too, makes it more likely that many of the changes they made will be sustained; however, it is too early to know for certain.

My third assumption was that despite being hierarchical environments that are resistant to change, university innovations do in fact occur and the learning antecedents of those innovations and behavioral changes that result are observable can be explicitly identified. My study provided partial support for this view as well. As mentioned previously, the only innovative work behavior consistently described was that of idea realization—prototyping an innovation, experimenting, and refining it based on feedback. However, incidental learning and practice changes that occurred were observed through the implementation of work tasks and concretized in the production of work products.

My fourth and final assumption described in Chapter I was that I would have full access to the subject organizations and relevant documentation and that subjects would be candid about their experiences and behaviors. My study provided strong support for this view. At the onset of the study, I was provided a considerable number of internal documents for review. These documents included "before and after" versions of course descriptions and syllabi, candidate admissions and assessment protocols, leader standards, and clinical practices, among others. Additionally, I was provided the opportunity to directly observe the team's work and to conduct several, in-depth interviews, as outlined previously. While I cannot claim to have removed all the power imbalances inherent in both qualitative research in general and the funder/grantee relationship in particular, the candor with which the participants described their experience gives me confidence that they were mitigated to the extent possible.

Reflections on the Research

I approached this research with the belief that nonprofit organizations needed to innovate in order to remain viable and continue to deliver their services effectively in a time of diminishing resources. As a philanthropic practitioner responsible for making difficult choices about which organizations to fund and which to deny, I have a strong interest in identifying the most high-leverage strategies for strengthening the nonprofit sector overall. The concept of innovative work behavior and the potential influence of team learning on those innovative practices appealed to me both as a professional and budding scholar. My goal in selecting this topic for research was to find out which team learning behaviors (TLBs) and team innovative work behaviors (TIWBs) are exhibited by universities and public school districts in order to understand how these complex organizations can leverage learning toward practice improvement. I have gained many perspectives and deeper insight into these areas. As I wrap up this study and take time to reflect on my own experience of the inquiry process, I am left feeling that there is so much more to do and to learn about how teams learn, collaborate, and innovate. While this dissertation is but one small step in a much longer journey, it is also an achievement that has forever changed my life.

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Appendix A

Pre-Interview Questionnaire

This questionnaire is part of a dissertation on ethics in financial institutions. The information you provide will remain completely confidential. If you do not wish to respond to a question, please skip it. The survey has four sections: (1) general information, (2) professional information, (3) team learning behaviors, and (4) innovative work behavior.

1. General Information

What is your gender? (*please circle one*)	Male Female Gender non-binary
What is your age? (*please check one*)	____ 25-30 years ____ 31-35 years ____ 36-40 years ____ 41-45 years ____ 46-50 years ____ 51-55 years ____ 56-60 years ____ above 60
What is your nationality?	
What is your ethnicity? (*please select all that apply*)	American Indian or Alaskan Native Asian or Pacific Islander Black or African American Hispanic or Latino White / Caucasian Bi-racial Prefer not to answer Other (please specify)
What is the highest level of education you have completed? (*please circle one*)	Bachelors Masters Doctorate J.D. MBA Other (please specify)

2. Professional Information

Current employer and title of your current Position?	
Please provide a brief overview of your current job responsibilities and relevant past job experiences.	

Please provide a brief overview of your role and responsibilities on the team.	

3. Team Learning Behaviors

In order to help prepare you for our interview, I'd like to provide you with some of the concepts I'm interested in discussing. One of the main ideas is team learning and the accompanying team learning behaviors (TLBs). There are a number of ways of describing what teams do when they learn. Kasl et al. (1997) define team learning as "a process through which a group creates knowledge for its members, itself as a system, and for others." Decuyper et al. (2010) present an integrative team learning model that organizes and combines team learning processes, outputs, inputs into a coherent whole. In alignment with this model, this study conceptualizes team learning behaviors (TLB) as what people *do* when they learn. Some examples of team learning behaviors are:

- *Knowledge sharing*: describes all those behaviors involved in sharing information, experiences, and knowledge with other team members, such as communication or exchange of materials;
- *Team reflexivity*: describes team members' interaction or discussion in rethinking strategies, methods, tasks, and processes to recombine their knowledge and to develop a clear vision of goals and methods for accomplishing the team's task.
- *Boundary spanning*: refers to all behaviors that relate to gathering information, knowledge, and experience from experts or colleagues who are outside the team (i.e. not team members);
- *Co-construction*: the mutual process of developing shared knowledge and building shared meaning by refining, building on, or modifying each other's existing patterns of thought, language and action;
- *Constructive conflict*: is a process of negotiation or dialogue that uncovers diversity in identity, opinion, and perspective within the team;
- *Team activity*: the process of team members working together, mobilising physical and psychological means required for goal attainment. Learning by doing; and
- *Storage* and *retrieval*: support persistence of team learning by enabling the team to use stored material as starting points for future tasks;

4. Innovative Work Behavior

Another of the main ideas I'm interested in exploring is innovation development. Specifically, innovative work behavior (IWB) which is defined as all physical and cognitive work activities carried out by employees in their work context, either solitarily or in a social setting, in order to accomplish a set of tasks that are required to achieve the goal of innovation development. Four dimensions can be derived from research that is crucial for innovation development (Widmann et al., 2016; Messmann & Mulder, 2012):

- *Opportunity exploration* entails activities to scan the environment for opportunities to solve problems and improve products, services, processes or strategies;
- *Idea generation* includes activities that can lead to new ideas about how problems can be solved, or something novel can be developed;
- *Idea promotion* entails activities to win and organize supporters for an idea by explaining the benefits of the idea to others, discussing the required resources with colleagues and seeking permission; and
- *Idea realization* contains activities to implement an idea by developing the innovation, incorporating it into regular work processes and checking and modifying the output.

Keeping these descriptions in mind, prior to our interview, I'd like to ask you to think back on your team's interactions over the past 6-12 months. I am interested in hearing 2-3 specific incidents that stand out in your mind where the team exhibited some of the characteristics described above. These could be examples of when you felt the team learned or when it might have missed an opportunity to learn. These could also include examples when novel ideas or approaches were explored leading to changes to work processes or failing to do so. Think about when and where the interaction took place, who was involved (you can use roles and job designations rather than specific identities), and why this interaction fit the above descriptions.

When we meet, I will ask you to describe the interaction for me. I will then ask you some follow up questions around these situations to gain more detail around the actions taken. For your benefit, I've created a worksheet that you can use to write your comments down on 2 – 3 examples. I strongly encourage you to take advantage of this worksheet. This way we can maximize the time we'll have available.

INCIDENT I:

Example (positive or negative):	
Situation: What was this interaction about? Describe the context within which the incident occurred? Where did the interaction take place?	
Task: Describe your responsibility in that situation. What were you trying to achieve?	
Action: Describe what you did. How you completed the task or endeavored to meet the challenge. Focus first on what you did, rather than what your team, boss, or coworker did. Who else was involved?	

Result: Explain the outcomes or results generated by the action taken. It may be helpful to emphasize what you accomplished, or what you learned.	
Why does this incident stand out for you? What (if anything) do you think influenced the outcome?	

INCIDENT II:

Example (positive or negative):	
Situation: What was this interaction about? Describe the context within which the incident occurred? Where did the interaction take place?	
Task: Describe your responsibility in that situation. What were you trying to achieve?	
Action: Describe what you did. How you completed the task or endeavored to meet the challenge. Focus first on what you did, rather than what your team, boss, or coworker did. Who else was involved?	
Result: Explain the outcomes or results generated by the action taken. It may be helpful to emphasize what you accomplished, or what you learned.	
Why does this incident stand out for you? What (if anything) do you think influenced the outcome?	

INCIDENT III:

Example (positive or negative):	
Situation: What was this interaction about? Describe the context within which the incident occurred? Where did the interaction take place?	
Task: Describe your responsibility in that situation. What were you trying to achieve?	
Action: Describe what you did. How you completed the task or endeavored to meet the challenge. Focus first on what you did, rather than what your team, boss, or coworker did. Who else was involved?	
Result: Explain the outcomes or results generated by the action taken. It may be helpful to emphasize what you accomplished, or what you learned.	
Why does this incident stand out for you? What (if anything) do you think influenced the outcome?	

Appendix B

Group Interview Protocol

PART I

Introductory Remarks (~5 mins) I would like to thank you all for agreeing to speak with me as a team. As you may know, I am conducting research for my doctoral dissertation on team learning behaviors (TLB) and innovative work behavior (IWB). I am specifically interested in what you've learned and experienced through the process of Redwood State University's redesign process and to what you attribute that learning. I will start by asking you about the team's purpose and composition. From there I will ask you to identify what you consider the biggest successes and challenges, what you've learned and what (if anything) you would do differently if you had the opportunity to engage in a similar project in the future.

I want to reiterate at the outset that your responses and comments made during this group interview are for research purposes only. They will be completely confidential, so I would like you to be as open as possible. There will be no repercussions to you for your participation, and I am neither obligated nor plan to report back my individual findings to the Education Foundation or anyone in your organization's leadership. I plan to take about 60 minutes for this group interview. Do you have any questions or concerns so far?

I will take notes as we speak, but I would like to record this group interview as well so I have something to refer back to for my research. Before I do this, I would first like your agreement to do so. I will create a transcript of the interview that will be used strictly for research purposes. If you like, I will share a copy of the transcript with each of you. The soft copy of the transcript will be stored on my personal computer and backed up to a secure cloud service. There will be no hard copies. Following the transcription of the recording, it will be deleted.

I see this group interview as a conversation and not a formal question and answer session. If you have not already done so I would ask you to sign the release form for this group interview. This is part of the formal research process required by the university. Just to reiterate, it states that the information from this group interview will be kept confidential, your participation is voluntary, and you may stop at any time. Do you have any questions?

Review of Selected Background Group interview Questions:

Questions	Potential Probes
1. Can you tell me a little bit about the function of your team?	- How long has the team been in existence? - How would you describe the team's main goal? - How large is the team? - Who joined and/or dropped off since the team formed? - What (if any) major turning points occurred over the life of the team.
2. What is your role on the team? (*To each)*	- How did you get involved with this team? - What are the other functions on the team? - How do the different roles on the team get assigned or designed?
3. Why did you want to be involved with this project and/or this team? (*To each)*	- What has been your level of interaction with the rest of the team? - What do you see as your major role on the team?
4. In what ways has your work changed?	- What makes that change significant? - How does this compare to your previous way of working?
5. What would you consider to be the team's greatest success (s)?	- How did this success come to be? - What did you learn?
6. What would you consider to be the team's most significant challenge (s)?	- Did you overcome these challenges? - If so, how? - What did you learn? - When and how did you address any conflicts that arose? - How did you settle disputes?
7. What did the team learn?	- Was there any unexpected learning or opportunities you experienced? - How did you learn it? - Did you consult with others outside the team?
8. If you had it to do over, what might you have done differently?	- What did you learn from that experience? - What recommendations would you make to others attempting something similar?

Appendix C

Critical Incident Protocol

PART I

Introductory Remarks (~5 mins) Thanks for agreeing to speak with me. I am conducting research for my doctoral dissertation on team learning behaviors (TLB) and innovative work behavior (IWB). I am specifically interested in what you've learned through the process of your program's redesign and how. As well as what innovative behaviors you experienced or observed. I will start by asking you about the team's purpose and composition. From there I will ask you to describe specific incidents that stand out in your mind with respect to TLB and IWB. We will then discuss those incidents and what you experienced that influenced learning in the team.

I want to reiterate at the outset that your responses and comments made during this interview are for research purposes only. They will be completely confidential, so I would like you to be as open as possible. There will be no repercussions to you for your participation, and I am neither obligated nor plan to report back my individual findings to the Education Foundation or your organization's leadership. You should understand that this is not about your performance as a member of the team and will in no way impact your grant. I plan to take about 60 minutes for this interview. Do you have any questions or concerns so far?

I will take notes as we speak, but I would like to record this interview as well so I have something to refer back to for my research. Before I do this, I would first like your agreement to do so. I will create a transcript of the interview that will be used strictly for research purposes. If you want, I will share with you a copy of the transcript. The soft copy of the transcript will be stored on my personal computer and backed up to a secure cloud service. There will be no hard copies. Following the transcription of the recording, it will be deleted.

I see this interview as a conversation and not a formal question and answer session. If you have not already done so I would ask you to sign the release form for this interview. This is part of the formal research process required by the university. Just to reiterate, it states that the information from this interview will be kept confidential, your participation is voluntary, and you may stop at any time. Do you have any questions?

Hopefully, you had some time to review and complete the pre-interview materials I sent you. This included filling out the background questionnaire on the team and writing down 2 or 3 incidents of where you experienced team learning occurring or innovative behaviors in the team over the past 6 to 12 months. Before we start, I want to review with you how I am defining some of the terms I will use for this research study. By "team learning behaviors," I mean the interaction between team members that circularly generates change or improvement, primarily at the level of the team, and secondary at the level of individuals or the organization. In this study, the focus will be on three basic

team learning behaviors: sharing, co-construction, and constructive conflict. These processes are considered "basic team learning processes because they describe what happens when teams learn. By "innovative work behaviors," I mean all physical and cognitive work activities carried out by employees in their work context, either solitarily or in a social setting, to accomplish a set of tasks that are required to achieve the goal of innovation development. These can include the development, promotion, and implementation of ideas to improve practice. Do you have any questions?

The first couple of questions cover who you are, what your team does, and what your role is on the team. They are a review of some of the questions included in the background questionnaire. I then will ask you about the 2 or 3 incidents you've identified for your team in the last 6 to 12 months. As you describe these incidents, I will ask you follow up questions on what your actions were during these incidents and how they may have been influenced by operating in an cross-boundary team within your university (or district) context.

Critical Incident Questions (~45 mins)
Determining Specific Critical Incidents and Learning Process: (~5 mins):

Question
5. Now I want you to think back on your team's interaction over the past 6 – 12 months. I am interested in hearing 2 - 3 specific incidents that stand out in your mind where the team exhibited some of the characteristics and behaviors I described. These could be examples of when you felt the team learned well or when it might have missed an opportunity to learn. These could also be examples of when you felt that the team introduced new ideas that may or may not have been implemented. Think about when and where the interaction took place, who was involved (you can use roles and job descriptions rather than specific identities), and why this interaction fit the above descriptions.   Utilize STAR (Situation, Task, Action Result)   Situation: Describe the context within which you performed a job or faced a challenge at work. Task: Next, describe your responsibility in that situation.   Action: You then describe how you completed the task or endeavored to meet the challenge. Focus on what you did, rather than what your team, boss, or coworker did.   Result: Finally, explain the outcomes or results generated by the action taken. It may be helpful to emphasize what you accomplished, or what you learned.

6. Probes for clarity on the results:
Can you tell me a little about the incident and what the end result was? Did it include:

- New ideas generated or explored?
- Performance improvements?
- New approaches to work?
- New ways of thinking?
- New ways of managing?
- New work processes or procedures?
- New supporters inside or outside of the organization?
- Higher quality than what could have been produced alone?
- New ways that the group members related better with each other when working?

(*Note if positive or negative inciden*t)

Probes for clarity on specific behaviors:
I will now ask you about your actions during these incidents. When I am asking you these questions, I will also be looking for how the team's composition or environment may have either helped or hindered your or the team's actions during the incident

PART II
Potential follow up probes/questions for each incident (~15 mins for each incident):

Potential Questions	Follow Up Probes
7. What made the team more open to new ways of thinking?	- What was helping you or impeding you to do this? - How did the team's structure or actions impact your performance?
8. What did you do to create an environment where the team members could express their thoughts or propose new ideas?	- How (if at all) did you identify needs or opportunities for improvement in your work? - Were new ideas generated or explored? If so, how did you decide which ideas to pursue? - What was helping you or impeding you to do this? - How did the team's structure or actions impact your performance?

9. How did you try to recognize team members for their accomplishments?	▪ What was helping you or impeding you to do this? ▪ How did the team's structure or actions impact your performance?
10. How were you able to balance getting tasks accomplished and building relationships amongst the team members?	▪ What was helping you or impeding you to do this? ▪ How did the team's structure or actions impact your performance?
11. How did the group spend time gaining clarity around the team's purpose and structure?	▪ What was helping you or impeding you to do this? ▪ How did the team's structure or actions impact your performance? ▪ How did the team grapple with different points of view?
12. How has the team developed its beliefs, values and guiding principles?	▪ What was helping you or impeding you to do this? ▪ How did the team's structure or actions impact your performance?
13. Is there anything I may have left out that you think is important around this incident?	▪ Follow up probes around anything not covered in the questions above.

Interview Close Remarks (2 mins):

Thank you very much for your participation in this research. Once again, your answers are strictly confidential. Once I review the recording and the transcripts, I may need to contact you if I have any questions or need clarification on any of your comments. Is that OK? If you think of anything else or have any questions, please feel free to contact me. Thank you.

Appendix D

Observational Protocol

Date: _____ Time: _____ Length of activity: _____ minutes Site: _____ Participants: _____	
Research Question:	
Descriptive Notes	*Reflective Notes*
Physical setting: visual layout [square box]	**[Reflective comments: questions to self, observations of nonverbal behavior, my interpretations]**
Description of participants Description of activities Description of individuals engaged in activity Sequence of activity over time Interactions Unplanned events Participants comments: expressed in quotes	[Reflective comments: questions to self, observations of nonverbal behavior, my interpretations]
[The researcher's observation of what seems to be occurring]	

Appendix E

Participants' Rights

Principal Investigator: Nicholas L. Pelzer
Research Title: Team Learning Behaviors and Team Innovative Work Behavior in cross-
boundary Public Sector Work Teams
IRB Protocol Number: IRB ID: 20-057

I have fully read and discussed the research description with the researcher. I have had
the
opportunity to ask questions about the purposes and procedures regarding this study.

- My participation in research is strictly voluntary. I may refuse to participate or
  withdraw from participation at any time without jeopardy to future medical care,
  employment, student status or other entitlements.

- The researcher may withdraw me from the research at her professional discretion.

- If during the course of the study, significant new information becomes available
  which may relate to my willingness to continue to participate, the principal
  investigator will provide this information to me.

- Any information derived from this study that personally identifies me will not be
  voluntarily released or disclosed without my separate consent, except as
  specifically required by law.

- If at any time I have any questions regarding the research or my participation, I
  can contact the principal investigator, who will answer my questions. The
  investigator's phone number is (540) 435-4226 and her email address is
  nlp2133@tc.columbia.edu.

- If at any time I have comments or concerns regarding the conduct of the research
  or questions about my rights as a research subject, I should contact the Teachers
  College, Columbia University Institutional Review Board (IRB). The phone
  number for the IRB is (212) 678-4105. Or, I can write to the IRB at Teachers
  College, Columbia University, 525 W. 120th Street, New York, NY 10027,
  Box 151.

- I should receive a copy of the research description and this Participant's Rights
  document.

- Audio-taping is part of this research. Only the principal investigator and members
  of the research team will see the transcription and/or recorded materials.

Appendix F

Informed Consent

Principal Investigator: Nicholas L. Pelzer

Research Title: Team Learning Behaviors and Team Innovative Work Behavior in cross-boundary Public Sector Work Teams

IRB Protocol Number: IRB ID: 20-057

Description of the Research:

You are invited to contribute to a research study conducted by Nicholas L. Pelzer, a doctoral candidate in the field of adult learning and leadership at Teachers College, Columbia University. The purpose of this case study on innovative work behavior (IWB) in higher education is to learn more about which team learning behaviors (TLBs) and team innovative work behaviors (TIWBs) are exhibited by cross-boundary knowledge-intensive public sector work teams. To accomplish this purpose, I will document the process, describe the perceived learning of, and draw lessons from the experiences of a university-based cross-boundary work team attempting an innovative redesign of a principal preparation program. You are asked to participate, if possible, through a face-to-face interview with the researcher at a time and location that provides privacy and is agreeable to you and the researcher. In case of any constraints, the researcher can also conduct the interview via Skype, Zoom, or a similar service. With your permission, the interview will be audio-recorded, which will enable the researcher to analyze the data. However, your name will be protected and will be given a hypothetical name/number. During the analysis phase of the dissertation, the audio recording will be stored, along with all other study data, in a secure place that is only accessible to the researcher. Once the analyses of the data are complete, the researcher will delete all audio recordings.

Risks and Benefits:

Your participation in the study is strictly voluntary. There is the possibility that in talking about the conditions you experience in your individual and teamwork, you might feel uncomfortable. What you are willing to share is entirely up to you. You may choose not to answer any individual questions. You may withdraw from your participation at any point in the process without any penalty. There is no direct benefit from participation in this research study. In some cases, the participants might find reflecting on their experience beneficial.

Payments:

There will be no payment for your participation. However, if you are interested, you will receive a summary of the findings once the research study has been fully completed.

Data Storage to Protect Confidentiality:

The protection of your privacy is of the highest priority to the researcher as part of this research study. Therefore, in order to ensure your confidentiality, the researcher will code your identity by eliminating identifiers from the data as soon as possible and substituting with codes. Code lists and data files will be kept in separate secure locations. Next, the

researcher will use accepted methods to protect against indirect identification, such as aggregate reporting or pseudonyms. Moreover, the researcher will password-protect the folder on her personal computer, in which all data from the research study will be secured.

Time Involvement:
Your participation will take approximately 145 minutes, which consist of the following Activities:

- Completing an informed consent form (5 minutes).
- Completing a pre-interview questionnaire (20 minutes)
- Participating in a group interview (60 minutes)
- Participating in a face-to-face interview (60 minutes)

In some cases, the researcher might reach out after the interview and ask clarifying questions.

How Results will be used:
The researcher will use the findings in partial completion for her dissertation as part of the doctoral program in the field of adult learning and leadership at Teachers College, Columbia University. The results might also be used for publication in journals or articles or other educational purposes.

Confirming consent:
I confirm that I understand the terms and conditions outlined above, the potential risk(s) and benefit(s) of my voluntary participation and that I will not be provided compensation for my time and participation. I understand that I may contact the principal investigator(s) or sponsoring faculty with any questions that I may have. I confirm that I may discontinue participation at any time.

	YES, I confirm I understand the statement above and wish to proceed with participation in the survey.
	NO, I do not understand the statement above and do not wish to proceed with participation in the survey.

Appendix G

Email/Phone Correspondence

Dear Colleague,

As you may be aware, I am currently a doctoral candidate in the Adult Learning and Leadership Ed.D. program at Teachers College, Columbia University. The purpose of this case study on innovative work behavior (IWB) in higher education is to learn more about which team learning behaviors (TLBs) and team innovative work behaviors (TIWBs) are exhibited by cross-boundary knowledge-intensive public sector work teams. To accomplish this purpose, I hope to document the process, describe the perceived learning of, and draw lessons from the Redwood State University team's experiences attempting an innovative redesign of its principal preparation program.

Your participation will take approximately 145 minutes, which consist of the following Activities:

- Completing an informed consent form (5 minutes).
- Completing a pre-interview questionnaire (20 minutes)
- Participating in a group interview (60 minutes)
- Participating in a face-to-face interview (60 minutes)

In some cases, the researcher might reach out after the interview and ask clarifying questions. Those who participate will be provided with a summary of the research findings. The highest standards of confidentiality will be maintained. If you would be willing to participate, please reply to this email and provide your name, phone number, and preferred e-mail address so that I can follow up with you with additional details. If you would prefer not to participate, please reply to this email with your declination. If you have any further questions you'd like addressed before deciding, please feel free to contact me at your convenience. I would be more than happy to discuss this work further. Thank you in advance for your consideration.

Regards,

Nicholas L. Pelzer
Doctoral Candidate, Adult Learning & Leadership
Teachers College, Columbia University
email: nlp2133@tc.columbia.edu
Phone: (540) 435-4226

Appendix H

Definitions and Indicators of TLB, TLC, and IWB

Team Learning Behaviors		
Dimension	**Definition**	**Indicator**
constructive conflict	A conflict or an elaborated discussion that stems from diversity and open communication and leads to further communication and some kind of temporary agreement (Van den Bossche, 2006).	- Negotiating diverse or even contradictory meanings and by striving toward an agreement or compromise beyond team members' comfort zone. - Seeking out views that might be challenging - Recognize that differences can be valuable for learning
team reflexivity	While engaging in team reflexivity, teams build shared cognition about the team goals, about the ways to reach them, and about the process of working towards their goals (Decuyper et al., 2010). Team reflexivity can be seen as a process of double-loop learning within the team (Agyris, 1977).	- Discussion about strategies, methods, tasks, processes, etc. to get a clear vision about their goals, methods and the current situation - The team often reviews its objectives - The team regularly considers whether work performed meets project objectives
boundary spanning	Taking initiative to cross its borders, that is, sharing and asking for information and feedback with/from other individuals or units outside of the team (Kasl et al., 1997)	- Asking for help - Actively seek someone's opinion - Sharing and asking for information and feedback with/from other individuals or units outside of the team
team activity	The process of team members working together, mobilizing physical and psychological means required for goal attainment. Learning by doing. (Arrow et al., 2000)	- Working toward the attainment of team goals. - The team tests new working methods - Routines that enable the team to accomplish their tasks more efficiently.

Team Learning Conditions		
Dimension	**Definition**	**Indicator**
team leadership	Team leadership is then defined in terms of the conditions or functions that need to be present in a team, in order to be learning and working effectively. Drath et al. (2008) define leadership in terms of three basic functions: direction (vision), alignment (organization and coordination) and commitment (engagement towards vision)	- Supports and advocates for the team's activities. - Coaches team members and helps to resolve problems. - Sets team norms and increases psychological safety. - Empowers others on the team.
psychological safety	A shared belief that the team is safe for interpersonal risk-taking (...) and a sense of confidence that the team will not embarrass, reject, or punish someone for speaking up (Edmondson, 1999).	- Climate of openness - Knowing and identifying with team members
organizational strategy	Influences of the organization or the environment on learning including organizational culture, reward system, and viewing local responsiveness elements as key resources (Decuyper et al., 2010).	- Organizational supports or constraints - Alignment with stated organizational goals - Responses to policy environment
systems thinking	The capability of team members to think in terms of interdependent systems [and] to understand how their team is a system that is interdependently connected to actions of all other team members, other stakeholders in the organization, customers, competitors, the environment, etc. (Senge, 1990b; Sterman, 1994; Vennix, 1996).	- Understand how decisions today impact future scenarios - Understand the interdependence of the team

Innovative Work Behavior		
Dimension	**Definition**	**Indicator**
Idea realization	Activities to implement the idea [including] the development of the innovation, making it part of regular work processes and testing and modifying the outcome (De Jong and Den Hartog 2010; Messmann and Mulder, 2012).	- Introducing colleagues to the application of a developed solution. - Testing evolving solutions for shortcomings when putting ideas into practice. - Analyzing evolving solutions on unwanted effects when putting ideas into practice.

Appendix I

Redwood State University Logic Model
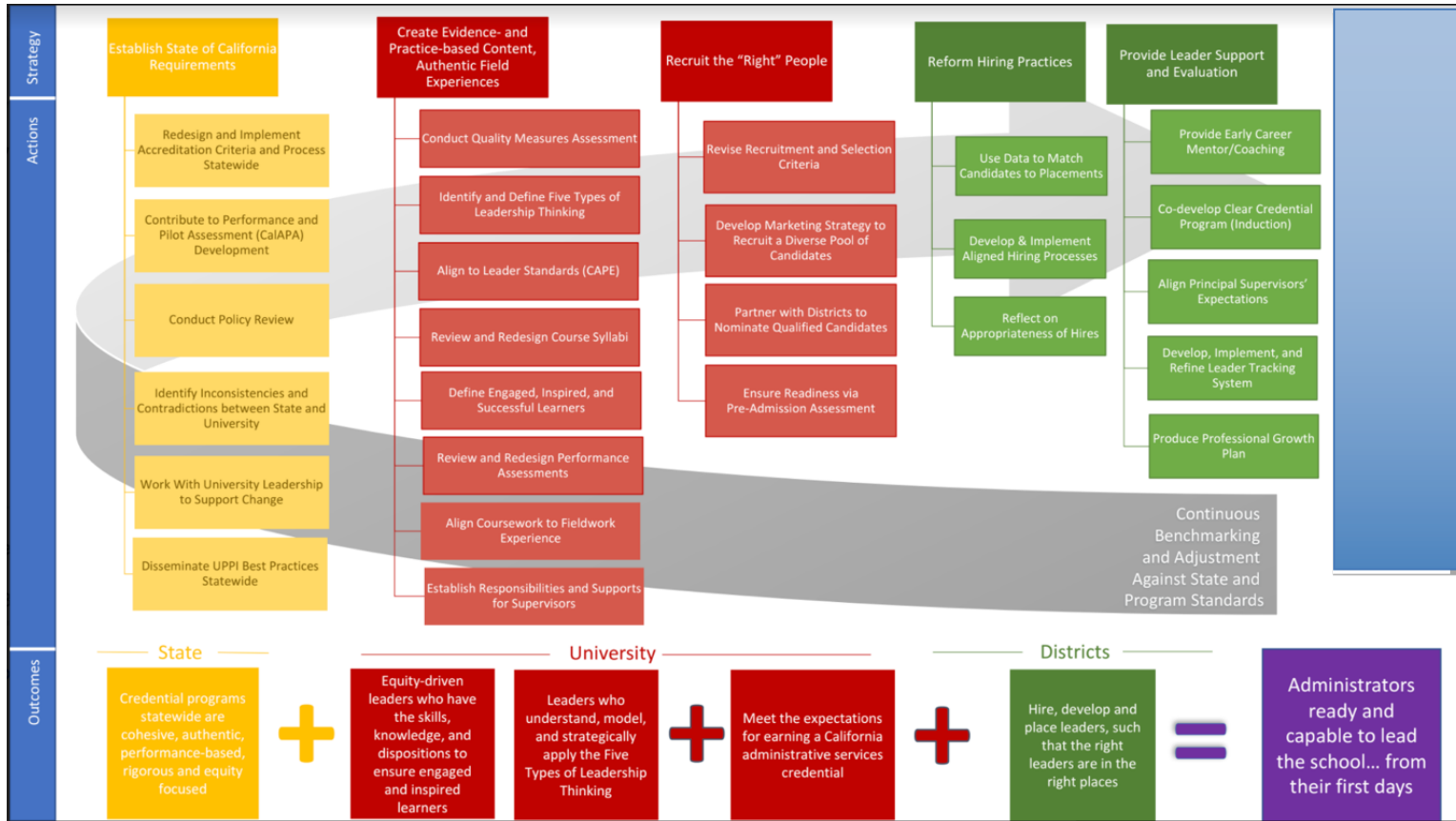
Appendix J

Redwood State University Changes to Program

Significant Changes To Our Preliminary Administrative Services

Equity-Driven Leader Focus

We have established a clear and non-negotiable focus on equity-driven leadership. This is operationalized by: 1) an Equity Index that defines necessary dispositions and responsibilities, 2) co-constructed Equity-driven Leader Standards (5 types of thinking), 3) a 2-day Equity Retreat, and 4) revisions in both coursework and clinical practices to focus on equity.

Revised Field-based Learning Practices

In collaboration with our district partners, we agreed that our clinical practices will provide candidates' experiences that are purposeful, consequential, and emotional. These experiences must be related to school improvement, require candidates to lead rather than just observe and participate, include rich feedback and opportunities for candidates to authentically reflect, and be supported with a robust relationship (principal mentor, university supervisor, candidate) that is focused, intentional, and thoughtful.

Established Professional Leader Expectations

Our program has evolved into a Learning Support System that can be broken into three distinct areas: Coursework where students develop leadership knowledge and skills; Field-Based Learning where students experience authentic leadership practice; and Professional Expectations where students develop the behaviors and dispositions essential to effective leadership.

District Partnerships

Significant to our work has been developing strong partnerships with our districts. As part of this work, we have invited our district leaders to be thought partners and decision makers in our course sequencing, field-based learning (clinical practices), and our culminating exit exam to name a few. It is also been reciprocal in working to revise their principal job descriptions and evaluations, and establish district Leader Development Systems.

Expanded Program Influence

We are now supporting the redesign of 12 principal preparation programs by leveraging the lessons learned through the ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮▮▮▮▮▮▮. While all of the programs had unique needs, a common denominator ran across all programs: They were struggling with how to redesign their programs to prepare students to successfully pass the CalAPA. They all saw the need to involve district partners in the redesign and participate in ongoing collaboration. Many were desperate for thought partners who were willing to share documents, lessons learned, facilitation, and artifacts.

Our comprehensive programmatic and structural redesign addressed three themes: curriculum, field experience and program outcomes.

We have proposed a Teacher Leadership Master's Degree program to focus our administrative services credential program on those who want to lead schools. The program will launch in May 2020.

A major focus has been on the required changes due to our State's new mandatory performance assessment (CalAPA) developed and implemented during the timeframe in which this grant operates (and

In addition, we have developed robust field-based learning practices, including externship and a mentoring bridge, in partnership with three districts. This has required meaningful collaboration with partners to design, implement, and measure outcomes that foster candidates' development and prepares them to lead schools.

Appendix K

Frequency Table of TLB, TLC, and IWB

Dimension of TLB	Frequency of comment	Number of commenters
Team reflexivity (TR) - Facilitating	13	9/11
Boundary spanning (BS) - Facilitating	16	8/11
Constructive conflict (CoCon) - Basic	19	8/11
Team activity (TA) - Facilitating	8	6/11
Storage and retrieval (S/R) - Facilitating	6	5/11
Knowledge sharing (KS) - Basic	2	2/11
Co-construction (CoCo) - Basic	1	1/11
Dimension of TLC	Frequency of comment	Number of commenters
Team leadership (TL)	15	7/11
Organizational strategy (OS)	20	7/11
Psychological safety (PS)	6	5/11
Shared mental models (SM)	5	4/11
Team structure (TS)	5	3/11
Team efficacy (TE)	4	3/11
Cohesion (C)	5	3/11
Systems thinking (ST)	7	3/11
Interdependence (TI)	6	2/11
Group potency (GP)	5	2/11
Team development and team dynamics (TD)	1	1/11
Dimension of IWB	Frequency of comment	Number of commenters
Idea realization (IR)	12	7/11
Opportunity exploration (OE)	2	2/11