ABSTRACT

Ken Simon, INQUIRY: A PEDAGOGY FOR PERSONAL EMPOWERMENT, COLLABORATION AND DEMOCRACY (Under the direction of Dr. Matthew Militello). Department of Educational Leadership, December, 2019.

Purpose: Inquiry-based pedagogy is rare within the educational landscape. It is even more rare for students who face multiple challenges to success, including racism and poverty. Inquiry-based pedagogy substantially supports students with the deeper learning skills of critical thinking, problem-solving, and collaboration. The study examines the pedagogy and practice of urban teachers dedicated to inquiry-based teaching and learning. Research Method: The ethnographic study focused on three urban teachers who were highly recommended by colleagues and school leaders as having a strong and thoughtful inquiry-based practice. Over the course of fifteen months, the researcher conducted multiple observations of each teacher's class, interviewed each teacher multiple times, held three virtual meetings that brought together all three teachers, and interviewed their school leaders. I analyzed qualitative data to understand trends and patterns about the nature of each teacher's practice. Findings: Two central findings are the result of the study. First, inquiry-based teachers build complex systems and structures that focus on student agency and strong relationships between teacher and student(s). Second, because inquiry is complex, teacher development is a continuous process, and the colleagues and leaders at the school level are central to each teachers' continued development. Implications: The findings have implications on three levels. First, at the university level, young teachers entering the profession need substantive experiences with an inquiry-based pedagogy and a deep understanding of learning theory. Second, educational leaders need to understand how to create a school culture with inquiry as a central shared pedagogy that helps to build the collective

efficacy of a school staff. Finally, policymakers should ensure that all students have access to an inquiry-based pedagogy.

INQUIRY: A PEDAGOGY FOR PERSONAL EMPOWERMENT, COLLABORATION, AND DEMOCRACY

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DEDICATION

To all educators and students that mentored me throughout my career.

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At the beginning of each chapter, I offer a vignette based on my experience as an educator. The vignettes tell my personal story and connections to inquiry-based pedagogy. The vignettes are designed to provide a broader context, beyond the teachers and schools in the study, for the need for inquiry-based learning as well as the challenges of implementing inquiry as a consistent pedagogy.

My first attempt at project-based learning happened in the fall of 1988. Part of my teaching duties that year included social studies instruction at an alternative school called PEASE Academy in Minneapolis, Minnesota. The school was designed to support sober students who had been through drug and alcohol treatment. As such, it enjoyed wide leeway in terms of instructional design. I jumped at the chance to use my students' interests to guide instruction. Immigration was on the rise in Minneapolis, and the students expressed wanting to learn more about why people were coming there and how they were treated once they arrived. We were off.

Over the course of two months that fall, my students set out to understand more about immigration and immigrants in Minneapolis. They interviewed immigrants as well as community leaders who supported immigrant families. They talked to law enforcement officials and lawyers who helped immigrants obtain green cards and work toward citizenship. They studied the laws around immigration and discovered how immigrant families were able to support themselves and other members of their community.

Together, my class discovered that many of the immigrants who came were refugees from wars in Southeast Asia, Central America, and Central Africa. They identified the support networks that immigrants had in Minneapolis and how those support networks attracted more refugees. Through their interviews with refugees, they built empathy and compassion and

eventually found connections. In one way or another, the refugees that they met and got to know began reminding them of themselves. In one sense, their addictions had made them outsiders in the same way that refugee status had made the immigrants outsiders within the Minneapolis community. As the semester drew to a close, the students prepared presentations and papers that reflected their research and created beautiful tri-boards with pictures of many of the immigrants they interviewed as well as pictures from the home countries of many.

The project was significant for my students as they were able to make personal connections to what they were studying. Yet, when I look back at that project as an experienced educator, I see lots of missed opportunities. I did very little scaffolding to support the students and many of the interviews reflected merely a surface understanding of the experience of their subjects. The written work that accompanied their presentations was minimal and poorly developed. I missed an opportunity to support students in the development of their written and oral presentation skills. At the same time, the perceived success of my first venture into project-based learning and inquiry was one of the most meaningful of my career. I became hooked by the power that projects like this had to engage students and eventually I would learn how to use projects in order to support students to develop a wide range of skills from writing and presentation to critical analysis and problem solving.

Introduction

Several years ago, in my role as the Director of College and Career Readiness for Minneapolis Schools, I supervised Career and Technical Education (CTE). At the time, I had a traditional image of CTE: wood, plastic, and metal shops along with the ubiquitous auto repair. After a day in one of the engineering classes at a local high school, my perception of CTE

changed drastically. What I saw in the engineering class was a high-quality, inquiry-based learning experience.

The class periods were 90 minutes, and I observed both engineering sections that day. Each class had approximately 30 students divided into groups of four or five students that the teacher called problem-solving groups. Students were immersed in a project designing mobile bridges that could span up to 50 feet. The groups had constructed a series of questions that were guiding them as they researched metals, bridge decks, and different types of concrete. The structure of the class was clearly designed to maximize the work of students and minimize the teacher's role. As I observed students working in groups, it became clear to me that each group had developed its own rhythm and structure in order to solve the problems inherent in the design challenge and complete their work. It was equally evident that the students knew that their questions mattered and were the keys to unlocking solutions and ultimately coming up with the mobile bridge design (Boykin & Noguera, 2011; Bruner, 1961; Buchanan, Harlan, Bruce, & Edwards, 2016).

Several days later, I came back to the school and observed English, math and science classes. I saw many of the same students from the engineering class. On this day, they looked tired and bored. While the teachers tried to engage the students with episodic “hands-on” activities, the classes as a whole were designed for students to acquire a body of knowledge. In several of the classes, the teachers justified the classwork by telling students that the work they were doing would be reflected on the state test.

This experience left me with some deep questions about learning and teaching. These questions are at the heart of the project:

- What do students need to thrive in an inquiry-based environment?

- How do inquiry-based teachers facilitate and structure student learning?
- What do inquiry-based teachers believe about learning and how are those beliefs implemented in their practice?

While these questions seem to focus on pedagogy, they actually take us much deeper into educational policy, politics and philosophy. As a policy issue, how we teach has gained enormous amounts of attention in the last twenty years. Many organizations have pushed a pedagogy rooted in content acquisition, direct instruction that privileges deductive and linear thinking with little attention to multiple learning styles, and strict hierarchical rules that guide student behavior in schools (Cuban, 2013). Charter organizations like KIPP and Uncommon Schools subscribe to this type of pedagogy. As a result, teacher preparation programs have been impacted as organizations like Teach for America embrace and train their teachers in this type of approach. The test-driven pedagogy finds its roots in public policy, which for the past 20 years has created a culture that describes achievement in terms of standardized tests. The tests are used for an increasing number of accountability purposes and are now common measures of teacher, school, and district success (Goldstein, 2014). The culture of testing drives district strategic plans, professional development, school systems and structures (i.e., the daily schedule) and a didactic pedagogy. At the same time, skills such as critical thinking, problem solving, and collaboration are increasingly needed for success in the twenty-first century and are rarely taught, particularly in schools that serve marginalized communities (Darling- Hammond, 1997; Truong, 2014; Tyack & Cuban, 1995).

The testing and accountability culture has had deep impact on the field's collective understanding about the philosophy of learning. Much of the education establishment has come to believe and promote a pedagogy based on the notion that students are empty vessels that

teachers dutifully fill with important content based on state and national standards, which Freire (1970) termed the banking method. As beliefs about learning and the learner solidified around the accountability movement, constructs such as data-driven instruction began to drive pedagogy. Instruction in many ways has turned into a series of tactical moves designed as a form of both crowd and thought control. An example of this narrow pedagogy comes from the *Teach Like a Champion* series (Lemov, 2015). The message to young teachers is that quality instruction is teacher-centered performance art; success is measured by the teacher's ability to use discrete strategies in the service of controlling both student behavior and learning.

As schools and teachers employ more and more strategies carefully aligned to skills and knowledge that could be measured through a standardized test (in some cases teachers spend hours aligning specific practices to specific items on a test), practices that lead to deeper learning and inquiry have become relegated to anomaly status. At best, inquiry practices appear as special events for a science fair or history day. What students lack is a consistent set of inquiry practices that lead to deeper learning skills as opposed to an episodic adventure related to a student project. What teachers lack are both the philosophical and psychological foundations about learning that lead to experiences where students think critically, raise questions, and work collaboratively to solve relevant problems and issues.

The testing, accountability, and didactic education culture has had its deepest impact on districts and schools that serve students who face multiple challenges to academic success (those challenges include poverty, language success, low expectations, inexperienced teachers, and systemic racism among many other variables that impact students both individually and collectively). Across the nation, most of the young students in these schools have had little to no experiences with learning models that build skills and dispositions for inquiry, critical analysis,

and problem solving. Ironically, these are precisely the skills that a vast number of employers, political leaders, and college professors identify as critical to long-term individual success and the health of our democracy.

The purpose of the project was to uncover, expose, and collaboratively strengthen a pedagogy of inquiry that is tailored to the experiences of students who face multiple challenges to academic success. My interest was seeded early in my career. Over the years, I have been part of education systems that have denied the richest, deepest and most relevant pedagogy to the students who deserve and need this type of education the most. To get a deeper understanding of how successful student-driven inquiry functions best, I worked with three experienced teachers who employ inquiry as their primary pedagogy.

Focus of Practice

The focus of practice (FoP) evolved over the course of the research. The original FoP was on project-based Learning. Project-based Learning (PBL) as a key learning strategy that many teachers employ. A well-run PBL model has the potential to help students build key skills such as critical thinking, question design, research, and various forms of presentation. But PBL by itself did not necessarily constitute a pedagogy that transforms the typical learning experience for students. After several conversations with long-time colleagues and several angsty reflective memos, I changed the FoP from PBL to inquiry-based pedagogy. Specifically, I wanted to study inquiry-based processes that led to greater student independence, the development of a wide and significant array of skills, and a deeper understanding of content and concepts (Noguera, Darling-Hammond, & Friedlaender, 2015).

The shift from PBL to an inquiry-based pedagogy was based on a realization that PBL, on its face, was too broad, and I struggled with an understanding of how it consistently

connected to deeper learning. In fact, over the years I observed in multiple PBL classrooms that did not reflect deep thinking, focusing students' energy instead on making their final product look good. An inquiry-based pedagogy, on the other hand, is all about the thinking processes and classroom systems and structures that a teacher builds to help their students think more deeply. At the beginning of this chapter, I described an engineering class in which student inquiry was the dominant pedagogy. In that class, students were engaged in an inquiry process (or cycle) that included students developing questions, researching those questions, critical analysis of their findings, collaborative and individual reflection, and application. With a recognition of both the power and the scarcity of such an approach, the FoP became: *Lack of access for K-12 students from marginalized communities to inquiry-based learning processes that would allow them to build and apply the skills necessary to solve complex social and environmental problems.*

At its core, the FoP boldly assumes that inquiry-based learning practices are essential for all students, and, in the current state of education, schools and districts that serve marginalized students have generally prevented their students from having access to this type of learning. The excuse for not providing this type of education has often been that it does not prepare students for standardized tests. Two recent studies suggest that this excuse does not hold water; inquiry-based learning is successful in preparing urban learners for college and career (AIR, 2016; Zeiser, Taylor, Rickles, & Garet, 2014). To further unpack the ways in which inquiry-based learning opens opportunities for deep and meaningful learning, the FoP focused on several smaller foci. In the sections below, I discuss the foci, examining the role of educator belief systems, the critical need to consider equity in policy and practice, and the impact of high-quality educators.

Belief Systems Matter and Anchor Strong Pedagogy

One of the key concepts undergirding the FoP was the value inherent in a consistent application of an inquiry-based process as the primary mode of teaching and learning. Many teachers use inquiry practices within the classroom. In many cases, their use appears more as strategies and tactics designed to engage students for a particular project or course of study. In the field, these practices are often described as hands-on activities in order to motivate and engage students. Because this FoP focused on transformative teaching and learning, I looked beyond strategies and tactics and focused on using inquiry as a core pedagogy. Any deep and consistent pedagogy must be rooted in belief systems about learning in teaching (Song & Looi, 2012). For the FoP, I looked closely at the link between belief systems that teachers hold about their students and about learning and how these in turn play out in the classroom.

Equity is a Core Issue in Terms of Pedagogy and Policy

Who has access to inquiry-based learning is a core question for the FoP. The use of inquiry-based learning processes is both an issue about access on a day-to-day basis as well as an issue about public policy. The No Child Left Behind Act (NCLB) of 2001 compelled many districts and schools to refocus classroom instruction to more didactic, teacher-centered instruction (Tyack & Cuban, 1995). Further, many teacher support organizations, textbook producers, and testing companies geared their products and services toward an accountability-driven, standards-based educational environment. NCLB put undue pressure on schools and districts that are culturally diverse and serve students from lower socioeconomic communities to implement a pedagogy that would merely improve test scores. More than any other group in America's public schools, poor children and students of color lost the opportunity to engage in meaningful, inquiry-based instruction. As such, equity was a lens central to the FoP and the quest

to examine the consistent implementation of an inquiry-based pedagogy in schools that serve students with multiple challenges to academic success.

Importance of Structure for Recruiting and Selecting Teachers

I describe in detail the recruitment of the team of three teachers that participated in this study in Chapter 3. The three teachers – Andy Snyder, Denise Huey and Megan Hall – teach in three different schools in three different communities. Each school – Harvest Collegiate High School, Impact Academy and Open World Learning (OWL) – has strong inquiry-based pedagogical models that teachers are expected to use. The three teachers who made up the team had been highly recommended by leaders either in their school, the charter management central office, or by someone in higher education. The three teachers teach different subjects: humanities, math and science. Because the FoP seeks to uncover strong and effective pedagogy as a model for other teachers, I specifically selected the team members considered to be at the 'top of their game' with high quality implementation of inquiry-based practices. Further, their experiences and expertise allowed them to articulate a philosophy about learning that supported their practices. Next, I describe the evidence of assets and challenges that accompanied the FoP. Attending to these was crucial in my hopes of presenting research that would be useful to the field as a whole.

Evidence of Assets and Challenges

The study took place within a larger political and social framework that has long denied students from marginalized communities the opportunities for richer, deeper learning experiences traditionally reserved for white middle and upper middle-class students (Mehta, 2014). From the start of this project, I asserted that inquiry is a pedagogy that promotes a type of learning experience in which all students need to be successful in K-12 schools and to thrive in

the future. In this section, I provide evidence as to the existing assets and challenges within the contexts, which further illustrate why the study is important to educators and their students.

Figure 1, the Fishbone diagram, provides an analysis of the equity issues surrounding the development and consistent use of an inquiry-based pedagogy. The figure outlines evidence of the importance of inquiry-based instruction and the challenges that teachers have in implementing this type of pedagogy. As the fishbone shows, public policy, beginning at the federal level, has deep impact on the type of pedagogy used in classrooms. Despite the fact that a standardized test-driven pedagogy fails to engage students in meaningful and relevant content, the pedagogical approaches remain the same. The fishbone illustrated the importance of more research in the successful implementation of inquiry-based pedagogy to support individual educators and propel larger policy changes. The analysis of the assets and challenges in the field led to the development of the improvement goal for the study.

Improvement Goal

The ultimate goal of the project was to provide educators and school leaders with a deep understanding of the teacher philosophy behind inquiry practice and the systems, structures, and strategies of inquiry built upon that philosophy. In particular, the focus was on the consistent application of an inquiry-based learning process with students who face multiple challenges to academic success. Further, the design of the project was structured not only to uncover strategies and tactics used by inquiry-based teachers but to create learning experiences for teachers to build their inquiry-based pedagogy.

Figure 2 provides on overview of the FoP goal and the related drivers of that goal. The chart provides an important level of understanding about how the FoP is connected to larger policy and philosophical issues playing out at public schools. At the larger macro level, the chart

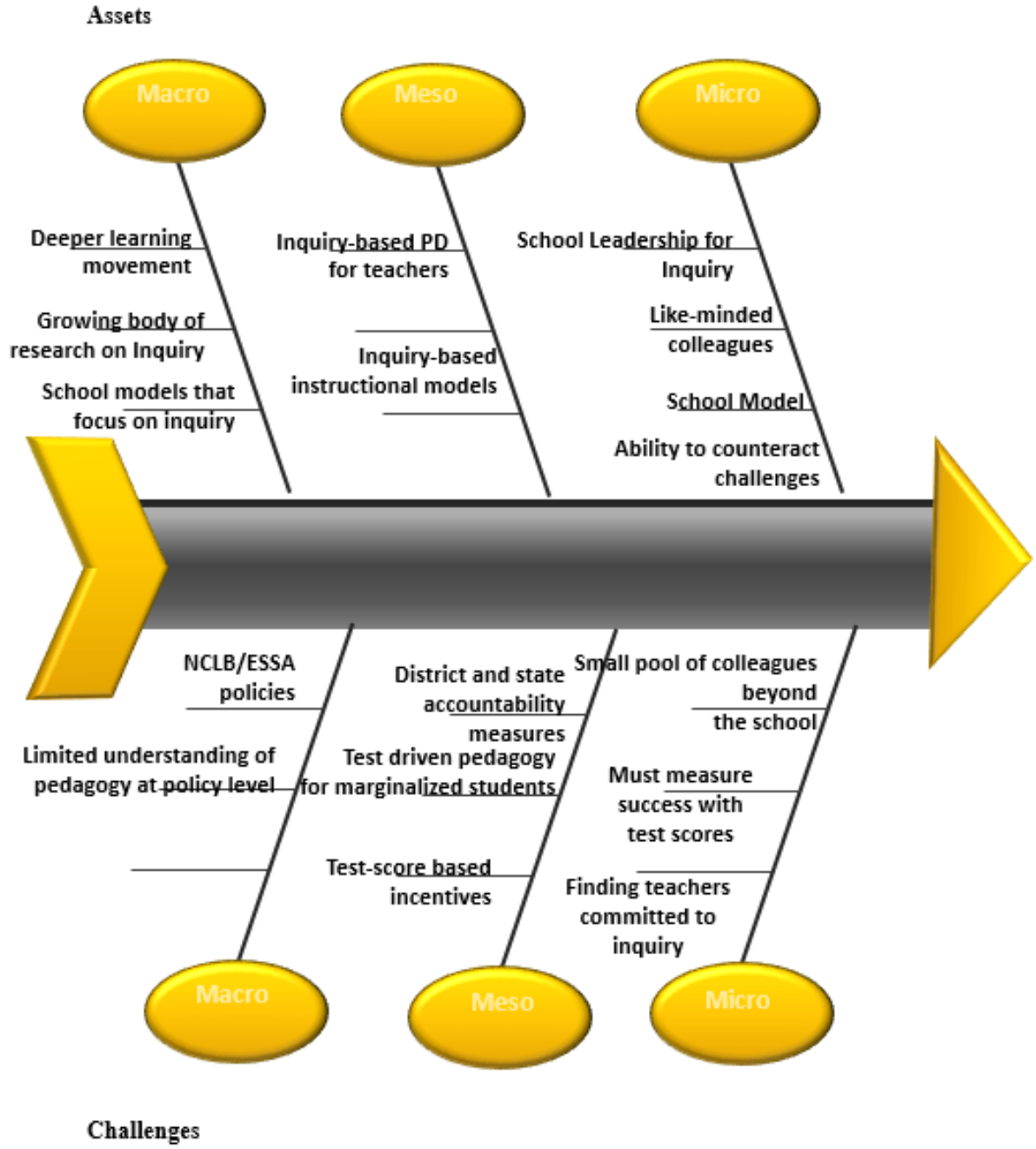

Figure 1. Assets and challenges to implementing and inquiry-based pedagogy.

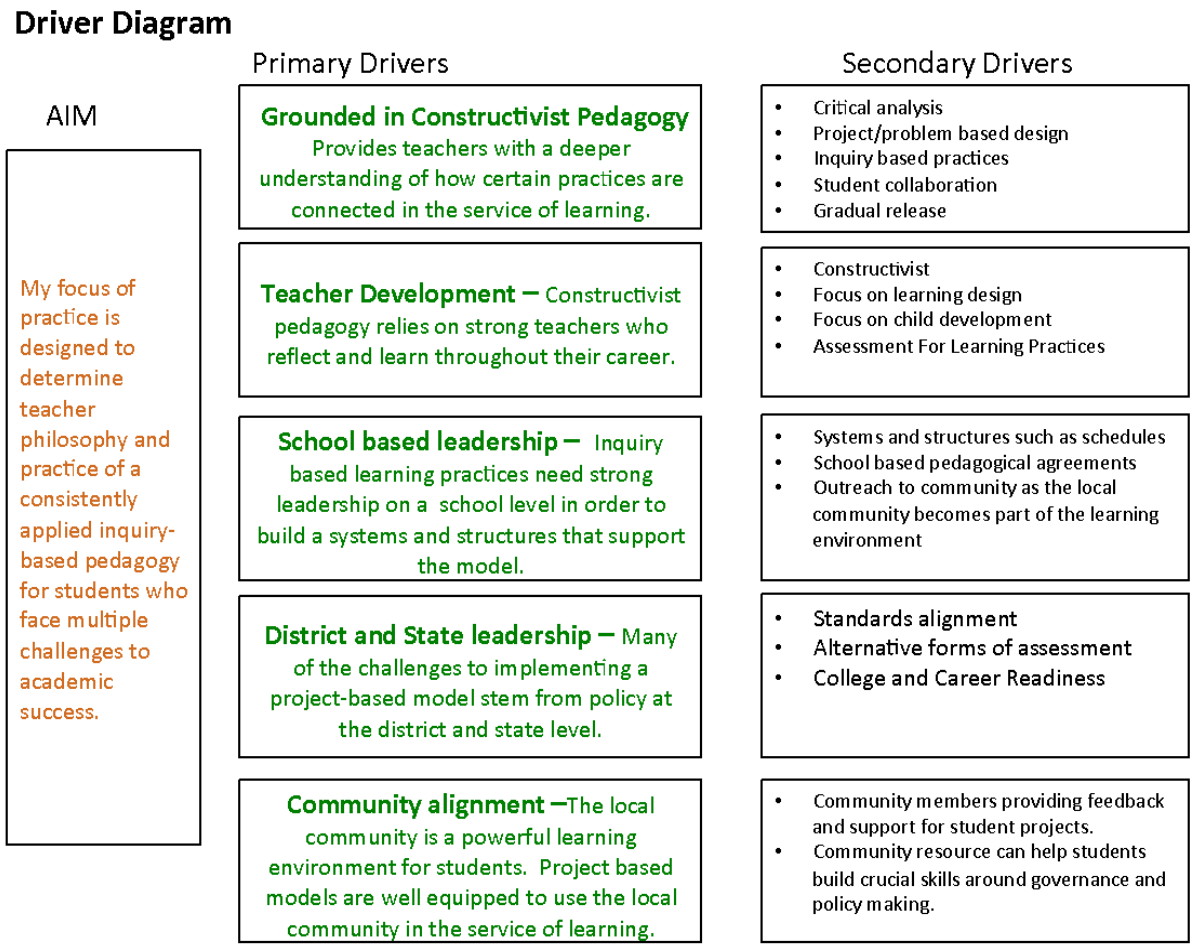

Figure 2. Focus of Practice goal and drivers.

provides a window into the learning systems the drive the vast majority of our schools. National research, as well as local leadership, play a significant role in the implementation of a particular pedagogy at the school level. In the selection of my team, each school's mission about student learning and pedagogy was a key criterion.

The six principles of improvement science (Bryk, Gomez, Grunow, & LaMahieu, 2015) provide an opportunity to understand the impact that the study can have on research and classroom practice. Below is an analysis of the principles in relation to the FoP:

1. *Make the work problem-specific and user-centered:* At the center of the FoP was a problem of access to deeper learning. Few teachers of students who face significant challenges to academic success employ deeper learning models in classrooms instead inflicting a pedagogy on students that does not prepare them for college, career, or democratic citizenship. The goal of the FoP was to provide teachers with a deeper understanding and models of inquiry-based pedagogy as inspiration and a guide to incorporate a different approach.
2. *Variations in performance is core:* The FoP uncovers successful models of inquiry-based pedagogy for students who have had little or no experience in this type of learning environment. Denise, Andy, and Megan offer wide variations of an inquiry-based practice.
3. *See the system that produces the current outcomes:* The dominant pedagogy in the current system fails to prepare students beyond success on tests. It is based on a notion of accountability driven by narrow measures of testing and seeks to assess blame instead of building new systems to overcome inequities.

4. *We cannot improve what cannot be measured:* The project used qualitative measures to determine how teachers have built successful models of inquiry-based pedagogy and how we can support more teachers to employ an inquiry-based pedagogy that meets the unique needs of their students. I used qualitative measures to name and understand the complexity behind an inquiry-based practice.
5. *Anchor improvements in disciplined inquiry:* I employed an inquiry process to better understand teacher models for an inquiry-based pedagogy and to understand the core belief systems that teachers hold which lead them to an inquiry-based learning model. Through the inquiry process, we were able to uncover the role that school leaders and colleagues play in teacher development.
6. *Accelerate improvement through networked improvement communities:* The project brought together three teachers for collective inquiry over a period of fifteen months. During that time, we collaboratively uncovered multiple models of inquiry-based learning. Each teacher incorporated new ideas into his or her practice.

Purpose of the Study

Both the fishbone and driver diagrams lay a strong foundation for articulating the purpose of the ethnographic research project and its goal of providing a window into inquiry-based pedagogical processes for students who experience multiple challenges to academic success. The design of the study was intended to develop dynamic models for implementing an inquiry-based pedagogy within highly diverse, urban classrooms for students who have limited prior experience with this approach. The study focused on three experienced inquiry-based teachers and created opportunities for them to operate as a team despite their geographic distance from

one another. The following key points frame how the group joined together as a networked improvement community (Bryk et al., 2015):

a. Uncovered each teacher's unique model for inquiry-based pedagogy.
b. Applied learnings from team meetings and Flipgrid experience to practice
c. Pushed each other, through questions, to understand the depth of each other's beliefs and practice

While inquiry classroom processes and practices were core to the study, the project was anchored by each teacher's philosophy about the pedagogy of inquiry and their beliefs about their students' capabilities as learners. Inquiry is a learning process that includes problem solving, student-designed questions, and independent research. The study calls attention to the nature of critical pedagogy and constructivism, which includes critical analysis of the data collected and student reflection. Defining the terms as used in this study is helpful:

- Inquiry – opportunities for students to ask and pursue their own questions in the service of learning.
- Critical analysis – opportunities for students to build background knowledge, analyze text using multiple lenses, build empathy, and use multiple perspectives.
- Designing action – opportunities for students to use research and analysis in the service of problem-solving.

Thus, inquiry, as a pedagogy, goes beyond being curious and asking questions and is complex pedagogy that includes critical thinking, real-world problem-solving, student to student collaboration and processes that support students toward greater academic independence (Savery, 2006; Saye & Brush, 2006; Song & Looi, 2012). Based on the external research as well as the research from the ethnography, an inquiry-based teacher designs student learning around

key questions that connects students' lives to authentic real-life experiences. Inquiry-based teachers consistently facilitate learning experiences that build student skills in critical thinking, problem-solving, independent research based on students' questions, and student collaboration. Further, inquiry-based teachers intentionally connect learning theory to daily practice and use knowledge gained through their relationships with students to guide their pedagogical choices and their students.

As a researcher, it was essential to fully understand the depth at which the teachers in the study designed learning experiences that embody these principles. Because the study focused on key principles of learning as they play out in student experiences, the research methodologies needed to provide for deeper understandings of teacher philosophy and intent. By observing student thinking and work over time in which ideas are generated through questions and analysis, I could fully understand the depth of inquiry-based learning. These interrelated goals made sense within the context of the frameworks, or lenses, through which the FoP was born, specifically the philosophical (teacher philosophy), psychological (student experience), political (inequities in public education), and researcher (critical analysis) lenses described.

Framework for the FoP

The focus of practice was designed to determine inquiry-based models for teachers who primarily teach students who experience multiple challenges to academic success, and to implement a consistent inquiry-based pedagogy. Further, the study was designed to facilitate teacher development as the teacher participants deepened their inquiry-based practice throughout the course of this research. The FoP was analyzed and understood through various lenses. While the purpose of the study was to document and support teachers in the development of an inquiry-based pedagogy, throughout the study, I uncovered multiple opportunities and challenges that

impacted the implementation of such a pedagogy. The following lenses or frames provided a deeper understanding of the opportunities and challenges of inquiry-based pedagogy.

Philosophical Lens

At the core of the study was the belief that a democratic society needs an educated population that can think critically about significant problems which impact local communities and the larger global community. These critical thinking skills are part of an inquiry learning process that many students have limited or no access to in their formal education. For teachers, building a personal pedagogy is essential; that pedagogy is firmly based on the philosophy that connects long-term societal and personal needs with learning systems that help students build the skills and knowledge to meet these (Dewey, 1938; Noddings, 2005; Song & Looi, 2012). Further, to provide consistent inquiry-based experiences for students, teachers must have a deep understanding of student learning and motivation that includes cognitive, emotional and social experiences.

Each one of the three teachers had a philosophical base of understanding that seemed to guide his or her practice. At the heart of each teacher's philosophy was a deep understanding of inquiry and how inquiry-based practices can lead to deeper learning. What was more complex was their beliefs about how their students learned in an inquiry-based environment, including the scaffolds that their students needed, the kind of content that motivated them, and the kind of products they would be asked to produce.

Psychological Lens

Stereotypes about some learners have driven a testing culture as well as a didactic pedagogy that focuses on content knowledge. Students of color tend to be the most frequent victims of this kind of pedagogy. The didactic pedagogy of the test-driven culture is focused on

deficits and fails to either acknowledge or support the assets of students who struggle with standardized tests. For students who fall victim to didactic pedagogy, the psychological impact can be tremendous. When learning is continually shaped around gaps and deficits, the learning experiences send students a clear message that they have few if any cognitive assets (Steele, 2010).

Conversely, an inquiry-based pedagogy begins with the assets that students bring to class and helps build upon these existing strengths. The inquiry-based pedagogy provides students with opportunities to build confidence while the didactic, test-driven pedagogy continually stresses student deficits and drives students to believe that they have few if any assets to contribute.

In this study, the three teachers took great care and time to build relationships with their students. It was through cultivating and sustaining deeper relationships that each one of the teachers could understand the assets that each student brought to the table. As I discuss in the findings section, the relationships were used to leverage deeper learning.

Political Lens

Public education policy in the last 20 years has been a powerful force that has impacted districts, schools and classrooms in profound ways. Central to the impact has been the role that standardized testing and accountability have played in our schools (Darling-Hammond, 1997). In this project, one can see how inquiry-based pedagogy challenges specific public policy that has shaped pedagogy and practice, primarily for students who experience multiple challenges to academic success.

Public policy has made the three teachers and their schools an anomaly in the larger field of education. At the same time, each of the schools has demonstrated that they serve students

with multiple challenges to success well. The study, among others, can provide policymakers with stronger and richer perspectives on student learning and lead the way for policy support around models of deeper learning and inquiry-based practices.

Research Lens

My lens as an educator and researcher provided the foundation for this project. Early in my career, I was part of a study on gender equality in the classroom. During that study, a professor at the University of Minnesota sat in my classroom several times a week mapping two things: discussion patterns (who did I call on, and the types of questions I was asking students) and discussion content (historical examples used, the range of issues discussed). I was also interviewed as well as some of my students throughout the research.

About a month after the research ended, I met with the professor to go over my "results." As a classroom teacher, I failed miserably. When it came to discussion patterns, boys tended to dominate the conversation and were allowed to "ramble." My wait time for girls to complete their thoughts was abysmal and I tended to summarize the thoughts of girls more than boys. This evidence changed me as a teacher and helped me develop a new set of skills

The experience of being both a research subject and a researcher literally changed the course of my teaching career. The experience provided me with a window into teaching that stretched beyond my classroom and helped to create a purpose for me to be a researcher. Through this experience, I found that qualitative studies provided a deep perspective that support my own learning style and needs.

While having an appreciation for qualitative and quantitative methodologies, my core learning focuses on understanding through narrative – building and telling the story. In that context, as a researcher, I feel most comfortable observing and listening in order to build a

broader narrative that can be used in the service of quality instruction. Using inquiry in the research helped me to uncover deeper meaning and broader connections as to why a teacher makes a particular move or structures a particular learning experience in the way that they did. I can then connect those particular experiences to core beliefs and foundations. My urge to know stems from deeper questions that seem hard to reach through surveys and other quantitative methods. Instead, they require probing and a certain degree of interview customization. To this end, I designed a study that allowed me meaningful access to the teachers within their individual settings, allowing me time both to interview and to observe, as well as to connect the three within a networked improvement community to support their development. I describe the design in more detail in the next section.

Research Design

The research for the project took place over fifteen months and was based on two phases. Before the first phase began, I identified three teachers to participate in the study: Megan Hall, Andy Snyder, and Denise Huey. In the first phase, our work together focused on identifying their personal and professional connections to inquiry and their philosophy of learning and key characteristics of their inquiry-based pedagogy. In the second phase, we looked more deeply at how specific practices aligned with their teaching philosophy as well as the ways in which they continued to develop their practice.

The overall design of the research was structured in a way that sought to connect teacher beliefs about learning, the practices that support this learning, and the support each teacher has for the continued growth of their practice. The group of teachers who were subjects in the study teach in schools that serve a majority of students who face multiple challenges to academic success. Through my observation, interviews, and engagement with each of them and with the

team as a whole, I hoped to uncover some relevant truths through the selection of my research questions.

Research Questions

The primary research question and related sub questions were designed to guide the study toward an understanding of what an inquiry-based pedagogy looks like in the classroom. Further, as the research questions suggest, equity is at the heart of this study. Inquiry-based learning has been systematically denied to students in primarily urban, marginalized communities. Public policy around testing and accountability has put pressure on most urban schools to quickly raise test scores. As a result, the perception of inquiry-based learning among many educators is that it is a "nice to have" rather than essential and that the only way to raise test scores is through a teacher directed pedagogy that teaches to the test in multiple ways. Yet, we must set our sights beyond test scores and develop learning experiences for students that build long-term skills necessary for preparing students as democratic and global citizenry. To this end, hoping to impact practice, policy, and research, I designed the following questions to guide the research:

1. To what extent do teachers develop the philosophical foundations and pedagogical capacity to engage in inquiry as a consistent model of teaching with students who face multiple challenges to academic success?
2. To what extent do the philosophical and pedagogical dispositions transfer into consistent instructional practices?
3. How do we (teachers and researcher) co-construct a theory of teaching that addresses philosophical, pedagogical and instructional foundations of inquiry as a key practice?
4. To what extent will experienced inquiry-based teachers interrogate each other to improve their practice?

5. To what extent can and do teachers construct inquiry experiences that gradually release responsibility for learning to students?
6. What does that model look like over time?

Significance to Practice

When I began the study, I worked for an organization that supports several large urban and suburban schools and districts. The focus of our work was to support teacher development around global competence and inquiry-based pedagogy. In the past four years, we saw a sharp increase in interest from school and district leaders looking to provide students with deeper learning experiences that focus on inquiry. I believed that the study could contribute to a growing body of work on project-based learning, inquiry, and what is now being called "deeper learning."

The original design of the project was intended to provide school leaders and teachers with models for employing inquiry-based pedagogy with students who face multiple challenges to academic success. Through the research, I now can say that the findings help us understand the role that colleagues, and school leaders play in the ongoing development of a sustainable inquiry-based pedagogy. Finally, all three teachers in the study have had multiple student teachers and mentees over the years. The findings in the study were a means by which to enrich their understanding of how to support pre-service and new teachers in the profession to develop an inquiry-based pedagogy.

Significance to Research

The findings in the study provide strong models for teachers who translate inquiry-based theory into a consistent practice that deeply impacts students. The teachers in the study are clearly outliers in terms of what is currently thought of as mainstream educational practices focused on accountability in student achievement as measured by narrow test scores. As that test-

driven pedagogy continues to fail students with multiple challenges to success, research on teachers such as Andy, Denise, and Megan become even more important to the future of education.

Further, the schools that Megan, Andy, and Denise teach in are outlier schools. All three schools are highly focused on an inquiry-based pedagogy and have created systems and structures for students to learn within an inquiry-based context. All three teachers credited their colleagues and school leaders for their continued development as teachers. By providing the opportunity to contribute to the research on the conditions that enable an inquiry-based pedagogy to thrive, the study supported them to articulate what they do and thus have deeper understandings of how their beliefs translate to practice. The study provided an opportunity to understand how a shared pedagogy among colleagues in one school, actively empowered by site leadership, supports practices that can impact student learning and contribute to the knowledge base on successful leadership practices and organization for professional learning.

Significance to Policy

As discussed earlier in this chapter, public policy in education has driven a didactic pedagogy primarily focused on students "banking" information that will raise their achievement on standardized tests (Freire, 1970). The study can contribute to the long-term dialogue about education policy and its role in shaping student experience and outcomes. While the testing and accountability movement impacted pedagogy across the country, its largest impact has been on schools and districts that serve students facing multiple challenges to academic success. Those districts and schools tend to be more urban, diverse and serve communities with wider ranges of economic security. The perception of inquiry-based learning, along with other kinds of deeper learning methods, as useful only for students who are who are already successful on standardized

tests, is simply wrong-headed. Access to this kind of learning is an equity issue that demands changes in education policy. Lastly, the findings in the study provide data to help policymakers understand the power of schools that operate with a common pedagogy. Policymakers at the district level can use this data to grow new schools and reform existing schools around a shared pedagogy.

Chapter Summary

My teaching career began in 1988 in the shadow of the *A Nation at Risk* report (Goldberg & Harvey, 1983). That report cast a cloud over our education system and opened the doors to public scrutiny and mistrust of classrooms across America. On its face, the renewed discussion was necessary, opening the door to re-imagining a struggling system, one that was not truly meeting the needs of young students or of the democratic nation they would soon be charged with leading (Dewey, 1938; Noddings, 2005). While I might not agree with the school reform direction of accountability and standardized testing, the light cast on education was necessary and important. For many students who are White and attend White majority schools in wealthier communities, the report had little impact. For students of color in highly diverse communities, the challenge to academic success as well as personal success over the course of their lives was far greater. For me as a young teacher, the new light that had been directed on our education system was welcome. In 1988, I entered a school in which urban students in 11th grade were studying math facts and reading *about* science while their counterparts in suburban schools, which served primarily White students, were studying calculus and experiencing science as a scientist would through observation and experimentation. Something was deeply wrong.

While I believe that we matched this broken picture with the wrong reforms, I believe that the motivation for the reform was and still is right. All students deserve the opportunity to an

education that empowers them to be scientists, historians, writers, and other actors in the world that will shape our common future. The project was designed to highlight the opportunities that a different approach to improvement could create, one in which an inquiry-based pedagogy addressed the opportunity gaps between schools, rather than focusing narrowly on achievement on standardized tests.

In Chapter 2 of this study, I review the research literature about inquiry-based pedagogy, equity in terms of access to such a learning environment, the relationship between inquiry and preparing students as democratic and global citizens, and finally the professional growth needs of inquiry-driven teachers. Chapter 3 explores the teaching context for the three teachers involved in this study and looks deeply at the research methodologies employed. In Chapters 4 and 5, I report out on the findings for each of the research phases. Finally, in Chapter 6, I discuss the key findings of this study and its implications for the field.

CHAPTER 2: REVIEW OF LITERATURE

As the founding group of teachers of a brand new middle school in North Minneapolis, we first met at a pancake breakfast at the community center attached to the school. The school was the brainchild of Shannon Griffin, a short and powerful woman who single minded determination convinced skeptical district leaders to let her start a new middle school based on years of research on adolescence development, equity, and learning theory. It was 1995 and years before new schools became fashionable. We had no grants and no extra preparation time in the summer. Our pancake breakfast was only one week away from when 400 students would arrive for the first day of school.

The school design was based on building caring relationships with students and among faculty and a pedagogy that focused on active, engaging learning experiences for students. At that pancake breakfast, principal Griffin talked about students, the research that supported her design, and empowering teams of teachers to design and implement learning experiences that would change the lives of our students. Equity was the undertow as we were serving a community that had been vastly underserved. Over 90% of our students were on free and reduced lunch. It was also a diverse community and 40% of our students were African American, 40% were Hmong Americans, many of whom were recent immigrants and the rest of our students were either Native American, White American, or children of recent immigrants from other parts of the world.

The structure of the school was intentionally designed to support the pedagogy and the needs of the families and students. Our students were on teams and teachers looped with their students all three years, our schedule was blocked, and no student had more than three classes

on any given day. The curriculum was based on a series of projects and experiences the connected students to real life issues and the Minneapolis community.

By the second year, I had moved from being a classroom teacher to a teacher leader in the building, supporting teaching teams in the design and implementation of the curriculum. After four years we began to see a strong rise in our test scores. District leaders had decided to reform all middle grade programs and launched a process that would yield a document named the Middle Grades Platform – a roadmap for all middle schools.

A middle grades office was opened at the district level that was directly overseen by the deputy superintendent. I was hired along with two mentor teachers to lead the district effort. After several years we saw a real change in middle grades programs across the district. It began with structures and systems (all schools had a looping system and block scheduling) and moved to pedagogy and teacher practice. We began to see that the reform was taking hold across the district, particularly in schools serving low income communities. Both the internal research at the district level and the national research on middle level education indicated that we were on the right track.

Like many big districts, reform came to an end with the new superintendent. The focus was to be on test scores as Minneapolis had one of the largest test-score gaps between students of color and White students in the country. The new superintendent sent a message that the middle grades reform did not appropriately address the urgent need to fill the gap in test scores.

Inquiry and a Culture of High-Stakes Testing

After years of controversy with a high-stakes testing culture promoted by NCLB and ESSA, a renewed interest is being generated in a pedagogy that promotes what many are calling deeper learning (Barrier-Ferreira, 2008; Golden, 2019; Klein, 2016). Noguera et al. (2015)

characterizes deeper learning pedagogy as an inquiry process that includes student autonomy and student-driven questions, problem-solving, collaboration and project-based learning. Others argue that the skills, habits and dispositions created by an inquiry-driven classroom are far more aligned with the skills needed to succeed in college and careers (Savery, 2006; Saye & Brush, 2006).

While many have seen and continue to see great promise in pedagogy driven by an inquiry process, access to high-quality experiences based on this pedagogy has been limited, albeit in traditional ways, to schools and districts that serve primarily white middle and upper middle-class students. Haberman (1991) has termed the low-level, skills-driven, direct instruction model as the pedagogy of poverty. In a study of 300 classrooms affected by a school reform organization promising improved student achievement, Trujillo and Woulfin (2014) found only 3% of the instruction at a level we would consider higher order thinking skills and a limited move on the school improvement needle. On the other hand, Mehta (2014) describes how "students in more affluent schools and top tracks are given the kind of problem-solving education that befits the future managerial class, whereas students in lower tracks and higher-poverty schools are given the kind of rule-following tasks that mirror much of factory and other working class work" (p. 1). The lack of rigor has been further exacerbated by public policy.

NCLB, and its successor ESSA, focused on accountability as determined by high-stakes tests. The tests eventually became the driver of the curriculum and pedagogy and focused narrowly on supporting students to pass the test. Absent in the test-driven pedagogical model has been our understanding of how children learn best and how to create learning contexts for children that tap into their innate curiosities, their cultural backgrounds, and the communities they live in (Bransford, Brown, & Cocking, 2000).

The research in this chapter is designed to provide a strong basis for articulating what an inquiry-based pedagogy is, what it looks like in the classroom, and why it is vital for animating and ensuring student learning. Further, the chapter is designed to understand the equity issues that surround the development of a broad and consistent use of an inquiry process as a primary pedagogy in classrooms that serve marginalized students. The research project itself, which I describe in more detail in later chapters, was designed to collaborate with three teachers who serve students from marginalized communities and whose primary pedagogy is inquiry. During the research, I sought to deeply understand their motives, beliefs about learning, pedagogical choices, and the impact they have on students. In this chapter, I look deeply at what inquiry is both as a process and pedagogy. Further, I examine the historical and cultural roots for inquiry in the United States, the equity issues that limit access to inquiry, and the impact lack of access has on students who face multiple challenges to success. Finally, I examine inquiry in relation to preparation of our students for democracy, living in a global environment, future careers, and continued education. In the next section, I examine the complex definitions of inquiry and its historical roots.

What Is Inquiry?

Throughout the research, multiple definitions and examples of inquiry are evident. But, a strong core of common elements is also present in the research as well: critical thinking, real-world problem solving, a process for students to ask and follow their own line of questions, working collaboratively with others, and demonstration of effective communication skills (Savery, 2006; Saye & Brush, 2006; Song & Looi, 2012). Other researchers emphasize additional and complementary key components of inquiry-based learning experiences: organization of content around the driving question, authentic/real life learning experiences,

students' as owner of the learning experience in a discovery process, performance assessments connected to authentic learning experiences, and teachers as facilitators, and supporters of learning as opposed to directors of the learning (Bruner, 1961; Buchanan et al., 2016; Dewey, 1938). Inquiry learning experiences, in essence, provide students with an opportunity to learn and grow in ways that are aligned with the ways we know youth and adults learn and the ways that, as humans, we operate on a daily basis in our work/school, our community and our family (Dewey, 1938).

In this section, I describe the historical roots and pedagogical theory that support inquiry as a primary mode of instruction. Then I analyze the key components of inquiry-driven instruction and how deep learning is connected to those historical roots. Further, I look deeply at doing this work in experimental learning as the foundation for inquiry-driven classroom. Finally, I examine how Bruner and Vygotsky's work in cognitive development supports multiple models of teaching.

Historical and Pedagogical Roots of Inquiry

The debate over how to teach is well articulated in the "grammar of schooling" (Tyack & Cuban, 1995). The standard operating procedures of the classroom include what we would see when we observe typical classrooms: teacher standing in front for lecture and presentation (or through a power-point), student silence (compliance), questions from teacher to students – usually low-level that ask for factual information or basic application, protocols that support classroom order such as hand-raising for students to be called on, desks in rows so that the students do not actually interact with each other, weekly quizzes and periodic tests (Tyack & Cuban, 1995). This pedagogy is occasionally interrupted by a science experiment or brief simulation, but, in general, students are not asked to inquire, hypothesize, or generate questions

and ideas. Cuban (2013) describes how this type of pedagogy has a constancy that has been uninterrupted despite multiple examples of advocacy for more progressive education that includes real-world experiences (Dewey, 1938), discovery learning (Bruner, 1961), higher order thinking (Pogrow, 2005), and student interaction (Vygotsky, 1978). The theories about learning and pedagogical practices contributed to the development of inquiry as model of teaching (Joyce, Weil, & Calhoun, 2015). Finally, the content of an inquiry is, as Dewey says, the important responsibility of the more mature learner; inquiry is not just a process, but a way to engage in rigorous and thought-provoking subjects (Kliebard, 1995).

Early progressive education. Progressive educators in the United States have long sought to focus student learning on inquiry and deeper learning, moving away from an efficiency model of learning based on a top-down, teacher-driven classroom. Chicago was the epicenter for the early progressives and in the late 1800s, Frances Wayland Parker, promoted the idea that schools must go beyond teaching the basics. While the Principal of Cook County Normal School, Parker offered a more holistic program for students that included art, music and drama (Goldstein, 2014). This idea broke the paradigm of a basic education comprised of reading, writing, and other skills needed to be a successful worker. Art, music, and drama were keys to creative thinking that built cognitive, social, and emotional skills. In Parker's paradigm, students were no longer mere future workers to serve the elite ruling class but rather individuals with great potential for schools and teachers to tap into (Goldstein, 2014).

Frances Wayland Parker's work laid the foundation for the development of the progressive movement in Chicago and the work of John Dewey as well as lesser-known, but equally important, progressive educators like Ella Flagg Young. In the early 1900s Ella Flagg Young became the Chicago Superintendent of Schools. Young, like many progressive educators,

believed that learning experiences should tap into the natural curiosity of students. For that education approach to become actualized, teachers needed more power over their classrooms and what is taught to students. Young believed that the education system as a whole needed to be more democratic and that the democracy within the system would not only be a model for students. Further, students would be active members and participants within a democratic system and would be learning about democracy through their participation (Goldstein, 2014).

Young studied with John Dewey at the University of Chicago, and eventually Young would work at the University of Chicago Lab School that Dewey founded. The Lab School, as it was known, would provide a model for progressive education. As Goldstein (2014) writes in *Teacher Wars*, "[t]he Lab School's curriculum was based on an observation from child psychology…children's games from cops and robbers to playing house, often imitated the professional and domestic occupations of the adults around them" (p. 82). Dewey's work was anchored in observational science of how children actually behave and learn in real life.

While the Lab School provided a model for progressive educators in experiential learning, inquiry, and deeper learning, the school primarily served students from white middle and upper middle-class families (Goldstein, 2014). More than 120 years since the founding of the Lab School, progressive education, anchored in Dewey's theories about learning and teaching, continues to suffer from an equity and access issue as schools that provide a progressive programs primarily serve white, middle and upper middle class students(Mehta, 2014; Truong, 2014).

Dewey's criteria of experience. Dewey's work in experiential learning and inquiry continue to provide foundation for progressive education today. Based on observational science of how children learn, Dewey constructed a model that taps into a child's innate curiosity and

provides opportunities for students to meaningfully engage with the world around them while at the same time learning how that world works. In order to more deeply understand what Dewey means by the experience, he provides for us to key principles.

The first principle is continuity of experience. In other words, the experience must live in other experiences or must be connected to other experiences. For example, Dewey discusses democracy as an experience that should anchor the school experience for students and teachers. Having that experience as young children not only prepares students to live in a larger democratic context, such as the community, state, nation, or world, it emphasizes that democracy should become a core part who they are and how they behave as humans (Dewey, 1938).

Dewey names interaction as the second principle of experience, which he describes as the interplay between inner and external conditions. Inner conditions represent what we as humans bring to the table in terms of our experiences and our ideas. The external conditions represent how external forces impact us and help us build our inner conditions. To deeply understand and interpret those external conditions, we must interrogate or question those external conditions if we are truly to be free as individuals and operate within a democratic system as well as make sense of external conditions (Dewey, 1938). Further, traditional education over-emphasizes the external conditions and tends to treat students as empty vessels that teachers fill with content for students to bank and use later (Freire, 2000). For Dewey, between both the external and inner conditions as students is critical if they are to learn and grow, and there must be is a balance between these conditions. That balance is achieved when students have the opportunity to ask questions, consider multiple perspectives, and critically analyze external conditions (Dewey, 1938).

That balance is animated in Bruner's theories of discovery learning. Bruner believed that students use prior knowledge to understand new ideas, facts, and situations. Inquiry, in the service of discovery learning, provides students with the foundation from which to build new knowledge and understandings and to interpret existing conditions. As a pedagogy, discovery learning encourages students to manipulate objects, perform experiments, and ask deep questions (Bruner, 1961). Those inner conditions that Dewey describes become the foundation for building new knowledge and developing new sets of questions to further explore external conditions (Bruner, 1961; Dewey, 1938).

Bruner's ideas on discovery learning paralleled his thinking about the way students learn and the way teachers deliver curriculum. Bruner (1960) believed that a child of any age could understand complex information and states that "we begin with the hypothesis that any subject can be taught effectively in some intellectually honest form to any child at any stage of development" (p. 33). As a result, Bruner developed what is called the spiraling curriculum that supported students grappling with complex ideas; teachers needed to introduce concepts in simplified forms for younger children. Students would then be exposed to those ideas or concepts multiple times throughout their years in school. Thus, students could build upon prior knowledge and develop more complex understandings of ideas and concepts as they develop cognitively (Bruner, 1960; Vygotsky, 1978).

Bruner and Vygotsky's theories about cognitive development, inquiry, and discovery learning, along with Dewey's theories concerning experiential learning and the importance of democracy within a learning context, have led the way to multiple models of teaching that are often described as inquiry-based learning or deeper learning. The models that flow from their work are inductive in nature; as a result, students have the opportunity to apply prior

understanding of ideas and concepts to new problems and issues while at the same time providing students with an opportunity to construct new understandings and propose solutions to existing problems. These models differ from direct instruction models of teaching and learning in significant ways. Students have greater control over the information as well as the process of learning while teachers tend to facilitate what happens in the classroom as opposed to presentations and lectures. While inquiry-based and the teacher-directed classrooms have long-term goals and require structure, particularly for choosing the academic task, the day-to-day activities of an inquiry-based classroom are less planned in key ways with more possibility for teachers and students to respond to student ideas, student direction, and needs (Joyce et al., 2015, Vella, 2008).

For this study, a deep understanding of the history of progressive education and the relationships that exist between progressive thinking and cognitive development is essential to understanding how to apply inquiry on a daily basis in a classroom. Further, deep understanding of the work helps us to understand how an inquiry process can be applied in any classroom with any students. Inquiry focuses on how we learn not who we are in terms of our race, gender, and/or socioeconomic background. In other words, inquiry is about learning. At the same time, the conceptual frames of learning remain merely theories until they are actually applied in the classroom. In order for these theories to become alive in any classroom, teachers must not only understand the practical application or the models of teaching that inquiry requires; they must believe strongly that the students in front of them can learn in this manner (Ellis, 1977; Hashey & Sarton, 2004; McDonald, 1996).

Next, I delve into research on teacher belief systems in terms of inquiry and the impact that has on student learning as well as instructional practice. I examine the role the professional

development has on supporting teachers as they develop a more complex understanding of inquiry and how it applies in the classroom. Finally, I look at the role that scaffolding plays in the development of teacher beliefs and practices as well as the impact that scaffolding has on supporting students as they operate in an inquiry-based system.

Inquiry and Teacher Perspectives: Beliefs and Practices

Next, I build upon the key assertion that inquiry-based learning as a model for teaching needs to be applied consistently. Strong inquiry teaching is dependent upon a complex teacher belief system that students learn best through an inquiry process and that inquiry, in and of itself, is a more natural process for how humans learn. Without that core set of beliefs about student learning and inquiry, inquiry-based instructional practices are meaningless. In other words, the practices must flow from the belief system (Audet & Jordan, 2005; Martinez & McGrath, 2014).

It's a belief thing. Previously, I have discussed common elements that one might find in an inquiry-based learning experience; however, they fail to capture the philosophical underpinnings of an inquiry-based learning system and the values that teachers hold about inquiry. At the heart of being an inquiry teacher is not the practices that one applies in the classroom, but rather deep beliefs about inquiry as a way of learning. The practices flow from those deep beliefs. In a meta-study, Buchanan et al. (2016) found that inquiry was based on common beliefs about learning and the learning process: student choice, a measure of student autonomy, and deeper learning experiences that lead to skills that are critical for success in the future. The application of inquiry in the classroom leads to solutions large and small problems. In the K-12 system, inquiry is a philosophy and belief system about learning and problem-solving that leads to a process for applying inquiry (Clyde & Hicks, 2008; Hewlett Foundation, 2013).

Song and Looi (2012) argue that "inquiry learning has its origins in the practices of scientific inquiry and focuses on posing questions, gathering and analyzing data, and constructing evidence-based explanations" (p. 132), all of which require teacher commitment to thinking about their work as co-learners. In considering the scientific method, inquiry is inextricably embedded and goes beyond a set of practices; rather, it is the process by which we come to understand the physical world – a large question and consideration for which there are no "answers". In fact, the question is a lifelong learning quest. While science seems to be the perfect vehicle for inquiry, most science classes in middle and high school tend to focus on learning about science or what a former colleague of mine called the literacy of science, and science becomes a vocabulary exercise, not an inquiry. For inquiry-based pedagogy to succeed, teachers have to be ready to change their thinking about teaching and learning, and not all are (Kerlin, 2012; Khale, Meece, & Scantlebury, 2000).

McDonald (1996) says teachers have to participate in an "unlearning agenda" as they navigate new ways of being in classrooms that go against the grain of what actually happens in schools. Despite our platitudes about committing to collaboration, inclusive instruction, open-mindedness and rigor, inquiry-based teaching requires a commitment. McDonald (1996) discusses a second belief about teaching that we need to challenge: "teaching is a form of telling…most schools tend to believe that telling and repeating what one has been told constitute the elemental relationship of schooling – defining the teacher's intellectual subordination to higher expertise even as it defines the student's intellectual subordination to the teacher" (p. 27). Inquiry upsets that belief and practice by providing an opportunity to ground content and complex concepts in real life situations in which the teacher is not the teller, but the co-inquirer (Audet & Jordan, 2005; Boykin & Noguera, 2011). Inquiry can be a pathway helping students

think and operate more like scientists, mathematicians, social scientists, artists, and community members. But it requires teachers have a belief in the power of student possibility and of their abilities to facilitate that learning (Gay, 2010; Joyce & Showers, 2002).

Inquiry is associated with project-based learning (PBL) as well as problem-based learning and problem-posing (Freire, 1970). In many ways' inquiry is seen as a fundamental component of PBL. The PBL framework offers teachers and students an opportunity and a structure for inquiry to happen. In other words, the PBL framework can provide a learner-centered approach in which students can conduct significant research driven by their own questions and applying their analysis to develop solutions to problems (Savery, 2006). The PBL framework assumes that students create products that reflect their learning in significant ways. It is in this sense, that inquiry demands a framework or structure in order to be effective. PBL seems to be one of the primary modes for organizing and delivering inquiry-based learning experiences (Noguera et al., 2015; Savery 2006; Saye & Brush, 2006), but it is certainly not the only way that students practice inquiry within the learning process. Problem-posing is the nuts and bolts of an inquiry-based classroom as the teacher and students are engaged in examining a problem and posing or hypothesizing responses. The teacher has to be ready to engage and facilitate generative learning.

Inquiry is seen as a part of what is becoming a growing movement in education around deeper learning. Within the conceptual framework of deeper learning, inquiry is seen as a core process for students to achieve depth over breadth in order to meet their academic goals (Dewey, 1938; Vygotsky, 1978). In a report on deeper learning, Noguera et al. (2015) describe inquiry-based pedagogy as central to preparing students for college and career. Specifically, they point

out that deeper learning and inquiry promote transferable skills such as critical thinking, problem solving, collaboration, and communication.

A hopeful story. As we learn more about the pedagogy of inquiry, we are coming to better understand what it takes for teachers to change their beliefs about learning and in turn their pedagogy (sometimes radically) in order to become an inquiry-based teacher and how that change impacts student learning and motivation. In 2007, at Crestwood Elementary School in Kentucky, a 5th grade teacher and a college professor came together to design and implement an inquiry-based learning experience for students. Clyde and Hicks (2008) describe it as "shifting from 'book-report-with-diorama' thinking to practicing strategies that adult social scientists use is a significant departure from school as we know it. Taking this next step required a leap of faith – in our students, ourselves, and the process" (Clyde & Hicks, 2008, p. 2). They describe the changes taking place in the learning as the inquiry process "transformed students and teachers alike into thoughtful researchers" (Clyde & Hicks, 2008, p. 3). Genuine inquiry requires that both students and teachers have autonomy so that they are not required to have curricular fidelity. The curriculum provided the opportunity for students in the Kentucky project to follow their own questions in the service of learning deeply about a problem or issues (Clyde & Hicks, 2008). The students anchored their inquiry on content that they could uncover in their own community, much like the Foxfire approach (Eliot, 1972). By localizing the issue, whether it is a global, national or state issue, students navigated the context that not only has relevance but one in which the problem-solving process becomes grounded in a reality that students can see and experience firsthand (Clyde & Hicks, 2008). The problem-solving process was anchored by a focus on formative assessments. Formative assessments provide students with continued feedback the lead back to their original questions and intended learning (Black & Wiliam, 1998).

Given that many teachers and administrators have fears or use the excuse that inquiry-based learning prevents students from meeting standards and from teaching literacy and mathematics, Clyde and Hicks (2008) were able to integrate Kentucky's learning standards. They discovered that literacy was everywhere and more meaningful to the students because they were invested in the research. They developed the curriculum with the common core standards in mind and asked students to analyze content, think critically, and problem-solve (Clyde & Hicks, 2008). The common core provides opportunities for teachers to align inquiry-based units with high-level standards. To fully meet the standards, Noguera et al. (2015) discuss how schools need to provide regular opportunities for students to practice high-level skills such as "solving complex problems, conducting research, communicating in multiple forms, and using new technologies to find, analyze, and evaluate information" (p. 1).

Professional Learning for Teachers: Scaffolding for Inquiry

In Kentucky, a study of science teachers focused on understanding the professional development needs of teachers in order to develop an inquiry-based pedagogy. The teachers participated in inquiry-based professional development and then applied their learning to their teaching. The study found that "open inquiry is more akin to the work of actual scientists. K-12 science teachers still need to maintain structure in the classroom to move learning toward required standards but should do this in the manner of a guide not a lecturer" (Kerlin, 2012, p. 76). When shifting to the guide on the side instead of the sage on the stage, teachers do lose autonomy and become co-learners who are open to student questions and dialogue (Dewey, 1938; Vella, 2008). However, for some teachers, that new role presents an uncomfortable shift; obviously, the shift requires practice and support. Kerlin (2012) found that as "science teachers in the PD program moved away from cookbook lab activities and teacher directed instruction to

engaging students in inquiry-based activities" (p. 83), they became more comfortable with ambiguity.

Inquiry as a model that replicates real life experiences needs a certain amount of scaffolding within a K-12 classroom (Audet & Jordan, 2005). Some of that scaffolding is dependent upon the developmental needs of students at particular stages in their adolescents. Some of that scaffolding is based on the kind of learning experiences students have had throughout their career as students (Taylor Jaffee, 2016). Generally speaking, three approaches to inquiry-based learning seemed to have emerged: structured inquiry, guided inquiry, and open inquiry (Song & Looi, 2012). The three forms of inquiry could be viewed as a continuum that begins with structured inquiry, in which the teacher still controls the content and the primary question that students are investigating. At the other end of the continuum, in an open inquiry situation, students not only develop questions, they drive the process for uncovering and understanding the content (Song & Looi, 2012). Open inquiry creates situations that support student efficacy and autonomy over their learning (Hammond, 2015; Truong, 2016). In one example, a teacher with whom I worked in Berkeley, California, tells a story about the first inquiry-based project that her students did. She controlled the process from start to finish. The next year, when she did the same project, she used a more open inquiry method. In a presentation to other teachers, she described her change as the realization that she had to have both the confidence in her students and in the inquiry process as much as her students needed to see themselves as researchers, innovators, and problem solvers.

Another concept of scaffolding that takes place within the pedagogy of inquiry is described as hard and soft scaffolding. Soft scaffolding is what we commonly see among experienced inquiry-based teachers and reflects a response to what teachers observe students

need in the moment; similar to a sighting, the teacher responds in a way that supports the student's inequity by asking the right level of factual, clarifying, or probing question (Saye & Brush, 2006; MacDonald, 1996). In order for soft scaffolding to work, teachers have to be attentive, know their students, and be comfortable with asking questions instead of telling to support students. Hard scaffolding is a series of static support systems and structures that are often pre-determined and pre-imposed upon the students (Saye & Brush, 2006). Hard scaffolding often occurs when teachers choose the content and the prior knowledge is often outside the prior knowledge base of the students. Teachers think this is helpful, but, indeed, it is often a reminder to students of what they do not know, instead of working from the inside out regarding what they do know and with what they are familiar to build their inquiry skills (Hammond, 2015; Saye & Brush, 2006; Song & Looi, 2012). Both hard and soft scaffolds provide teachers with an opportunity to respond to the needs of their students as they are building inquiry-based learning experiences. At the same time, if the goal is greater independence and ownership of the work by students, then it is important that hard scaffolds, as well as structured and guided inquiry, be seen as temporary (Buchanan et al., 2016; Saye & Brush, 2006). As students and their teachers develop skills in inquiry-based learning, the goal needs to drive toward more open inquiry for all students.

Open inquiry is what Buchanan et al. (2016) calls Student Driven Inquiry (SDI). SDI is characterized by more choice and autonomy for the students; each learning experience seeks to build social, emotional, and cognitive skills that better prepare students for future life. SDI provides students with the opportunity to build skills and experiences in creativity and innovation through problem-solving (Audet & Jordan, 2005; Buchanan et al., 2016).

The key assertion of this section is that inquiry-based learning, as a model for teaching and learning, needs to be applied consistently and is dependent upon a complex teacher belief system that students learn best through an inquiry process. For this particular study, teacher belief systems stand at the heart of what I examined in order to understand the observations and interviews that anchored the study. As a team, the three teachers were able to interrogate each other about their philosophical foundations concerning learning.

In the next section, I look closely at the research that outlines the relationship between inquiry and democracy. I examine how issues of equity, in an ethnically and culturally diverse country, demand inquiry-based learning for all members of our democracy.

Inquiry-Based Teaching: An Issue of Equity

Democracy and equity in the United States have always been aspirational goals and unfinished business. In a very real sense, one cannot exist without the other. For democracy to have any meaning at all, the democratic traditions and practices cannot be the exclusive purview of one group, White Americans, while people of color lack access to the systems and structures that ensure democracy (Hansen & James, 2015).

Democracy is not words on paper in our Constitution or a historical perspective about how this country began. We cannot celebrate the accomplishments of those early adopters of western democracy who fought for independence at the beginning of the country without acknowledging and deeply understanding the role that slavery and racism played in the founding of this country (Ladson-Billings, 2006). The same people who fought for liberty and freedom were slave-owners and bigots. The fight for equity has also not been a straight line of progress in our country but rather a complex struggle that has seen periods of progress as well as intense

periods of regression marked by exclusivity and racism. In our current political and social situation, we are clearly experiencing a period of regression and racism (Coates, 2017).

Clearly, our education system reflects both the tone and the outcomes of the current racial struggle (Alhumam, 2015). Racial justice and equity stand at the heart of the study. In this section, I discuss how students of color have been systematically denied access to student-driven inquiry and deeper learning. Our education system has developed what amounts to a tracking system that is both historical and current (Alhumam, 2015); that systemic constant limits the opportunities for many students of color to have access to the full educational opportunities (Boykin & Noguera, 2011; Darling-Hammond, 1997; Oakes, 1985).

I closely examine the core equity issue associated with inquiry-based learning, access for all students. I analyze the role that public policy plays in limiting access and how well-meaning policies like NCLB and ESSA have deepened equity issues. Labaree (2008) describes how the standards movement was intended to level the playing field for all students, but, with the resulting push for accountability in the early 2000s, the standards movement has actually widened the chasm between white students and students of color to access to high quality academic programming. Throughout this section, I offer glimmers of hope and alternatives that exist to remedy the complex equity issues. In describing equity as an access issue, I am fully aware that fully addressing equity is far more complex than offering programs or inquiry-based strategies within a classroom or school. Issues of equity that surround inquiry-based pedagogy reach deep into our belief systems about who our students are, what they bring to the table, and what educators, school leaders, district leaders, and policy-makers believe about the capabilities and needs of students who face multiple challenges to success (Mehta, 2014; Oakes, 1985; Truong, 2014).

Inquiry: A Tale of Two Worlds

Deeper learning outcomes that include critical thinking, communicating, collaborating, and more are the tools of success in our culture, and it is our responsibility to ensure that underserved students have access to deeper learning experiences (Hewlett Foundation, 2013). Inquiry teaching represents a path to deeper learning, and deeper learning is inextricably linked to educational equity. In this way, issues of class and race are central to any conversation about bringing deeper learning to more and more students across the country (Truong, 2014). The choice of what to do about widening gaps is not to focus on improving test scores as an end goal, but making students college, career, and community ready in a variety of ways that inquiry and student-driven pedagogy and curriculum can do.

Consequences of accountability. An unintended consequence of high-stakes testing is inadvertently reinforcing long-standing tracking systems based on assumptions about differential ability and the future life roles of students. As a result of belief systems and the practices that support them, in many schools, especially those serving low-income students, the curriculum has been narrowed to mirror the tests (Anderson, Mungal, Pinit, Scott, & Thomson, 2013; Boykin & Noguera, 2011). Schools and districts have used test scores to limit access to a deeper and richer the curriculum for students of color and low-income students, who have instead been relegated to remedial, rote- oriented, and often scripted courses of study (Noguera et al., 2015).

One consequence of NCLB and the test-driven pedagogy that emerged as a public policy has been segregation of opportunities based on race, income level, and geographic location. As I discussed earlier, many teachers have been afraid to employ an inquiry-based pedagogy because they fail to see the direct connections to the test (Mehta, 2014; Noguera et al., 2015; Saye & Brush, 2016; Truong, 2014). As Noguera et al. (2015) point out, “test scores have been used to

allocate differential access to the curriculum, with the result that students of color and low income students have often been denied access to a thinking curriculum and instead relegated to remedial, road to oriented, in often scripted courses of study" (p. 4). For African American students, being relegated to this kind of curriculum is not new, and it is a kind of pedagogy that many in the African American community have fought for a very long time. While historically, whites controlling the education system have used this kind of segregation to keep black Americans in more subservient positions. In the modern-day reform, the promoters of the test-driven pedagogy are using the language of civil rights to justify a pedagogy that continues to segregate and deepen the gulf between haves and have-nots (Noguera et al., 2015).

Truong (2016) describes the inequity: "middle- and upper-income families are rarely, if ever, asked to choose between strong skills or strong projects. They do not have to pick between developing core reading and math skills and developing strong critical thinking and communication skills. They rightly expect their children to have access to both" (Truong, 2016, p. 1). Access is at the heart of equity, and, clearly, many of our students do not have access to the type of learning environments that will help them build the skills and dispositions as innovators, problem solvers, and creative thinkers. Yet, these are the very skills and dispositions that our students need to succeed in their further education, their future careers, and their civic life (Hammond, 2015; Hollie, 2012; Ladson-Billings, 1995).

Over years since the passage of the No Child Left Behind Act (NCLB), schools serving relatively affluent students have continued to offer rigorous instruction (particularly in their honors, Advanced Placement, and college prep courses), and a wide course selection, including world languages, science, history, music, and the arts. In contrast, schools serving students facing multiple challenges to success are already under-resourced and have struggled to maintain

a broad curriculum in the face of budget cuts. Many have shifted significant amounts of classroom time to test preparation in an effort to boost student performance on high-stakes exams the arts curriculum that encourages creativity and imagination necessary for inquiry has been pruned from most schools; and science labs are poorly funded (Noriega et al., 2015; Truong, 2016).

Hope. In the African American community, there is a long tradition of support for deeper learning. Since the days when W.E.B. DuBois and his colleagues in the NAACP argued for a liberal arts curriculum for African American students, civil rights groups have fought against the lower-level, skills-based curriculum that society has typically reserved for students of color (Goldstein, 2014). Only in the last decade have accountability hawks cloaked arguments for test-based reform in civil rights language, even as the effects of those reforms have deepened the gulf between the curricula offered to the haves and the have-nots (Emdin, 2016; Noriega et al., 2015).

Gia Truong (2016), in writing about students at Envision Schools, believes that deeper learning is "inextricably linked to education equity". Truong goes on to describe how the outcomes of a deeper learning pedagogy lead to success in college and career. Truong and others have noted that inquiry is a process that often times white middle-class students experience at different points in their career. Yet, for students of color who tend to live in urban more high poverty communities, the pedagogy of inquiry is rarely applied (Buchanan et al., 2016; Nieto, 2013; Noguera et al., 2015; Truong, 2014; Zhao, 2012). Truong and the Envision schools offer us a hopeful reminder that deeper learning can be implemented and successful with all students, regardless of race and socio-economic status.

Culture and its connection to equity and inquiry. The US education system has been built to serve an elite ruling class that is dominated by white Americans. The grammar of

schooling (Tyack & Cuban, 1995) supports a two-tiered system – one for the ruling class and one for students were there to serve the class. In order to change the dynamic of the system, it is essential that we offer deeper learning opportunities to all students and at the same time support students with learning experiences that are reflective of their culture. Emdin (2016) terms this Pentecostal pedagogy and describes how it connects with the urban youth of color. The relationship of Pentecostal pedagogy to inquiry learning bears some consideration. Emdin presses the reader to understand that, to know our youth and their culture, we must listen differently and have different experiences so that our pedagogy can speak to youth and their culture not just in terms of content but in terms of practice. Pentecostal pedagogy brings the urban educator to church or brings the church to the urban educator. It requires being a student of the ways pastors and congregants conduct a highly charged exchange, but not necessarily of the faith or religious practice of the church members. It requires the educator to study the contexts of the gathering and the effects of the contexts on those who are together in that space. For teachers, in a broader sense, it requires understanding the culture and community of your students (Nieto, 2013).

As we have discussed earlier, it is somewhat hard to pin down what inquiry-based learning actually looks like in a learning situation, but Pentecostal pedagogy puts the teacher in the position of learner first. It is essential, similar to an inquiry-based system, that teachers deeply understand the cultural backgrounds of their students and, in particular, the many ways that people within the culture learn and grow (Nieto, 2013; Wlodkowski & Ginsberg, 1995). The principles of inquiry can be applied and adapted to multiple cultural settings while the specific practices can more tightly reflect the culture of the community. Designing a pedagogy that is closer to the community implies greater local control and in particular greater opportunities for

teachers to design curriculum that meets the needs of their students, and this plays a role in preserving a key purpose of schooling: preparing citizens in a democratic society (Labaree, 2008).

Democratic Citizenship: The Role of Inquiry

As democracy becomes more fragile in the US and in many parts of the world, we are, at the same time, becoming more interconnected through technology, commerce, and shared problems, such as climate change that knows no borders (Gaudelli, 2016; Harshman, 2016; Zhao, 2012). Thus, students must have an opportunity to engage in a pedagogy that builds the knowledge, skills, and dispositions necessary for democracy to thrive in a global environment. Students need the problem-solving capacity and dispositions to work across multiple cultures in the service of solving some of our most intractable global issues (Hewlett Foundation, 2013). Next, I discuss the relationship between the skills students acquire in a student-driven inquiry system and how those skills translate to democratic citizenship. I discuss how the relationship between inquiry and the competencies needed to succeed and thrive in an interconnected global environment. Finally, I examine how an inquiry-based pedagogy helps prepare students in a global and interconnected environment.

The role of inquiry to prepare citizens for a democracy is a schooling goal largely lost in the move to NCLB and the current neoliberal view of education reform (Noddings, 2005). The neoliberal view seems to be focused more centrally on control and on testing and accountability, and, to date, that goal has largely been unachievable (Anderson et al., 2013; Kantor & Lowe, 2016; Labaree, 2008). Indeed, the result of NCLB has narrowed the scope of learning. Young Zhao (2012) claims that “a national common curriculum, enforced through high-stakes common assessment, is just the poison that kills creativity, homogenizes talents, and reduces individuality

through an exclusive focus on the prescribed content and teaching-to-the-test by schools and teachers, as we have already seen with NCLB" (p. 20).

In order to prepare students to be responsible democratic citizens and to become stewards of democracy, they must have access to a pedagogy that engages them in democracy and their community. Dewey (1938) described the pedagogy of the progressive movement, in the early to mid 20th century, as being "more in accord with the Democratic ideal to which our people is committed…". He contrasted progressive education with a more traditional education by describing traditional education as autocratic. Today's test-driven education, championed by a neoliberal reform movement, is based on autocratic model that stretches from the classroom all the way to the legislature (Anderson et al., 2013).

The skills and dispositions that students need to be successful as part of a democratic system, are much more aligned with inquiry-based learning. There are significant skills that students need to be participating, active members of a democracy. Those include critical thinking, collaboration, communication, and problem-solving. Many researchers have already identified those skills as being at the heart of an inquiry-based pedagogy (Buchanan et al., 2016; Noguera et al., 2015; Truong, 2014). Noguera et al. (2015) discuss how inquiry-based pedagogy promote "transferable skills such as critical thinking, problem solving, collaboration, and communication". These transferable skills are deeper and more critical for us both as individuals and are common experiences in our communities. Students build these skills, along with their skills in literacy and mathematics, through projects that are authentic to the work that students would do outside of school (Noddings, 2005). More authentic work provides students not only the opportunity to learn the skills required to operate in a community, but with more fully understanding the dispositions necessary for a community to solve problems collaboratively.

A healthy democracy requires much more from students than merely preparing them for a particular role or job. We know that the test-based pedagogy of the neoliberal reform narrows the opportunities for economically marginalized students and students of color and, in the long run, could exclude those communities from deeply participating in democracy (Noguera, 2015; Truong, 2014). An education that focuses on strengthening democracy demands much more from schools and graduates. That system "wants graduates who exhibit sound character, have a social conscience, think critically, are willing to make commitments, and are aware of global problems" (Noddings, 2005).

Therefore, student learning experiences be anchored in the time period in which they occur – meaning that inquiry teaching and learning can support the current era in which global insecurity due to climate change and conflicts needs new solutions. Dewey (1938) describes this as "extracting at each present time the full meaning of each present experience are we prepared for doing the same thing in the future" (p. 49). Today, globalization has become an essential condition of our lives. Technology and modern travel make the globe smaller and bring us all closer together in real terms. At the same time, migration, due to war or economic opportunity, poverty, or academic attainment has created diverse and vibrant global communities. In the US, global communities exist in our cities, suburbs, and our rural communities (Zhao, 2012). That is not to say that there have not been challenges and, in many ways, the recent election of Donald Trump exemplifies the challenges and fears that many people have living in a global community.

Global competencies. Zhao (2012) believes that "for America's education to rise to the challenges of globalization, we need to further cultivate creativity and diversity, capitalize on our traditional strengths, and locate ourselves within a global context" (p. 21). The cultivation of both creativity and diversity can best happen within the learning experiences that we provide

through formal education. But under our current paradigm of a test-driven system, the kind of learning experiences that cultivate creativity and diversity are rarely offered in schools in our most diverse communities.

In recent years, global education has begun to move from learning about people and cultures across the globe as well as learning about globalization and the challenges the globalization presents toward a pedagogy that includes inquiry as well as taking action in the service a problem-solving. Problem-solving and action-taking are at the heart of what many are calling global competence education or global citizenship education. Gaudelli (2016) describes this action taking as being fundamentally different from our notions of community service and focused on "what it means to work in solidarity with others globally as opposed to working for charity" (p. 56). The notion of working in solidarity with others aligns with an inquiry-based process in which students focus their learning experiences on real-life problems. In that way, they can fully engage in problem-solving. Gaudelli (2016) uses an example of how a non-governmental organization (NGO), Darpali, in Mumbai, India supports students to develop the skills and dispositions for global citizenship. "The intention of Darpali is that as students engage in social inquiry…they will not only learn about global issues but will develop dispositions and skills such as self-regulation, problem solving, inquiring and community building" (Gaudelli, 2016, p. 72). In essence, learning through the experience and building skills through the experience requires that teachers design learning experiences that challenge students to engage in meaningful, and authentic issues/problems and provide support for students as they engage in an inquiry process (Harshman, 2016).

In order for formal education to be relevant and successful in the 21st century, teachers need to acknowledge and deeply understand the external factors that drive our present-day world.

In so doing, we come to understand points of tension that currently exist: Nationalism v. globalization; individualism v. communitarianism; education for deeper learning v. training for fulfilling a role. While not trying to answer all the tension points, the study seeks to articulate a focus on how we learn and move beyond the tension points through an education system that honors all students abilities to think critically, problem solve, and serve as critical citizens in a democratic society.

Summary

Two large areas of research frame the project. The first focuses on the nature of inquiry and how inquiry plays itself out in schools and classrooms. That research provides us with a solid foundation on the history of progressive education and how student-driven inquiry situates itself within a Dewey's framework of experiential learning. An understanding of the history of progressive education is essential to understanding student-driven inquiry and its evolution over time. But it leaves me with a critical question: Why has progressive education been relegated to a sidebar or an anomaly in the history of education and not the primary mode of education for all students?

Since 1983, public policy has created a paradigm for learning based on rather and market-driven responses to defining the nation. The standards movement, backed by textbook and testing companies, helped to give rise to a well-meaning, but misplaced accountability movement. Instead, testing, which maintained its status as the dominant form of assessment of learning throughout the modern history of education, has replicated the ideals, structures, and systems of an industrial America. However, in post-industrial times, the testing culture of education has demonstrated its worthiness by creating a system based on so-called efficiency and objectivity, harkening back to Frederick Taylor's efficiency model of the of the 1920s

(Goldstein, 2014). While the paradigm of efficiency and objectivity is more myth than reality, the outcome of the education system has given the ruling class an opportunity to segregate both housing and educational opportunities based on gender, racism, and classism (Goldstein, 2014; Tyack & Cuban, 1995). Our education system has thrived on bias and oppression.

The second area of literature prompts us to think about education from a different perspective, moving away from an industrial/efficiency model and toward a model that is more reflective of democracy and equity. The literature helps us to imagine a model based on human relations and the dynamic nature of our current world. The literature prompts us to look carefully at a world in which national boundaries mean less. In our modern world, technology connects people across borders and cultures, and ideas move around the world at a pace never seen before by humans. And yet, democracies throughout the world are fragile, and equity is a core problem for millions of American students and their families. Issues of access and equity inhibit our ability to provide meaningful and deep education to all students. Next I discuss my research on inquiry-based learning and link back to the research questions.

The literature review was designed to provide a foundation for an ethnographic research study. The literature provided definitions of what an inquiry-based pedagogy is and its historical roots. I was able to demonstrate some accepted common elements of inquiry along with the complexity of implementing an inquiry-based system. This review demonstrates how inquiry-based practices operates at the margins and in the United States has never become an accepted pedagogical model by the education establishment. Finally, I looked at the deep equity issues that exist in terms of access to inquiry-based practices. The equity issues mirror the racial disparities and bias that exist across the social spectrum.

In this ethnographic study, I looked deeply at how an inquiry-based pedagogy plays out in the classrooms of the three teachers, as part of a collaborative research team designed to uncover the philosophy and pedagogy behind inquiry-based learning. The following questions guided the research.

1. To what extent do teachers develop the philosophical foundations and pedagogical capacity to engage in inquiry as a consistent model of teaching with students who face multiple challenges to academic success?
2. To what extent do the philosophical and pedagogical dispositions transfer into consistent instructional practices?
3. How do we (teachers and researcher) co-construct a theory of teaching that addresses philosophical, pedagogical and instructional foundations of inquiry as a key practice?
4. To what extent will experienced inquiry-based teachers interrogate each other to improve their practice?
5. To what extent can and do teachers construct inquiry experiences that gradually release responsibility for learning to students?
6. What does that model look like over time?

In the next chapter, I provide a broader context for the research including the context for each of the three teachers. I analyze the philosophy and pedagogy of the teachers who consistently use those practices as a way to help students deepen their knowledge and understand the world around them. I describe in detail the ethnographic research methodologies that will be employed in order to more deeply understand inquiry-based pedagogy from inside the classroom.

CHAPTER 3: RESEARCH DESIGN AND CONTEXT

Ninety students warily got off the bus at the base camp inside Rocky Mountain National Park. They were the inaugural 9th grade class of Mapleton Expeditionary School of the Arts (MESA). Eleven nervous Outward Bound instructors, the school principal and I were waiting for them and their six teachers as they arrived. It was a cool Monday morning and for most of the students, even though they lived in Denver, it was the first time that they had actually been in the mountains. They unloaded their equipment, almost all of which, down to socks and boots, were donated by REI.

They would spend two days at the base camp going through an intensive series of team-building and preparation activities followed by three days in the mountains. They would follow a typical Outward Bound pattern where early on the instructors would lead, as time goes on students would take over the leadership, a solo activity and then a group celebration when they return to the base camp.

It was an intense and powerful week for the 15 and 16-year-old students. None of them have had any experience in the woods. They struggled over the hardships of surviving in the woods, and more than a few tears were shed during the week. But they persevered and left the base camp on Friday afternoon full of pride and united as a group to support each other.

Their prior experience in school had not been good. Before coming to MESA, they had been in schools that practiced a pedagogy of testing and compliance. Many of the students described coming to MESA with a chip on their shoulder about schooling.

About 55% of the students were female and the vast majority of students were Latinx, many of whom were undocumented. Less than 20% of the students would come to Mesa reading and performing in math at grade level.

The students would defy the odds and four years later more than 90% of them would graduate and enroll in some sort of post-secondary school.

At graduation, each student was given a minute to talk and many of the students talked about their experience in the mountains that first year. Many described the experience as turning point in their lives, a place where they found themselves and they found community. One student talked about how his journey in school was supported by the friends he made during the Outward Bound trip. For many of the Mesa students, those five days helped to change their lives.

Introduction to the Research

The study focused on understanding, documenting, and co-constructing a deep understanding of the instructional practices that anchor an inquiry-based learning culture capable of engaging students from marginalized communities. In the study, I uncover the philosophy, pedagogy, and diversity of practices of three teachers who have been identified as successful inquiry-based teachers of systemically disenfranchised students. Various models and frameworks, used in a limited number of schools, successfully engage students in an inquiry-based pedagogy and can be used in schools that serve students who face multiple challenges to success. The three teachers who participated, in the study -- Denise Huey, Megan Hall and Andy Snyder -- teach in schools committed to inquiry-based learning and teaching that employ a common instructional model across the school. All three schools serve a highly diverse population of students, many of whom represent marginalized communities

In considering the research design of the study, I was looking for a research design that would supported the focus on three practicing teachers and deeply understanding their histories as learners and teachers, their motivations for their pedagogical practices, and how their teaching philosophy aligned with their instructional practices. After much consideration and reflection on

my positionality to each of their contexts, I decided that an ethnography was best suited for the goals of the study.

An ethnographic study allowed me to unpack the complexity of an inquiry-based learning classroom of three teachers in three different schools within three different communities (Geertz, 1973). Throughout the fifteen months of the study, I sought to understand the complexity of inquiry as a learning system and the role that students play in this complex process (Geertz, 1973; Schoenfeld, 1999). The ethnographic methodological approach supported the needs of the study to uncover the complexity of an inquiry-based pedagogy. In that vein, the study employed a qualitative methodology in which I built a more complex and holistic understanding of a situation in context (Creswell, 1998). The ethnographic methodology provided an opportunity to examine the microscopic aspects of inquiry-based teaching and learning that encompassed a larger pedagogical framework (Geertz, 1973). As Van Maanen (1979) points out, ethnography allows us to "uncover and explicate the ways in which people in particular work settings come to understand, account for, take action and otherwise manage their day-to-day situation" (p. 540). To fully understand the complexity of an inquiry-based pedagogy, I observed and reflected with thoughtful inquiry-based practitioners, talking and writing about their daily operations and interactions with students.

In the following sections, I describe the methodology for this project and why I selected this research methodology in relation to the context of the project. I outline again the focus of practice and the research design, including the selection of participants, phases of research, data collection tools and data analysis methods. I conclude this chapter with a reflection on the possibilities and limitations of this study.

Focus of Practice

The broader context for the qualitative study is the classroom. In particular, I focused attention on classrooms that serve students who face multiple challenges for academic success. Three teachers from three different schools employing three different inquiry-based models were selected to participate in study. I began with the theory that a group of experienced teachers can come together and (a) identify core principles around inquiry-based pedagogy; (b) identify classroom practices that align with those principles; (c) reflect on those core principles; and (d) interrogate and support each other as they build upon their experience. By engaging in these activities, they can improve their instructional practice, re-articulate their core principles in a way that builds upon the complexity of inquiry-based learning experiences, and make their practices transparent and useful to others.

I collaborated with this team of teachers in order to collect evidence that documented the key inquiry-based pedagogical principles that they operate from and the practices that flowed from the principles. I collaborated with the group to document their growth as experienced teachers joined together to learn with and from each other. To enable collaborative learning, I employed a research learning exchange process (RLE). The RLE is a democratic learning forum that grew out of the Community Learning Exchange (CLE) process (Guajardo, Guajardo, Janson, & Militello, 2016). CLEs offer processes for bringing groups of people together to draw upon the collective wisdom and the individual expertise that each person brings to the group. In this particular case, the team was a group of four persons collectively engaged in understanding teaching and learning.

The RLE makes use of many pedagogies found in a CLE, yet recognizes that ,in the context of the study, the three teachers and I did not share a common geographic community –

although we shared a principle-based community of commitment to inquiry-based teaching. To account for our physical distance from one another, we met three times virtually throughout the two research phases over fifteen months. The meetings were guided by the five CLE Axioms: (1) learning as leadership and action, (2) a focus on assets and hopes, (3) encouragement for crossing borders, (4) uplifting local knowledge ,and (5) acknowledging both action and dialogue as critical for relationships and pedagogy (Guajardo et al., 2016). As such, during the team meetings, the three teachers told their stories as learners and teachers, talked about their beliefs, and shared stories from the classroom that revealed their beliefs about learning and pedagogy.

Another overarching value espoused by the originators of the CLE is the importance of place (Guajardo et al., 2016). The three different schools represented by the participants of the research project provided an important context for this study. The three schools represented were Open World Learning (OWL) in St. Paul, Minnesota, Impact Academy in Hayward, California and Harvest Collegiate High School in New York City, New York. The three schools share a focus on inquiry and the commitment to serving students and families who face multiple challenges to success, yet the schools differ in their models and approaches. In addition to the local school context, district, state, and national policy play an important role in student's experiences within each classroom (Elmore, 2005).

The fishbone diagram, Figure 1 in Chapter 1, provided an analysis tool and, more broadly, for inquiry-based pedagogy among those serving marginalized communities. In Chapter 2, I discussed how public policy around accountability and achievement has limited access to high quality, inquiry-driven, learning experiences for students from marginalized communities (Mehta, 2014; Noguera et al., 2015; Truong, 2014). Building on this, the fishbone diagram points to the direct impact that public policy plays on the classroom instruction and the experiences of

students. The fishbone figure in Chapter 1 demonstrates how even well-meaning public policy may build upon systemic racism and perpetuate large opportunity gaps between students of color and white students. Yet, in addition to identifying challenges, before going into this study, I realized that the assets for the three teachers in their schools at the macro level (national and state) and meso level (local and district) impacted their ability to deliver an inquiry-based pedagogy. Assets were present at the school level (micro), not least of which were their ability to control many of the existing challenges. As a researcher, the fishbone diagram helped me understand the locus of control for both the teachers and their schools.

The design of the study was carefully developed in order to collect data relevant to an ethnographic study. In the next section, I outline specific aspects of the research design, collection of data, and the analysis of the data.

Research Design

The study employed an ethnographic research design intended to generate 'thick descriptions' of each teacher and their pedagogy within the context of their school culture and inquiry-based pedagogy (Geertz, 1973). The ethnographic design allowed me to more deeply understand what nourishes and inspires the participating teachers toward an inquiry-based pedagogy. I focused on the academic and cognitive thinking that supported their practices and the emotional drivers of their work.

Within the context of the study, the team of three teachers not only described their work but used their knowledge of each other and their work to interrogate and push each other to improve upon their existing practices. In other words, the study itself provided ample opportunities for each member of the team to develop their practices by engaging in deep dialogue with each other using artifacts and stories from their teaching. Applying an inquiry-

based model requires both a studied understanding of the practice as well as an understanding of our own journey as learners. This realization informed the research questions that framed the study. The questions attempted to capture the complexity of an inquiry-based practice as a personal journey, a pedagogy, and a set of complex practices. Further, the research questions aimed to focus on a significant equity and access issue for many students from low income communities and students of color.

Research Questions

The research questions are designed to support an understanding of the philosophical foundations of teachers whose primary pedagogy is inquiry-based learning for students from marginalized communities. Further, the study sought to understand how that philosophy played out on a daily basis through classroom rituals, rules, and practice. The design of the study applied qualitative methods that aligned with the main research question and corresponding sub-questions I set out to answer:

1. To what extent do teachers develop the philosophical foundations and pedagogical capacity to engage in inquiry as a consistent model of teaching with students who face multiple challenges to academic success?
2. To what extent do the philosophical and pedagogical dispositions transfer into consistent instructional practices?
3. How do we (teachers and researcher) co-construct a theory of teaching that addresses philosophical, pedagogical and instructional foundations of inquiry as a key practice?
4. To what extent will experienced inquiry-based teachers interrogate each other to improve their practice?

5. To what extent can and do teachers construct inquiry experiences that gradually release responsibility for learning to students?
6. What does that model look like over time?
7. How does an inquiry-based classroom change the role that teachers play in the classroom?

The research questions led to the development of multiple forms of data collection. Table 1 details the ways in which the research questions guided data collection.

We revisited our definition of an inquiry-based teacher from Chapter 1. Based on the external research and the research from the ethnography, an inquiry-based teacher designs student learning around key questions that connect students' lives to authentic real-life experiences. Inquiry-based teachers consistently facilitate learning experiences that build student skills of critical thinking, problem-solving, independent research based on students' questions, and student collaboration. Further, inquiry-based teachers intentionally connect learning theory to daily practice and use knowledge gained through their relationships with students to guide them. Next, I discuss the participants engaged in the study

Participants

I carefully selected participants for the study. Because inquiry is a dynamic process that does not look the same in each classroom, I first began to examine models of inquiry that were employed by organizations that provided either school-wide frameworks and/or professional development to support the teachers in that school. Early in the process, I focused the search for participating teachers on three models: *The Coalition of Essential Schools (CES), Envision Schools* and *Expeditionary Learning (EL)*. I had personal connections to all three models in my career as a teacher, coach and administrator. I became familiar with the CES model early in my

Table 1

Linking Data Collection with Research Questions

Sub-Question	Data Source
To what extent do the philosophical and pedagogical dispositions transfer into consistent instructional practices?	Team meetings Interviews Classroom observations Researcher memos
How do we (teachers and researcher) co-construct a theory of teaching that addresses philosophical, pedagogical and instructional foundations of inquiry as a key practice?	Team meetings Interviews Participant memo Researcher memos
To what extent will experienced inquiry-based teachers interrogate each other to improve their practice?	Team meeting Participant memo
To what extent can and do teachers construct inquiry experiences that gradually release responsibility for learning to students?	Classroom Observations Interviews
What does that model look like over time?	Classroom Observations Interviews Team meetings Leader interviews
How does an inquiry-based classroom change the role that teachers play in the classroom?	Interviews Classroom Observations Team meeting
To what extent can I serve the dual role of leadership and collaborator in support of teachers to accomplish the outcomes we co-construct for an inquiry-based classroom?	RLE Interviews Memos Artifact analysis

teaching career in a workshop in 1995. I knew personally of the Envision model and organization and had worked with their current Chief Executive Officer, Gia Truong, on several projects from 2006 – 2010. Still, I had the strongest knowledge of and connections to Expeditionary Learning, having been employed by the organization as a School Designer (school and national level coach) from 2004-2009. Table 2 provides basic information about each of the three participants in the study. As throughout the study, we became close colleagues and I will refer to each participant throughout this dissertation by their first names.

Megan Hall. Megan teaches at Open World Learning (OWL) in St. Paul, Minnesota. The school has a rich history both locally and nationally as one of the first open schools in the country and, for years, was known as St. Paul Open School. I knew about Megan before I actually met her, as I had worked with several teachers in the school as well as the current principal on a standards-based grading project in 2010.

Megan has a strong background in inquiry-based learning and teaching and has proven to be a teacher leader in her school, district and on a national level. She is a National Board-Certified teacher who recently completed her PhD. She has written articles on science education in *Education Week* and *The Science Teacher*. In 2013, she was named Minnesota Teacher of the Year. She spent her entire career at OWL, including her student teaching. At multiple points during the interview process, she indicated that she has no desire to teach in any other school or any other type of school (Interview Notes, 2018).

When I first walked into Megan's class, I was impressed by two seemingly contradictory things. First, the classroom itself was large and looked orderly. It was a science lab with lab tables arranged in straight rows around the room. At the same time, there was a sense of orderly chaos with student work and posters along with science equipment surrounding the whole room,

Table 2

Participants

Teacher	Subject Taught	Inquiry Model Used	School Name	Location
Megan Hall	Science	Envisions	Impact Academy	St. Paul, Minnesota
Andy Snyder	Humanities	Coalition of Essential Schools	Harvest Collegiate High School	New York City, New York
Denise Huey	Math	Expeditionary Learning	One World Learning	Hayward, California

making it feel somewhat cluttered on the edges. During my first observation, I understood why the room was so big. Her typical class size was well over 30 students, and the first class I observed had 38 students. Students sat at lab tables that they shared with three others. In the first observation, it was fairly easy to understand that Megan valued collaborative learning and that the four students at each table genuinely work together.

OWL is part of the EL Schools (formerly Expeditionary Learning) network and teachers in the school receive much of their professional guidance through the EL model and EL professional development. As a school, inquiry is the focus of the shared pedagogy of the teachers and is articulated on the school website. Open World Learning Website describes its program in the following way:

> "Open World Learning Community (formerly Open School) has nurtured self-directed learners for more than 45 years. Since 1971, students in our small-by-design school have been celebrated and respected for their individuality and take an active role in their education. With just 450 students in Grades 6 through 12, every student is a known and valued part of our family-like community. Open World Learning Community is a member of the national network of EL Schools, which promote rigorous and engaging curriculum; active, inquiry-based pedagogy; and a school culture that demands and teaches compassion and good citizenship" (Open World Learning, n.d.).

Andy Snyder. I have known Andy the longest of the three participants. In 2013, in my capacity as the Chief Learning Officer for World Savvy, I hired Andy to teach a course for our Global Competence Certificate program (GCC). Andy was recommended to me by a colleague at Columbia University's Teachers College. As I began to consider participants for this team, Andy was my first choice; he was someone whose philosophy and practice I had long wanted to tap

into further. The course he teaches for the GCC is called Discussion Leadership. Andy had come highly recommended to the GCC, and his evaluations as an instructor were outstanding.

Andy has a rich experience as a teacher and teacher leader. His background in inquiry-based teaching and learning is extensive and runs through his experience as a young elementary student through his undergraduate studies at New College of Florida. Andy has been a humanities and social studies teacher since 1999 and is, like Megan, a National Board-Certified teacher. Andy has a long list of presentations and publications that makes him a nationally recognized teacher leader. He has taught at several schools, beginning his career in Naples, Florida before moving to New York City.

When I first walked into Andy's class, I was surprised that there was nothing on the walls, only a modest bookshelf in the corner, and several questions written on the whiteboard at one end of the room. The desks were crowded into a circle and there was no real focal point I could identify. As I watched the first class, I understood why the circle was so important to Andy. The class was structured around questions and clearly designed for students and student discussion. Everyone in the class, including the teacher, had eye contact with everyone else in the circle.

Harvest Collegiate High School was founded in 2012, and Andy came the following year. The school uses the Coalition of Essential Schools model and on their website describes the school's mission this way:

> "Harvest offers a rich and challenging intellectual education rooted in a natural growth cycle of compelling experience, inquiry, and the pursuit of precision. We believe in cultivating students' power to produce and reflect, rather than simply consume, as a fundamental way of being in the world. Our learning experiences are designed to

> stimulate immersion through disciplined habits of thought on topics of moral and aesthetic significance, while cultivating a powerful sense of competence, autonomy and belonging. We aspire to being and to contributing creatively to a "sane society," one of peace, growth, even joy. We believe all young people flourish in conditions that challenge and support, so in our commitment to diversity and equity, we aim to serve the varied students of the city. We prepare students for success in college and for participatory leadership that promotes Harvest's values of active responsibility for mankind and our earth" (Harvest Collegiate High School, n.d.).

Denise Huey. Early in the process of looking for teacher participants, I reached out to Gia Truong, the CEO of Envision Charter Schools. Envision Schools is a charter management organization based in Oakland, California. The charter network has three high schools and two middle schools. Gia suggested Denise Huey, a math teacher at Impact Academy in Hayward, California.

Denise has been teaching for ten years, all of that time teaching 9th grade Algebra 1 at Impact Academy. Like Andy and Megan, Denise has been and continues to be teacher leader in her building and within the Envision network. She is, like her two counterparts, a National Board-Certified teacher, has been an instructional lead in math for two years, and was getting ready to work with her fourth student teacher at the onset of the project. Denise described herself as the teacher willing to experiment and try new ideas in order to bring them back to the Impact Academy community. Over the course of my visits to Denise's classroom, I have seen her experiment with online programs, academic discourse models, and arts integration through a program at San Francisco's Museum of Modern Art.

When I first walked into Denise's classroom, the students were clearly focused. Student work was arranged on almost every bit of wall space available. Above the student work were posters promoting equity and diversity, peace and justice, and love of math. On the wall behind her desk was a bulletin board crammed with photos of students. Over the time that I've known her, she has experimented with changing the desk arrangements in her room in order to create more small groupings for students to discuss and collaborate.

Within her school, Denise is seen as a leader in equity and social justice. She has been a strong supporter of a local organization called Teachers 4 Social Justice since she began at Impact Academy, and she brings a passion for social justice into her classroom. School-wide, she has served on the equity lead team for the last several years. Part of her work on that lead team has been to develop professional development for the entire staff.

Impact Academy began in 2007. As an Envision school, inquiry is the core pedagogy of the charter management organization and Impact Academy. In her message on the school website, the principal describes the program:

> "All Impact students engage in a rigorous academic program that satisfies California's A-G course requirements, intern through our Workplace Learning Experience program, apply to colleges, and present and defend a portfolio of their best original work.
>
> We place a strong emphasis on building powerful relationships between our young people and adults. All of our students spend their four-year high school journey as part of close-knit advisories, a family that nurtures and supports each other's social, emotional, and academic growth. Each week, our student body comes together for student-led Community Meetings, where we celebrate our "Spartan Pride," set new goals, and honor one another's unique perspectives and accomplishments" (Impact Academy, n.d.).

With my participants identified, I focused my attention on the work itself. In order to organize the collection of data I describe the two phases of research and provide additional detail about the methodologies used to collect and analyze the data.

Phases of Research

The research for the study took place over fifteen months in two phases. Formal research activities followed a pre-research phase, during which teacher participants were identified and primed for the work ahead. Each phase offered an opportunity to systematically dig deeper into inquiry-based learning and teaching, broadening my understanding of meaningful instructional practices. Further, each phase was designed to learn from each other. The development of the study, the selection of teacher participants, and the design of the research phases were guided by the logic model presented in Table 3. The logic model is based on the following assumptions:

- Through interviews and recommendations, I could identify experienced inquiry-based based teachers who are successful and interested in continued growth.
- With appropriate opportunities for individual and collaborative reflection, experienced, inquiry-based teachers could identify and elaborate on their professional journeys, philosophies of learning, and the pedagogical practices that support the development of inquiry-based learning cultures.
- Through guided collaboration among the teachers and the researcher, the teachers would deepen their skills in cultivating an inquiry-based pedagogy for consistent application in their classrooms.
- Through the research process, a fluid model for inquiry-based learning and teaching that describes teacher disposition, theory (key principles), and practice would be distilled and readied for dissemination.

Table 3

Project Logic Model

Goals	Inputs	Timeline	Outputs	Outcome	Broader Systemic Impacts
Identify three teachers who match criteria	• Receive recommendations • Interview each candidate	Pre-Research Phase	Select Three participants	Participants commit to the process	
Determine inquiry-based teacher dispositions and inquiry-based strategies employed	• Interviews with each teacher (1) • Team meeting #1 (virtual) • Observation of each classroom • Researcher memo reflections	Phase #1 – 3 Months	Participants tell stories that represent their experiences as learners and teachers	Participants build community around purpose of study	Draft of inquiry-based frame
Deepen our understanding of inquiry-based strategies, teacher decision-making, relationship building and the role of the school community as teachers develop their practice	• Interviews with each teacher (2) • Team meetings #1 & #3 (virtual) • Flipgrid presentation on the analysis of artifacts • Observation of each classroom • Interviews with School leaders • Researcher memos	Phase 2 – 1 year	Deep conversations and questions focused around the alignment of philosophy and "instructional practices"	Deep analysis of artifacts	Inquiry-based frame to support teachers in order to build inquiry-based instructional practices

Phase One: Fall 2017. The first ethnographic research phase launched in September 2017 and concluded in December 1 of that year. It began with observations and interviews with each team member. The interviews provided a base understanding of each member's experience, pedagogical stance in relation to inquiry and the personal narratives that frame their practice. The interviews also provided an opportunity for me to delve more deeply into each teacher's philosophy, and how it aligned with their instructional model and approach toward inquiry. In each case, the observations came before the interviews and allowed me to ask questions based on my experience and observations. By observing their classrooms first, I was grounded in each teacher's classroom stance. In essence, following the interviews, I was able to see a trail from practice to theory and philosophy.

After the initial observations and interviews, I facilitated our first team meeting. The timeline helped me to create questions connected to the range of practices that I observed and the broader ideas that emerged from my interviews. The team members did not know each other prior to the first team meeting so one of the explicit goals for our time together was to begin building a team culture and trusting relationships, factors that would enable the levels of authentic reflection required for meaningful collaboration (Guajardo et al., 2016). I asked each team member to share his or her history as an inquiry-based learner and how that may have motivated a commitment to an inquiry-based pedagogy. According to Guajardo et al. (2016), building community and trust relies on understanding and knowing each other's stories; thus, we began by listening to each other tell our stories both as learners and teachers. The first team meeting gave us an opportunity to ask questions of each other and share strategies and processes.

Phase Two: Spring 2018. Phase two began with interviews and observations that led to our second team meeting in early March 2018. In that meeting, we reviewed our learning from

phase one and uncovered emerging themes. The conversation gave us an opportunity to capture the reflections from each member on the emerging themes and to discuss next steps in the research. We used this meeting as an opportunity to further build community among members of the research team. At this meeting, one team member suggested that each member ask questions of the others. As team members began interrogating each other over the next two team meetings, I was able to uncover a deeper understanding of the common themes of pedagogy and practice.

Throughout this phase, I continued to conduct interviews of each team member in order to inform my understanding of each teacher's philosophy of learning. Those interviews were matched with observations of their classrooms as well as opportunities to discuss student work, assignments and projects.

The phase continued into the Fall 2018 and officially ended with the final interview in March 2019. The final phase of the research project was designed to provide the team with opportunities to experiment and to provide synthesis to their thinking about inquiry-based pedagogy. Employing the same methodologies as in phase one, I asked the team to think about what they have learned from each other and how that has impacted their practices. I interviewed each team member before the last meeting in an effort to document any changes in philosophy or practice that had occurred over the course of the two phases. The final team meeting focused on team-based reflections of changes each had observed in his or her thinking and in the thinking of others on the team. Throughout the phases, I relied on multiple methods of data collection and provide more specific details on each data collection method.

Data Collection

The ethnographic study employed several methods to enable qualitative measures of data collection. The goal of collecting data for the study was to inform, analyze, and initiate dialogue

in the service of deeper understanding through observations and the collection of artifacts that revealed facts, opinions, and insights (Miles & Huberman, 1994). This particular study made use of team meetings, participant interviews, memos from teachers and researcher, classroom observations, and interviews with the school leaders in each school.

Team meetings. Each team meeting was a 60-90-minute virtual meeting guided by several documents that spoke to the research questions. Each session had a loose agenda that reflected what was learned through the interviews and observations during that phase. I allowed for a semi-structured flow while making room for the co-creation of agenda topics, honoring the contributions of all team members (Guajardo et al., 2016). For the first session, each participant came prepared to discuss the journey that led them to become an inquiry-based teacher. We discussed and documented the philosophical and pedagogical principles of each member, relying on this dialogue to distill our growing understanding. Each team meeting session had time for members to discuss and analyze instructional practices, student's projects and assessment strategies. Finally, the team provided guidance for the pedagogical focus of each phase, which I documented and used to guide the other data collection processes. The team meetings occurred on a Zoom virtual platform and recorded, which provides a transcription.

Participant interviews. During each phase, I interviewed each team member one or two times. According to Patton (1990), "[t]he purpose of interviewing is to find out what is in and on someone else's mind. Qualitative interviewing begins with the assumption that the perspective of others is meaningful, knowable, and able to be made explicit" (p. 278). The process allows the interviewee to "explore his or her experience in detail and to reveal the many features of that experience that have an effect on the issue investigated" (Stringer, 2014, p. 105). The interview protocol focuses primarily on research sub-questions related to the participant's philosophy of

learning, pedagogy of inquiry and the alignment of philosophy and practice. The structure of the interviews provides for a necessary measure of consistency of information as well as the flexibility needed for follow-up questions (Patton, 1990). The interviews were audio-recorded, transcribed, and stored digitally in the researcher's secure Dropbox.

Participant memo. Each participant created one memo reflection using a virtual tool called Flipgrid. Flipgrid is a virtual, asynchronous discussion tool that records individual participants as they respond to a prompt using both video and audio. Participants can respond to each other, and those virtual interactions can lead to ongoing conversations. On the tool, I can upload documents and pictures of artifacts to support the discussion.

In this case, the participants were asked to identify an artifact that spoke to their beliefs and approach to inquiry-based teaching and learning. Each participant was given three minutes to share his or her reflection with other team members. The memo provided an opportunity for team members to reflect on classroom experiences and make connections between pedagogy and practice. Team members had the opportunity to provide more contextual explanations and make meaning (Birks, Chapman, & Francis, 2008). The Flipgrid recording was transcribed and coded for analysis and theme generation. The original recordings are stored on the researcher's secure Flipgrid site.

Researcher memos. In addition to the team member Flipgrid memos, I created numerous memos throughout the research process. Those memos provided an opportunity for me to document my own learning and reflect on field experiences in an effort to make sense of what I was observing in classrooms, hearing in the interviews and team meetings, and noticing through student and teacher artifacts in each classroom.

Observations. During each phase, I observed each team member's class one-two times. The classroom observations were designed to provide a window into the way in which the teacher's pedagogical dispositions play out in classroom culture. I had an opportunity to see the role that the teacher plays in facilitating an environment of inquiry. Observing classrooms multiple times gave me an opportunity to understand how learning processes were scaffolded overtime and the level of student independence that eventually developed.

During each observation, I used a selective verbatim process to capture the essence of each class. I took careful notes of the actual words and phrases used by the teacher and the responses given by students. I focused my notes on the teacher moves and student responses and actions during the class. I made note of the physical layout of each class as well as what was represented on the walls.

Leader interviews. Throughout phase one, each participant talked about the importance that their school played in his or her development as an inquiry-based teacher. In particular, the teachers talked about how leaders in the school supported not only their development but those of the teachers around them. One of the participants suggested that I interview one of their school leaders, a suggestion that I incorporated into the research design.

During phase two, I interviewed leaders from each school, speaking with one assistant principal and two principals. Each school employed a learning and instructional model that was based on inquiry, and the interviews provided a window into schoolwide decision-making, professional development, the integration of the instructional model across the school and the selection, development and nurturing of new teachers. The interviews helped to support one of the primary claims about inquiry-based teaching and learning.

Together, the multiple methodologies provided a large cache of qualitative data to analyze and code. Next, I discuss the methods used for analyzing the data collected.

Data Analysis

In this study, data collection and data analysis happened concurrently, providing the opportunity for data analysis to generate new questions and ideas that directly informed the additional data collected. I collaborated with the team, both individually and as a group, to discuss data through each cycle. Team members were provided drafts of sections in order to get their input and reflections. This technique is known as constant comparative analysis or, more informally, "member checks" (Glaser & Strauss, 1967).

The data analysis tools utilized in the project were selected for their ability to help draw meaning within the context of my research, in recognition that "interpretation is the key aspect of qualitative data analysis" (Gibbs, 2002, p. 14). Themes and patterns that emerged from each type of data source were comparatively analyzed (Creswell, 1998). In order to complete the analysis, I used an open-coding technique in which I analyzed transcripts, artifacts and memos and coded with different colored highlighters to denote themes and patterns for each research sub-question (Miles & Huberman, 1994). I used multiple codes to analyze the data. From the codes, a series of categories emerged. I then re-coded the data after I had completed my first coding cycle during phase one. The process of re-coding helped me to test whether or not the categories I had identified were strong enough to uplift themes. As Saldaña (2016) describes, "(R)arely will anyone get coding right the first time. Qualitative inquiry demands meticulous attention two language and images, in deep reflection on the emergent pattern and meanings of human experience" (p. 11).

After re-coding the first phase, I gained more confidence with the selected categories and was then able to identify emergent themes with a higher level of security (Saldaña, 2016). I triangulated the codes from the multiple data sources to develop the most common themes and patterns across different data collection samples. The emergent themes from phase one provided a bridge to phase two. As I analyzed the data in phase two by coding and re-coding again, I was able to confirm the phase one emergent themes and see new themes develop. During phase two, I solidified three strong themes about inquiry-based learning and teaching from the data collected with the three participating teachers. The major themes supported assertions or claims about inquiry-based teaching and learning in relation to my research questions (Saldaña, 2016). Next, I describe the significant of reflection and praxis in relation to this study.

Role of Reflection/Praxis

Reflection played a foundational role in the ethnographical study. Freire explains that the value of *praxis* is the iterative process of reflection in order to act (Freire, 1970). The design of the project offered the researcher and the participants opportunities to investigate together the philosophical foundations for driving an inquiry-based classroom. Throughout the process, the researcher and the participants used the interviews and team meetings not only to understand the depth and breadth of their practice but to come to a more thorough understanding of the practice of others who share similar goals but employ different models of inquiry. Through the fifteen-month experience, the team members had the opportunity to interrogate each other, build upon each other's practice, and develop new ideas and strategies in the service of improving practice.

Reflection was an ongoing and iterative process that contributed to a larger framework and the three primary claims about inquiry-based pedagogy. The resulting larger framework focused on equity of access for all students within an inquiry-based process. I used my memos,

described earlier in this chapter, as a way of uncovering themes and deeper ideas and to capture and document interactions between team members. Classroom observations of the interactions among students and interactions between students and the teacher similarly propelled reflection about the deeper truths of inquiry-based philosophies and their interaction with classroom practice. The iterative reflective cycle provided continuing impetus for the study and the participant praxis.

As in all research studies, limitations arose that necessitated my attention as a researcher. I describe the limitations of the qualitative study.

Study Limitations

Any reflection on the study's limitations must begin with a reflection on my role as an independent researcher with varying background and connection with the participating members of the research team. In addition, I tend to view information shared by others through a unique cultural and professional lens. The make-up of the participating team of teachers was diverse in multiple ways (e.g. culture, gender, types of schools, and geographic location) and contributed to a deeper understanding of multiple perspectives. At the same time, the differing identity markers of myself and participants opened up the possibility of implicit bias. I committed to reflecting on as the sources of bias that in researcher memos.

Another limitation of the research was in the selection of participants. Each participant brings her or his bias; however, the methodology employed in the study was built on the belief that all constituents have wisdom to share and deserve to have a voice with which to share it.

A final potential limitation was my positionality as researcher and its related power. While I had no real power to exert over the participants, care was taken to ensure that all participants gave informed consent without any coercion or feeling that they must participate.

Chapter Summary

Throughout this chapter, I have outlined how the theory of action led to the development of a research plan designed to instill a deeper understanding of inquiry-based pedagogy, a dynamic formulation of inquiry-based practices, and a compelling rationale of inquiry-based pedagogy for all students, including those from marginalized communities. The design of the two phases of research helped me and the team unpack their philosophy of learning in relation to inquiry-based pedagogy. While not specifically stated, a key aspect of what I uncovered was the belief that each team member held about the students they teach.

Finally, I sought to understand how and why the three teachers stand on the periphery of an education system that, on its whole, perpetuates a form of learning that is based on test scores and compliance. The purpose of the following chapter is to detail the findings from our first research phase. Phase one of the research provided team members with a deeper understanding of each other's inquiry-based practices and philosophy, outlined both common and unique approaches to inquiry-based pedagogy, and led to the identification of two emerging themes.

CHAPTER 4: PHASE ONE RESEARCH

Throughout 30 years as an educator, I have been in hundreds of classrooms as a coach, observer, and colleague. Each of those visits has been interesting in its unique way and has led me to understand the art and science of learning and teaching a little more deeply. In some cases, I have visited the same teacher's classroom over the course of multiple years. The visits have led to deep dialogue and difficult questions about learning and teaching. In Chapter 1, I gave the example of visiting a Career and Technical Education classroom and observing a group of students who were engaged and motivated by a classroom where the pedagogical focus was inquiry. Students were analyzing a problem, uncovering solutions and engaging in discussions with their classmates. Several days later, I saw the same students in other classes where the teacher lectured and expected nothing more than good behavior and compliance. The students looked bored, unmotivated and at times angry. That experience is perhaps among the starkest reminders of the power of effective teaching and an inquiry-based pedagogy. It is a reminder that effective teaching is about learning, which requires more than a lesson plan, well-chosen strategies, and appropriate resources.

The idea for the research began as a result of what I saw in classrooms like those described above. Unfortunately, too many classrooms looked and felt just like the classroom in which the students were bored and unmotivated. In this project, I set out to demonstrate that teachers of students who have multiple challenges to success can provide engaging and inquiry-based learning experiences on a consistent basis.

My research began in late September with a classroom observation with Denise. Her school is located in Hayward, California, just south of Oakland. I arrived early as I wanted to walk through Denise's classroom and get a feel for the physical space. I was nervous, and fully

aware that this was the beginning *of a journey with three highly-skilled inquiry-based teachers; I sensed that this observation was different. I was there to uncover and understand inquiry-based teaching as a researcher and a writer, not as a coach or colleague.*

Phase One Overview

For phase one of the ethnographic research, I worked with three experienced teachers who had been identified by colleagues in the field as thoughtful, reflective, and successful inquiry-based teachers. Each of the teachers practices his or her craft in highly diverse urban schools that serve a significant group of students who live in poverty. Further, each teacher is located in a different region of the country: New York City, Hayward, California, and St. Paul, Minnesota. Finally, these teachers teach in schools that promote a distinctive pedagogy focused on inquiry. Each school and teacher approached inquiry differently and tended to focus on different aspects of student inquiry. One of the long-range goals for the project was to uncover the beliefs and resulting practices of experienced teachers to understand how these led to student-driven as a means of unpacking how to prepare future teachers to be inquiry-based practitioners.

My goal with the research was to tell a story – about the three teachers, inquiry as pedagogy, equity, and access for all students, and learning and teaching. I was in an entirely different position for me and the skills and knowledge I applied as a leader, coach, and colleague had less bearing on this situation; I was present as a researcher trying to understand and uncover some kind of inquiry-based secret sauce, and I was present as a catalyst for their conversations about their practice.

The first phase focused on gaining an understanding of each participant's journey on the road to becoming a teacher and how that journey connected to her or his current teaching practice. In understanding each other's journeys, we uncovered some aspects of the philosophical

underpinnings that each teacher brought to learning and teaching. In the original design of phase one of the research, we were scheduled to end the cycle using Flipgrid – an online, asynchronous discussion tool – in order to present artifacts of inquiry from work with students. The timing of this event turned out to be problematic for the participants, and we delayed this particular activity until phase two. The first phase of the research was a dynamic and generative process that was determined by the participants and the researcher (Freire, 1970). Table 4 displays the data collection activities in phase one.

Once the main research activities were completed, I began the process of analysis in order to identify codes present in researcher memos and dialogue with each participant, hoping the process would lead me to a discovery of potential themes. The interviews began by exploring each participant's early experiences as learners. In all three interviews, the participants made connections between their own early learning experiences and their current pedagogy. I then analyzed the team meeting that took place in early October. It was the only event that brought together all members of the team in phase one. While the individual interviews tended to focus more on each participant's personal journey, the team meeting moved quickly from basic introductions and individual backgrounds to a deep and interesting discussion about inquiry and student learning. Finally, I analyzed the classroom observations using the emerging themes from the interviews and the team discussion.

I observed multiple through lines among the interview, discussion, and observation artifacts. The three teachers were successfully walking the talk. In other words, the ideas that emerged from the interviews and the team meetings played out in each of their classrooms in one form or another; the teachers showed clear evidence of transferring their values about teaching to their teaching practice.

Table 4

Data Collection Activities

Data Collected	Date	Activity Description
Observations of each teacher in the classroom	Denise, 9/25/17 Megan, 10/17/17 Andy, 10/26/17	Observed each participant teach 1-2 class periods
Interviews with each participant	Denise, 9/25/17 Megan, 10/17/17 Andy 11/3/17	Interviews were conducted with each teacher after the observation of the class.
Transcript of the ninety- minute team meeting session was coded and analyzed around emerging themes	November 9, 2017	Team (Andy, Denise, Megan and Ken) met virtually on Skype for 90 Minutes
Researcher memos	On-going throughout the research	Reflective memos were written by the researcher throughout the study

In this chapter, I discuss the emerging themes in answer to the central question of the study: *To what extent do teachers develop the philosophical foundations and pedagogical capacity to engage in inquiry as a consistent model of teaching with students who face multiple challenges to academic success?* During phase one of the research, I was able to uncover some of the common experiences that led Andy, Denise, and Megan to continue to hone an inquiry-based pedagogy. Specifically, after collecting the data, which included interviews, classroom observations, and a group meeting on Skype, I coded and categorized it in order to uncover emerging themes (Saldaña, 2016). Two major themes, supported by eight codes, began to emerge.

- Inquiry teaching and learning is a complex pedagogy that requires a philosophical foundation from which to build protocols and process (five supporting codes).
- Inquiry-based teachers use their personal journeys and experiences as learners and teachers to build their practices (three supporting codes).

Table 5 identifies the codes and categories that led to the emerging themes from the data. The chapter is organized to explore the codes, categories, and themes that emerged from phase one of the research.

Further, at the end of the chapter, I discuss how this phase impacted me as a leader. The principal research question offered tremendous opportunities for the three teachers and me to uncover our collective and independent understanding of what inquiry is, how it looks in the classroom, and what belief systems drive an inquiry-based teaching practice. While small in our size, we had the opportunity to build common understandings, strategies, and perspectives about inquiry. There were lessons in the essence of collaboration itself that can offer hope and understanding to other teachers who have not yet come to the belief that their students have the

Table 5

Phase One Codes, Categories, and Themes

Codes	Categories	Emerging Themes
Role of controversy and controversial content Academic task of setting up "good" discussions Inquiry as a transformative process. Inquiry as a process toward student autonomy The role that questions play as a driver of inquiry	Pedagogy and practice	Inquiry teaching and learning is a complex pedagogy that requires a philosophical foundation from which to build protocols and process.
Inquiry and autonomy K-12 experience as learners Inquiry and Equity	Teacher experience as learner	Inquiry-based teachers use their journeys and experiences as a learners and teachers to build their practices.

capacity to learn deeply in an inquiry-based system. Finally, I was interested in how a small group of teachers, with deep experience, could articulate a theory of teaching that supported inquiry-based pedagogy, a complex learning process.

As a result, we revisited our definition of what it means to be an inquiry-based teacher. Based on the external research as well as the research from the ethnography, an inquiry-based teacher designs student learning using key questions that connect students' lives to authentic real-life experiences. Inquiry-based teachers consistently facilitate learning experiences that build student skills around critical thinking, problem-solving, independent research based on students' questions, and student collaboration. Further, inquiry-based teachers intentionally connect learning theory to daily practice and use knowledge gained through their relationships with students to guide them.

Next, I discuss the design of phase one of this ethnographic research project, the team, the data collection schedule and tools, and the methods of analysis. I examine the data based on the two emerging themes. Still early in the research journey, nonetheless, I became clearer that each of the participants had a deep understanding of the philosophical foundations behind inquiry and that the philosophical base led them to her or his daily practice. The data pointed to the importance of each participants' previous experience as learners, which led them to become the type of teachers that they are today. While the participants had different and unique experiences, there was a common thread that exposed them to inquiry in their Kindergarten-through-university experience. In the next section, I discuss these learnings in detail.

Phase One: Emergent Themes

An analysis of the phase one data confirmed the emergence of two themes. A third theme was evident, but the data were not as clear, leaving a need to pursue that theme further in phase

two. The first theme was that inquiry goes deeper than asking questions and that, in practice, inquiry-based teaching requires teachers to have philosophical foundations for inquiry and build complex learning systems that support it. The second theme focused on critical role of personal narrative by looking at the journey of each participant as teachers and how the journeys impacted the way they think about learning and teaching and how they design and carry out student learning experiences as a result of this set of beliefs. In other words, inquiry-based teachers use their journey as learners and their experiences to consciously inform their current practice as inquiry-based teachers.

A possible third theme emerged but lacked a full range of data. That theme focused on each teacher's relationships with students and how those relationships impact teaching and learning. While not enough data emerged during phase one to fully develop this theme, it did inform action for the second phase of the project. Table 6 outlines emerging themes as aligned with evidence from the research.

In the next section, I examine the first emergent theme. That theme focuses on the complexity of an inquiry-based pedagogy and how the three teachers built complex systems and structures to meet the needs of their students.

Theme One: Inquiry Teaching and Learning is a Complex Pedagogy that Requires a Philosophical Foundation from Which to Build Protocols and Process

In this section, I look closely at the first emerging theme: inquiry teaching and learning is a complex pedagogy that requires a philosophical foundation from which to build protocols and process. The theme was evident throughout the interviews, observations, and team meeting. The theme itself speaks to the complexity of inquiry as a pedagogy and how inquiry-based teachers rely on their philosophical beliefs that have been built up throughout their career.

Table 6

Phase One: Emergent Themes

	Emergent Theme #1	Emergent Theme #2
Emergent Themes		
	Inquiry teaching and learning is a complex pedagogy that requires a philosophical foundation from which to build protocols and process	Inquiry based teachers use their journeys and experiences as a learners and teachers to build their practice
Evidence		
	Student autonomy as a learner is an important aspect of student-driven inquiry	A teacher's formative learning experiences and reflections on those experiences
	Constructing an argument, and the skills associated with it, are seen as a significant aspect of inquiry-based learning	Collaboration and action research are significant aspects of an inquiry-based teacher's journey
	Collaboration and dialogue are both essential aspects of an inquiry-based learning system	The intentional practice of inquiry requires humility and a willingness to question previous assumptions
	Questions both drive the inquiry process and are also the point of the inquiry (new questions that arise through the original inquiry)	Each participant had a measure of autonomy, choice and freedom to direct their own learning
	Critical analysis of real-world problems and the systems and structures that drive those problems is an important aspect of inquiry-based learning	

Throughout the data collection process, each teacher had her or his own take on the nature of an inquiry-based pedagogy. In one sense, they all perceived inquiry as curiosity and asking questions as a pedagogical process that helps learners deepen knowledge and understanding (Team Meeting, November 9, 2017). But the data from the three teachers point to a much more complex understanding of what inquiry is as a pedagogy, and that complexity was unique to each participant. In other words, there is no one handbook or guide that describes inquiry as a system for deeper learning (Team meeting, November 9, 2017). The application of inquiry in a classroom is unique to each teacher and is dependent upon his or her own learning and the context in which each is teaching. Five key codes under the category of pedagogy and practice were common to Megan, Andy, and Denise and exemplify the complexity of inquiry:

- Role of controversy and controversial content
- Academic task of setting up "good" discussions
- Inquiry as a transformative process.
- Inquiry as a process toward student autonomy
- The role that questions play as a driver of curriculum

Next, I examine each of the codes in more detail, beginning with a discussion of how teachers talked about and used controversy to engage their students and promote deep inquiry.

Role of Controversy and Controversial Content

In the phase one team meeting, a discussion between Megan and Andy on the topic of integrating controversy into student discussions captured the complexity of inquiry and the approach each teacher has taken. Megan, in describing a student project said,

"When we have our discussion about global climate change and ocean acidification, there [is] no feeling of controversy. That's why I started out with that one. But at the end of the year we have

a discussion about vaccination. We have a lot of 'anti-vaxxers' in our community, and that's a pressure point – that's a lively discussion. That's where the kids have to exercise their discussion skills for respectful and evidence-based conversation" (Team Meeting, November 9, 2017). Andy responded, "I like your idea that you are working towards the hard stuff. But I don't really see why you are starting with the easy stuff. I'm not sure that the students really pick up on good discussion skills by discussing something that they all agree about. You know, is that really good practice? Or is that sort of just distracting" (Team meeting, November 9, 2017)?

While in some ways the exchange between Megan and Andy could be seen as a tactical discussion about how one scaffolds discussions, something deeper and more complex in the different approaches between the two teachers is emerging. The question about how students build good discussion skills is rooted in core beliefs about inquiry and the role that controversy plays in supporting learning. Andy seems to be pondering whether or not one could actually build strong discussion skills without controversy. The inference is that controversy leads to interesting questions about differences in approaches and beliefs, strengthening the significance of inquiry.

In Andy's classroom, controversy leading to deep discussions seems to be an important pedagogical aspect. In an interview, he described how he organized the curriculum around critical analysis of significant issues that impact students directly. He provided the example of a question that he asked students about a radical increase in the minimum wage in New York:

"There is a basic social democratic perspective here. So, part of my job is to help them to have a better articulation of that perspective, but also to challenge them by exposing them to Milton Friedman's arguments for basic sort of classical economics supply/demand stuff on the issue of how that affects minimum wage – with the goal being to complicate their perspective to the point

where they could then more intelligently participate in public decision-making" (A. Snyder, Interview, November 3, 2017). While students are creating arguments, they are doing so within the context of authentic issues that impact their community. In this case, inquiry becomes a process for personal and sometimes social transformation.

In an observation of his classroom, I noted that Andy asked students a variety of questions to help them think deeply about how American society views both people going to college and those who don't. It is also worth noting that several students in Andy's class would be the first in their family to attend college. He began with the question, "Is college right for all students?" After a long silence, Andy reframed the question by asking, "Are you less of a person if you don't go to college?" One student responded by saying that, "Education-wise they are better…moral-wise they are not better." Andy began reframing the question to engage students and asked, "Am I a better person because of college?" The conversation then evolved into how we think about equality. At one point, Andy asked if "people who go to college are seen by others as being better than others?" To drive home his point, he asked the students, "If it was between you and Donald Trump, who would you save?" (A. Snyder, Observation, October 26, 2018). In an interview several weeks later, Andy talked about the need to use controversial questions with students as a way of countering preconceived notions and perceptions. "You have to attack the previous perception in order to free up the space to have real inquiry" (A. Snyder, Interview, November 3, 2017).

The role of controversy in an inquiry-based system was evident multiple times in my memos over the course of the research cycle. In one memo, after observing student projects at Montgomery Middle School in San Diego, I was struck by how the teachers described why the project was so successful. Teachers used terms like "dynamic" and "authentic" to describe

student questions and the topics that students chose for their projects. In a debrief with the eighth-grade teachers, in which the topics ranged from school safety to protecting San Diego beaches and aquatic life, to Black Lives Matter and police brutality, the common element of all the projects seem to be controversial and complex problems (K. Simon, Memo, December 10, 2017). Several weeks earlier, in a memo after our team meeting, I talked about student empowerment and how controversy and problem-solving provide students with tangible evidence of their own power as independent thinkers (K. Simon, Memo, November 18, 2017). Centering curriculum around controversy and controversial topics is connected to the development of student's skills around discussion and discourse. Next, I examine how the teachers in the study organized discussions they considered "good".

Academic Task of Setting Up "Good" Discussions

All three teachers think setting up "good" discussions leads to stronger and deeper inquiry with students. As we have seen, Andy supports his students by setting up discussions with provocative questions that help students question perceptions and preconceived notions. Denise reflected on the nature of good discussions and how to help students build those skills. She expressed a longer vision that supported students throughout their time at her school as they continually built skills through a series of scaffolds. Her students are ninth graders, and most of them are new to this form of learning. Her vision for student discussion, which she describes as academic conversations, was expressed as a desire to help students gradually build their skills over the course of four years. During the team meeting, she described "building the academic conversation(s)…so that when they are juniors and seniors and …they do participate in really political and environmental issues, that they are able to have a standpoint and are able to defend their reasoning" (D. Huey, Team meeting, November 9, 2017).

Her approach to academic conversations is based on helping students understand and use the skills needed for sustaining deeper conversations and developing arguments. In her classroom, five large posters hang from the ceiling and each poster identifies an academic conversation skill:

- Elaborate
- Support with evidence
- Paraphrase
- Synthesize
- Build on another's idea

She has likewise designed a consistent routine for the use of academic conversations: "Every Monday I give them a quote. I pull it from my social justice educator planner… the students copy down the quote, reflect on it, research the author, and define the quote in their own words. And then they just write to what extent do they agree, disagree?" (D. Huey, Interview, September 25, 2017). Throughout the week, she organized the students to have conversations in pairs and makes observations of how students are progressing in terms of applying the skills. On the day I observed, the prompt was a quote from Serj Tankicen, "I'd rather let the music speak for itself." During the discussion, I observed that students were mostly on task and interested in the topic. Several pairs asked the teacher to clarify what the quote meant, and she generally replied with questions about the messages in music that they listen to. As I walked around the room, I could see several groups looking at the posters for clarification of the skills. Most students were conscious of the skills that they were trying to use during the discussion (D. Huey, Observation, September 25, 2017).

All three participants talk about discussion skills as opportunities for students to learn from one another and to build their own perspective on controversial issues or topics. Denise talked about helping students "figure out what is the evidence that you're coming up with… and how you can construct an argument and build on that argument …through discussions with other students" (D. Huey, Interview, September 25, 2017). As stated previously, she is using an academic conversation format as a way to help students build better arguments.

Megan also seems to be scaffolding toward more controversial topics that will lead to argumentation. Both Denise and Megan expressed intentionality about the academic tasks that they are designing in order to help students develop their arguments or points of view. In an interview with Megan, she discussed scaffolding toward preparing students to make claims and defend those both within the context of a year in her classroom and within the 7 years that her students are in the school (M. Hall, Interview, October 17, 2017). In an observation of Megan's class, it was plainly evident how a lab on owl pellets was leveraged as an opportunity to use evidence to make claims about the survival of owl habitats (M. Hall, Observation, October 17, 2017). Strong discussions in classes open the doors for students to understand multiple perspectives and to challenge ideas. Because of the teacher focus on setting up the academic task for good discussions, inquiry can be a transformative process for students.

Inquiry as a Transformative Process

Education has often been thought of as a pathway to social and personal transformation. For many teachers, inquiry-based learning is a way by which to empower students not only to change their own lives but also to be change agents within their community and our world.

Andy talked about inquiry as social and personal transformation in his interview, "There is this other notion (of pedagogy) …that if you help people learn to learn differently, then you're

doing something transformative in the world… That education is a formative experience for people. So, if you educate differently then there should be some differences in how people turn out" (A. Snyder, Interview, November 3, 2017). Andy talked about his early years as an inquiry-based teacher and using inquiry as a way to help students build a particular ideology. He described that ideology as a left-wing activist perspective with the hope that students "would be awakened to… a clear and coherent alternative…" to the dominant ideology. The inquiry process, in that case, was used for transmission of a particular way of thinking. Andy went on to talk about his own transformation or change as an inquiry-based teacher. Speaking to the evolution in his own process, he said, "Now I see what I do is more dialogical… It's easier to use…questions as a starting point for discovery rather as a starting point for transmission" (A. Snyder, Interview, November 3, 2017).

This notion of inquiry as a process that leads to both personal and social transformation is explored more deeply in phase two. While Andy articulated this issue most clearly and focused on both the social transformation and the transformation of the learner, Denise and Megan showed interest in the relationship between inquiry and social transformation. Megan used quotes from well-known social justice activists as a way of fostering academic conversations so that her content was geared toward social transformation.

Student autonomy provides an avenue of transformation for the passive learner to engage more actively. In observations of Denise and Megan's classrooms, I observed both teachers intentionally providing students with more autonomy within the context of the classroom, allowing them to transform their learning experience. This was most pronounced in Megan's classroom on the day that I visited. As noted earlier, her students were working on a lab designed to help students understand owl habitats. Students had a large measure of autonomy throughout

the lab in terms of pacing their work, conducting the lab, and reporting of findings (M. Hall, Observation, December 17, 2017). The process of student autonomy within the context of inquiry as transformation can also be characterized as a social transformation that empowers students in their education experiences in ways that lead to a greater power as change agents and leaders within their own community.

In a research memo from October 2, 2017, I posed several questions about inquiry as a process that can lead to student transformation. In that memo I sought to understand student transformation and how high-quality learning design can support that transformation over time. In one sense, transformation can occur in students' belief systems, both on the political and social level, and in other ways the transformation can be highly personal around how we build our own learning processes using more disciplined inquiry and critical thinking. Both kinds of transformations seem to signal the importance of controversial and authentic content as well as high-quality learning experiences that intentionally build transformative skills (K. Simon, Memo, October 2, 2017). As stated earlier, student autonomy was one of the key transformations that the inquiry-based teachers were focused on with their students.

Inquiry as a Process Toward Student Autonomy

While argumentation, critical thinking, and skill-building all seem to be part of an inquiry-based process, all the participants articulated something that goes beyond the transmission of skills and knowledge – an opportunity to empower students as learners. In an interview, Andy talked about trying "to make what I do in the classroom more focused on students – making meaning and figuring things out and less focused on me just telling" (A. Snyder, Interview, November 3, 2017). Meaning making requires more than cognitively understanding an issue or an argument. An aspect of meaning-making intentionally taps into

previous experiences and ideas as well as emotional and social ties that we have to those previous experiences. In a sense, meaning making requires a more holistic approach to learning that requires all aspects of our being as learners.

Secondly, Andy's notion of students "figuring things out" was a common thread that all three participants either talked about or exemplified through classroom observations. One way to describe student autonomy as a learner results from the "figuring out" process. For example, Megan facilitated a lab the day I observed her class. During the lesson, she gave no whole group instruction and relied on students to know and understand the process for conducting the lab. Throughout the 80-minute class, students were focused even though all were working at different paces, resulting in a fifteen-minute difference between the first group completing the lab and the last (M. Hall, Observation, October 17, 2017). In this case, freedom and autonomy were focused on process. The teacher's decision to not provide any whole group instruction reinforced the notion that student groups were conducting the lab independent of the rest of the class but collaborating with their groups to complete the task.

Student autonomy is strongly connected to scaffolding and can provide a roadmap to student-driven inquiry. The notion of scaffolding was more apparent in Megan and Denise's classrooms and the interviews. At the same time, scaffolding is a complex issue and dependent on context. In the case of the three teachers, Denise and Megan teach younger students – ninth and seventh grades respectively. Scaffolding, within an inquiry system, seems to be a significant question, to pursue in phase two, particularly in relation helping students build more autonomous learning skills. In an October memo, I reflected on student autonomy not as a static set of processes that one does but rather as a dynamic process for students. For many students, their learning experience has depended on teachers to provide instruction for what and how to learn.

Student autonomy, on the other hand, is a dynamic process that students learn as part of high-quality instructional practice within the context of engaging content (K. Simon, Memo, October 12, 2017).

Student autonomy provides an example of how learning can engage us beyond the cognitive dimensions of learning, a value shared by the three participants. In an exchange between Megan and Andy during a team meeting, Megan talked about the inquiry approach as much more interesting and empowering than a didactic pedagogy, "You wind up working with kids that are alive and vivacious and curious" she said. "That's just way more fun to me then working anywhere else. It's a more joyful experience…" Andy responded by saying, "We get to be more human with each other." Megan used hunger as a metaphor to talk about inquiry and curiosity. "Humans need to eat; they are going to eat no matter what, so you could enjoy eating and you could identify different flavors and savor them and be there in the moment. Or you could just eat gruel every day. Either way you're going to eat and it's going to happen. We want to learn, we are curious. Curiosity is the hunger of the mind and I think the spirit too" (Team meeting, November 9, 2017). Student autonomy is dependent on engagement and curiosity in an inquiry-based system, and questions can help to drive that curiosity and engagement.

The Role that Questions Play as a Driver of Inquiry

While it seems obvious that questions play a central role in any inquiry-based process, the teachers in this study describe the role of questions as connected to something larger in terms of both content and process. All participants used questions as a way of guiding their students through the lessons that I observed. Andy's curriculum as a whole is organized around questions. Each week, he designs a new question that the students explore (A. Snyder, Interview, November 3, 2017). The questions not only help students examine larger economic issues but are also

designed to connect those economic issues to students' personal lives. He described how he started the beginning of the year "with the constructivist question of what's my place in the economy," inviting a conversation about how his students' childhoods were affected by poverty, in most cases, and how for some extended family have provided childcare because their birth family broke up – partly over issues of poverty (A. Snyder, Interview, November 3, 2017).

The questions that Andy asked generally made connections to the students' personal lives. This was evident in the observation that I did of Andy's class. Throughout the 80-minute class period students pondered and discussed two questions. The first, "Is college right for all students?" Throughout the class, Andy used questions as a way to motivate and prod students into discussing the issue. His questions were often times controversial such as "Do you think a person is morally better because they go to college?" Many students in his class would be the first in their families to attend college, so his question was clearly designed to spark deeper arguments by connecting to their own experiences (A. Snyder, Observation, November 3, 2017).

Megan reflected on questioning in relation to student autonomy. "I'm helping them to ask the questions," she said and described a process where she supplies students with the big questions and the students come up with some of the smaller questions (M. Hall, Observation, October 17, 2017). I asked Megan why she chose to develop the big questions for students, and she responded that, "It would be interesting if they developed more of the questions themselves" (M. Hall, Interview, October 17, 2017). Megan's response demonstrates the variety of approaches and thinking about how inquiry is applied in a classroom. For many, inquiry means students answering questions as opposed to developing their own questions while, for others, inquiry means helping students ask their own questions and use those questions as the foundation for further research.

In my observation of Denise, she continually asked students open-ended questions. Questions drove the lesson and were core part of the instructional process (D. Huey, Observation, September 25, 2017). Denise, like her counterparts, seemed to have a disposition toward asking questions in response to student needs and curiosities during the course of the lesson (Team meeting, November 9, 2017).

The complexity of inquiry as a learning system was apparent throughout the interviews, team meeting, and in the observations. At the center was considering questions and the ability to both find the answers and generate new questions. As we unpacked questioning as a team, each teacher offered specific nuances. As we talked, the clarity of inquiry as associated with skills such as critical thinking, analysis of text, and collaboration emerged. Like the students they aim to empower, the three inquiry teachers are continually building their practice and their understanding of inquiry. They did not respond in the interviews or the team meeting with pat answers or easy definitions. They asked questions of each other and were curious about how each of their practices were playing out in the classroom. This philosophical pedagogy became even more complex when viewed within the context of their individual schools. Each of the three schools' names inquiry as a core part of their philosophy, and each school has a unique approach that is practiced commonly across the school. Each school is engaged in professional development cycles designed to reinforce their unique pedagogy.

Theme One Summary

Figure 3 shows the relationship between the codes used in analyzing the data, the five categories these landed in, and the broader emergent theme that can be uplifted from these regarding the complexity of an inquiry-based pedagogy.

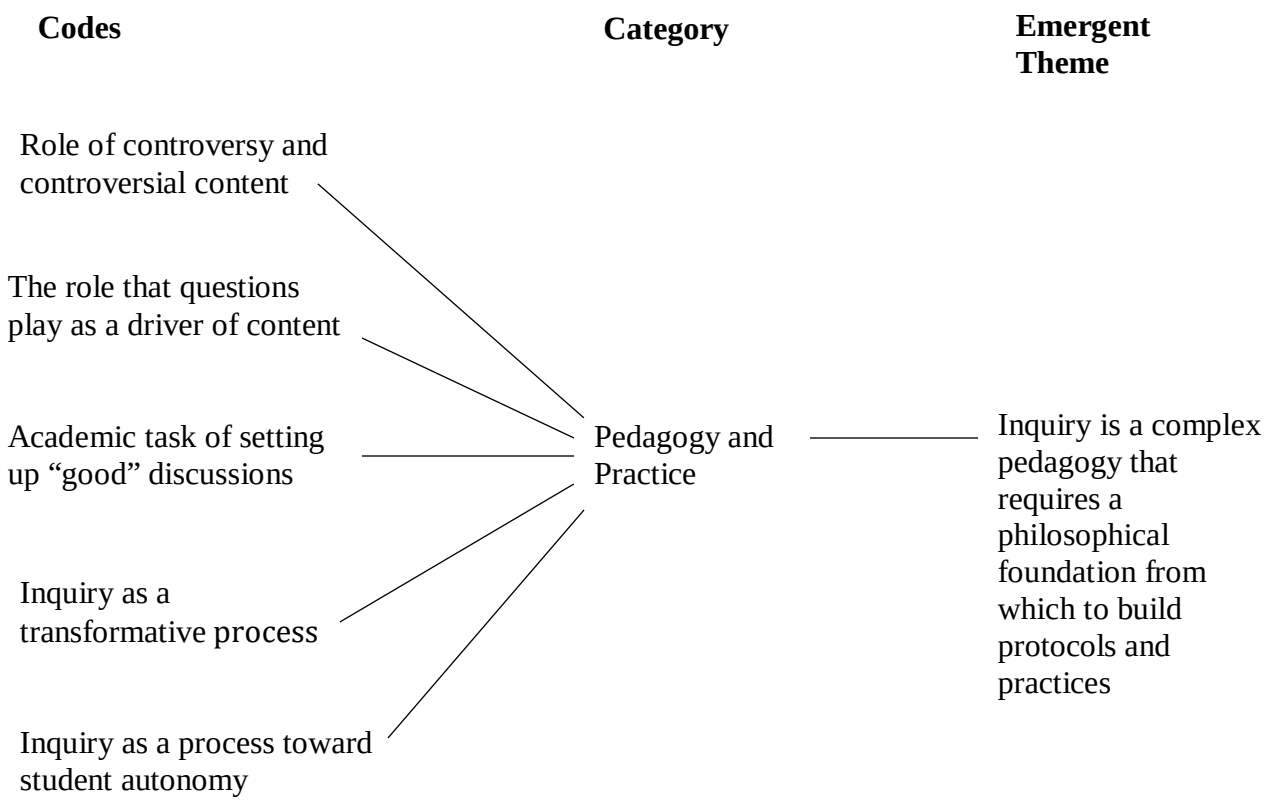

Figure 3. Complexity: Summary of codes, categories, and emergent theme.

In summary, categories emerged from the data that spoke to the relationship between inquiry and the decisions teachers make on a daily basis concerning instructional practice. I continue to explore this theme more deeply in Chapter 6. In the next section, I examine the second emergent theme and look deeply at the evidence as it relates to the codes and the category.

Theme Two: Inquiry-based Teachers Use Their Journeys and Experiences as Learners and Teachers to Build Their Practices

Teaching is a deeply personal process, and the journey one has walked in life will always necessarily intersect with their teacher identities. As such, teachers employing more commonplace instructional practices are highly impacted by their prior learning experience. However, the group of three inquiry-based teachers uniformly demonstrated deep thoughtfulness in connecting the way that they teach with their experiences as learners in their formative years and through the present. The category of teacher experience as a learner from which this theme emerged was evident at multiple points during the interviews and observations.

All three participants noted that they chose to teach in an inquiry-based learning environment. In other words, pedagogy – not curriculum, nor age group preference, nor location – was the primary driver in terms of where and why they teach. Secondly, upon reflection about their own experiences as young learners, they pointed out issues of equity related to who was selected for certain classes, and, as a result, what experiences were afforded to them. Finally, the teachers talked about how autonomy was an important part of their own learning experience. In particular, both Megan and Andy, in interviews, discussed how autonomy was a key ingredient in their own experience as K-12 learners (M. Hall, Interview, October 17, 2017; Snyder,

Interview, November 3, 2017). I explore the three codes that correlated with the category of and the second emerging theme:

- K-12 experience as learners
- Inquiry and equity
- Inquiry and autonomy

K-12 Experience as Learners

At some point in their K-12 experiences as students, each participant was identified as gifted and talented in either one or all subjects. Andy attended a school for gifted and talented students while Megan attended a Montessori School, which typically employs a more progressive and inquiry-based learning model (M. Hall, Interview, October 17, 2017; Snyder, Interview, November 3, 2017). That designation offered at least two of the participants a more holistic education experience, which included aspects of inquiry-based learning. Andy discussed being identified as gifted in second grade, realizing that it meant a very different kind of education for him than the rest of society. As Andy identified, the practices of inquiry were not new or strange to the American education system; rather, the practices were reserved for a special group of students who were perceived to be gifted. Andy selected a college that was inquiry-based and small, allowing students to be, as he described in the interview, "Masters of their own learning" (A. Snyder, Interview, November 3, 2017).

Megan began her education journey as a Montessori student, and, in the interview, she discussed how she was allowed to go at her own pace. School for her was a place "where I was free to learn what I wanted to learn and when I got something and understood it, I was empowered by my teachers to work with other kids and help them get it to" (M. Hall, Interview, October 17, 2017). At some point, Megan's family moved, and she had to go to because her

family moved. “It was a neighborhood school,” she said, “and I lasted two days. I was miserable there. I had moved up to reading level 11 or 12 or something, and they made me go back to reader one because that's what everyone else was reading. I remember telling my mother that the music teacher lacked the spirit of music and that they were trying to turn me into a follower and not a leader” (M. Hall, Interview, October 17, 2017).

Megan changed schools and entered another Montessori program. In high school, she participated in an International Baccalaureate (IB) track within a large school. The IB program provided for her a measure of inquiry that students in the traditional programs could not access.

Denise’s connection to an inquiry-based system as a young learner was more complex. In fifth grade, she had a teacher who took a deep interest in her as a student. Because the teacher was Asian, like Denise, she felt she had a model to see herself as a successful adult. In seventh and eighth grade, she had a math teacher for both years who inspired her and led her to think about teaching as a profession (D. Huey, September 25, 2017). In our team meeting, Denise described her 7/8th grade math teacher as fun and employing somewhat of a project-based model (D. Huey, Team meeting, November 9, 2017). In her interview, Denise described how her experience in his class got her interested in math. Denise’s interest in math led her to be invited to higher level math classes that took a stem-based approach which offered the students an opportunity to integrate math and science as well as application of math through projects and labs (D. Huey, Interview, September 25, 2017).

Our personal experiences as learners can serve as pathways to the kind of teacher that we become. Next, I examine how issues of equity affected each of the three teachers in this study when they were young learners and how those issues impacted not only their pedagogy but also the children they wanted to serve.

Inquiry and Equity

Denise's journey provided a lens into the experiences of ethnic minorities. In her interview, she talked about how the combination of being Asian and good at math led to "being tracked into very specific classes. From there, you start seeing different types of math teachers" (D. Huey, Interview, September 25, 2017). In Denise's journey, she was tracked into classes such as AP calculus and trigonometry and was able to be in classes taught by "great STEM teachers". However positive her experience was, Denise talked more directly about the impact that tracking programs had on overall equity. Some students were clearly left behind and, as she pointed out, there was definitely a racial and ethnic component to who was selected and who was left out of high-level, more inquiry-based classrooms (D. Huey, Interview, September 25, 2017).

On January 21, 2018, after reading a draft of this chapter, Andy commented that in his K-12 gifted and talented classes, there were no African American students. For Andy, issues concerning lack of access to inquiry-based learning connected to a larger issue of systemic oppression. He discussed how early in his career he saw inquiry as "sharing realizations and insights and using questions as…a tool to interest people so that they would pay more attention to the correct answers" (A. Snyder, Interview, November 9, 2017). Those correct answers, in his eyes, were focused on using inquiry to create a more just and equitable society.

In a memo dated November 12, 2017, I reflected on these conversations and wrote about several experiences that I had had in the six months prior. I recounted one such experience in a New York City high school, writing "I saw IB and AP classes that were almost entirely white and remedial classes that were almost exclusively kids of color. In fact, the entire school seems to be segregated by floors. This is not the only school that I have seen like this and by no means an aberration" (Simon, Memo, November 12, 2017). Schools always seem to find ways to

segregate students as they continue to describe themselves with pride as a diverse community. Yet, evidence shows that in many of those schools, white students and students of color rarely interact in academic programming. In the case of the New York City school that I visited, students of color were subjected to a teacher-directed instructional program with little engagement while students in the IB and AP courses had far more opportunities for problem-solving, interesting discussions, and relevant content.

In each interview I held with the team members, they described a core equity issue in terms of access to an inquiry-based pedagogy. In the team meeting, Megan described her experience both at the Montessori school and in an IB program at a comprehensive high school as being segregated from a much more ethnically and racially diverse student body (M. Hall, Team meeting, November 9, 2017). In her interview, she discussed how her current school works to create a welcoming environment for students from all backgrounds. The school uses a format called crew, which is a small group of 6^{th}-12^{th} grade students, led by a teacher, designed to provide each student with a stable community within the school (M. Hall, Interview, October 17, 2017).

Each of the teachers in the study were thoughtful about the experiences that they had as young learners. All three of them experienced a level of autonomy related to inquiry that became a core focus of their practice. Next, I discuss how their history of autonomy impacted the kind of inquiry they practice today.

Inquiry and Autonomy

Autonomy as a learner emerged during several interviews. Two of the participants named themselves as autonomous learners. In her interview, Megan talked about herself as a Montessori student: “I was allowed to go at my own pace. I didn't have to wait and wait and wait. School

was a place where I was free to learn what I wanted to learn" (M. Hall, Interview, October 17, 2017). Andy connected his own experience as a young learner to a larger, systemic view of education. In describing his own opportunities he states, "from the very beginning (of his own education), it was clear that there was an alternative to standard education and that [it] was a preferable alternative…providing more creativity for students; giving them more depth, more autonomy, and more trying to figure real things out"(A. Snyder, Interview, November 3, 2017).

The theme of student autonomy in their experiences as learners emerged multiple times the interviews. Further, student autonomy was evident in the classroom observations in multiple ways. In Denise's classroom, student autonomy could be seen in how the class was structured, as well as how students approached the content. During the classroom observation, students walked in and began work without direction from the teacher. I observed several transitions that were primarily led by students with little confusion or disruption. As students were working on a series of math problems, I noticed they had a choice of the type of pathways or problems that they were working on (D. Huey, Observations, September 25, 2017).

In my October visit to Megan's classroom, a lab on owl habitats and prey, I observed a high level of student autonomy in terms of how students approached the lab, how they recorded their findings, and the pace at which they worked (M. Hall, Observation, October 17, 2017). It was evident from the observation that Megan had also created strong structures, like Denise, for student autonomy. These examples were primarily procedural and process oriented, but they carried over into academics.

Andy's approach to autonomy seemed more geared for independent thinking and students developing of their own questions. During an observation, Andy, began the lesson by asking students an open-ended question – "Are you less of a person if you don't go to college?" (A.

Snyder, Observation, October 26, 2017). Over the course of the next 40 minutes, I observed how students grappled with the question. At no time during the lesson did Andy try to impose an answer or even direct the conversation toward a particular line of discussion. In this sense, autonomy was reflected in giving permission for students to grapple with their own understanding of the question.

Theme Two Summary

Student autonomy is a complex idea that reinforces how inquiry goes beyond merely asking questions and searching for answers. Student autonomy in an inquiry system seeks to build skills and dispositions that free the learner to employ their curiosity in learning about the world around them and in pursuing knowledge and understanding that engages and motivates the learner (Dewey, 1938). While inquiry is a complex system of learning, that complexity is also reflected in how it is taught. Among the members of the team, the teachers' experiences as learners played a significant role in the kind of teacher that they became. All three team members had significant experiences as inquiry-based learners. Early analysis would indicate that how teachers themselves learn has a deep impact not only on what they learn but also on the kind of teacher they eventually become. Our history and experience as learners create frameworks that teachers apply to their own practice. In this case, all three teachers had significant experiences with inquiry-based learning that impacted them far beyond the actual experience. From those learning experiences, the teachers in this research were able to identify issues of equity and student autonomy that were significant to them as learners. Therefore, the teachers used those experiences as learners to construct their own inquiry-based pedagogy with an emphasis on both equity and student autonomy. Figure 4 summarizes how I moved from codes to categories to the emergent theme.

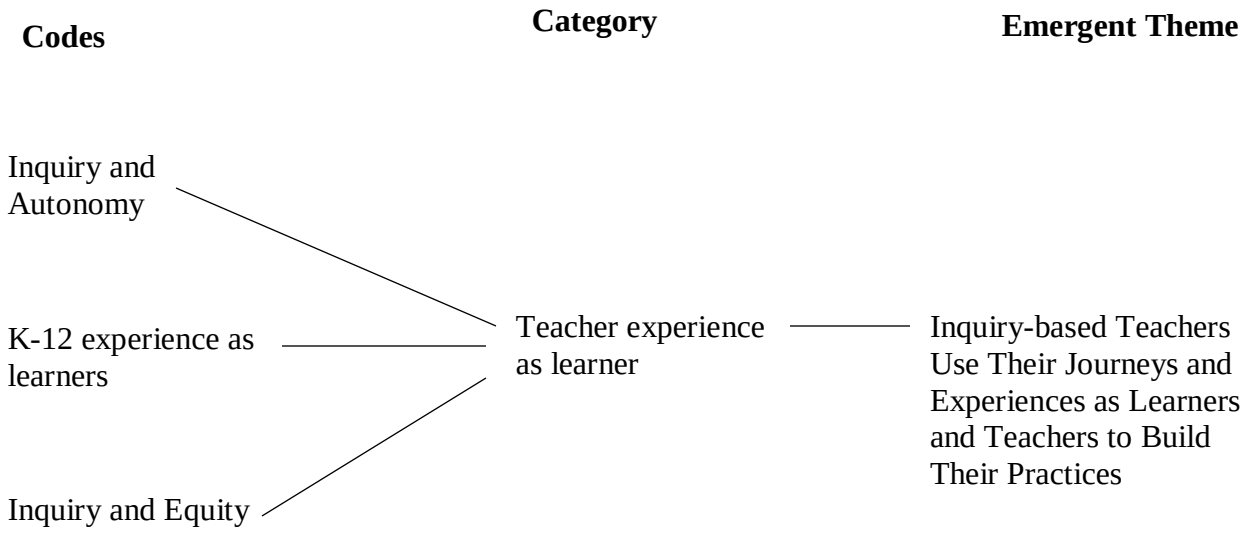

Figure 4. Journey as teachers: Summary of codes, categories, and emergent theme.

In the next section, I provide a summary of phase one of the research with an eye toward phase 2 of the research. Phase one was dedicated to understanding and uncovering emerging themes. Phase two gives us an opportunity to look more deeply at the emerging themes and examine how the research continues to impact me as a leader.

Chapter Summary

The first phase of the project produced two emerging themes:

- Inquiry Teaching and Learning is a complex pedagogy that requires a philosophical foundation from which to build protocols and process.
- Inquiry based teachers use their journeys and experiences as a learners and teachers to build their practices.

Phase one of the project led to uncovering some of the complexity of inquiry-based learning and teaching. Along the way, we uncovered the first emergent theme: each of these three teachers bris their individual meaning to the concept of inquiry, different aspects of inquiry, and are deeply situated within unique inquiry-based models at their schools. Rather than be challenged by the complexity of holding multiple perspectives and truth, the divergences provide an opportunity to understand inquiry as an interconnected approach that is less about what the teacher does or teaches and more about what the students do.

The second emergent theme provides understanding of the influence of the participants' histories as learners as they developed their practices as teachers. Each participant's history in exclusive, privileged situations impacted his or her decision to teach in schools that serve urban students of color. In other words, they chose to be a part of schools that were providing access to an inquiry-based pedagogy generally reserved for middle- and upper-class white students. All three teachers selected the schools that they now teach in among many options, citing the shared

pedagogy of inquiry in each school as a primary reason for selection. Collecting and analyzing the stories helped me to reflect on my experience as a teacher and leader in education. Throughout my career, I have made multiple transitions as a teacher and leader but was always focused on providing access to deeper learning and inquiry for students who face multiple challenges in our education system.

What Does it Mean to be an Inquiry-Based Leader?

The impetus for the study came about through my experience as a self-proclaimed inquiry-based teacher in highly diverse urban schools. As I described in earlier chapters, opportunities for inquiry-based learning were too often restricted to gifted and talented students in urban schools, or to students in primarily white suburban communities. For many students in highly diverse communities that serve students with multiple challenges to academic success, the dominant pedagogy has focused on basic skills in literacy and math as well as test preparation. Students would only get moments of inquiry through the occasional lab or competition project like History Day.

Thus, an equity issue that rarely gets attention drove the project. I began with the premise that building skills through inquiry-based learning can lead to greater success in terms of college and career. Further, the question that drives the project is about providing learning opportunities that help students recognize their own humanity and lead full and meaningful lives based on their decisions and choices.

Engaging in the project has helped me to see other dimensions of leadership that are guided less by strategic plans and reporting structure and more by a fundamental curiosity for understanding how humans learn. Throughout this experience, I have had my feet firmly set in a traditional leadership position with multiple direct reports and responsibility for implementing

and evaluating against a three-year strategic plan. The questions that I have about leadership are less about organization and more about how a leader builds trust in the service of a deeper, more meaningful educational experience for all students.

At the heart of the study is the power of storytelling as a process for building understanding. Storytelling allowed the research team to make connections between their philosophy and practice. My role has largely been to facilitate the storytelling and then recasting those stories through the codes, categories and resulting themes. Further, the lessons learned here can provide inspiration and a framework for new teachers to embrace inquiry as a sustained practice.

Professionally, since the onset of this work, my role as a leader has begun transitioning from a more formal context to one in which leadership is more collaborative, structures are organic and built around a particular need, and relational trust is at the core of our work. Good leadership is part of an experiential learning system that is designed to empower learners at all stages as well as create connections and collaborations. While I was not formally leading the team of teachers, I was facilitating their connections and undoubtedly over the course of fifteen months they learned from each other as they continued to build their practice. Part of the leadership equation in education is being able to recognize and understand what teachers bring to the table and finding systems and structures to help them have deep conversations using evidence to talk about student learning and instructional practice.

Phase Two: Deepening our Understanding of Inquiry as a Pedagogy

In the next chapter, I examine phase two of the research in order to understand the complexities of some of the emerging themes described in this chapter. The chapter uncovered more deeply how the team members had childhood learning experiences with special programs

(gifted and talented; Montessori) that stressed inquiry. Those programs excluded many students, condemning most learners to a pedagogy of testing. While the three participants were all deeply impacted by their early learning experiences, their teaching practices have clearly evolved over time. All of the participants have described the impact that their school and the pedagogical model it uses has had on them. In all cases, teachers within these schools regularly meet to exchange ideas and discuss the pedagogy. The power of context, particularly the school model, plays a critical role in how each teacher approaches and integrates inquiry into instruction. The power of the school context led to several questions for phase two of the project. I explored with the team the ways in which they are individually impacted by their peers, their school leaders, and the design of the school.

One of the other emerging themes from phase one was a differentiated approach to how inquiry is practiced. In other words, the three teachers apply inquiry in somewhat different ways and the teachers use their expertise to determine what aspects they might preference and how they approach scaffolding. This led to new questions in phase two about what each participant means by or includes within their framework of inquiry. In broad strokes, there is some agreement that student autonomy and student-driven questions are part of an inquiry-based learning system. At the same time, the role that dialogue and argumentation play in an inquiry-based system drew less consensus among the participants. In phase two, we continued to build our common understanding of what we mean by inquiry as a learning system.

During the next phase, I continued to unpack the role that questions play in an inquiry-based system. In phase one, the team identified several different types of roles that questions play: organizing learning and content, part of a process for students to develop opinions and arguments, and as an opportunity for students to own their own learning by following their own

questions. The way the teachers used questions seemed to be ultimately designed to empower students and better engage them with authentic issues that are relevant to their lives.

Finally, in phase one the theme of relationships between students and teachers could be seen as emerging in its earliest stages within the data. In phase two we explore more deeply how relationships between teachers and their students impact inquiry-based learning. The three teachers were able to speak directly to the barometer of relationships and how they build relational trust with their students. Phase two also provided data that evidenced other key themes, such as the role that their school plays in supporting the development of their own pedagogy and the deepening of their understanding of inquiry.

CHAPTER 5: PHASE TWO RESEARCH

The teacher told the class that they were going to watch a video about the experiences of a group of young refugees living in a camp in Lebanon. The video is a conversation between two young Syrians who were about the same age as the students in the class. She told the students to watch carefully and that once the video was over, they would have a conversation in small groups about the experiences of refugee children. Before the class began the teacher said she was nervous because two of her students were refugees and had lived in camps. We talked about how the video and the discussion might impact them. She spoke to the students the day before about the content of the lesson and she said they seemed ok with both the video and the discussion.

I was observing this class as part of my role at World Savvy, a global education nonprofit. I had been invited to the class by the teacher, who I had known for several years. She was using educational materials and a process that my organization had developed, and she wanted to debrief after the lesson.

I decided that I would sit with one group and listen to the discussion after they watched the video. One of the students in the group, Abed, was a Somali immigrant and the teacher had told me that he had not talked in class at all this year. As the video ended the students in my group started to discuss the video using the guiding questions that the teacher provided. At one point Abed said, "I was a refugee, I can tell you what it was like for my family." He went on to talk about his life growing up in a camp in Kenya. The other students were focused on every word he said and remained silent as he told his story. When he finished, the other eighth-graders in his group peppered him with questions and what followed was a deep discussion.

When I visited the class several months later the teacher had told me that Abed was now much more social with other students. She also said that the other students treated him differently – they seemed to respect him and included him in social conversations and activities.

What I witnessed that day was the power of storytelling and its impact on those around the storyteller. The teacher had taken a risk, knowing she had refugee students in her room she had purposely decided to use this content and specifically the video. She had hoped that she had built enough trust with her students that her refugee students would feel comfortable telling their story.

Introduction

As part of my research about what good inquiry-based teachers do to engage their students and help them deepen their understanding of content, one of the central learnings I have had is about the critical need for strong relationships between teachers and students. Those relationships are strengthened when students see themselves in the content and are allowed to tell their stories as part of their learning journey. In this chapter, I discuss the research process used in phase two of the research and how the expanded research activities led to a deeper understanding of the philosophy and practices of Denise, Andy, and Megan. I then uncover the three findings that came from both phases of research. I discuss how the school and the school leadership impacted the three teachers. Finally, I examine how the research and the relationships that I have built with Andy, Megan, and Denise have impacted my own leadership. At the end of this chapter, I discuss how the three findings from the research can be generalized to gain a better understanding of what strong inquiry-based teachers do in order to meet the needs of students who face multiple challenges to success.

Phase Two Methodology and Evidence

Phase two of the research began in January 2018 and ended thirteen months later. During this phase of the research, I was able to spend more time with the three teachers in order to get to know them better, build trust, and gain a deeper understanding of their work. I was also able to better understand the context of their schools and how each school both articulated and supported an inquiry-based pedagogy. Table 7 describes the research methodology, the evidence collected and the dates of each event.

The ethnographic methodology continued to support that ways I could tell a more complete and compelling story of the three teachers and the inquiry-based pedagogy that they apply in their classrooms. While the story is mostly told about the teachers, the students' dreams and hopes are a part of the story. In most cases, had their students gone to more traditional schools, they would have experienced a very different kind of learning. While the goal has been to tell the story of the teachers, ultimately, I do so in the service of their students and millions of others who do not have teachers like Andy, Megan, or Denise. It is the assertion of this researcher/educator that inquiry-based teaching and learning is a far more authentic and relevant pedagogy that all students should have access to no matter what their ZIP code, their race, or their test scores.

As detailed previously, inquiry-based teachers consistently facilitate learning experiences that build student skills around critical thinking, problem-solving, independent research based on students' questions, and student collaboration. Further, inquiry-based teachers intentionally connect learning theory to daily practice and use knowledge gained through their relationships with students to guide them. In the previous chapter, I described how the research led us to two emergent themes. In this chapter, I describe how the two emergent themes became the

Table 7

Phase Two Research Methodology and Activities

Activity	Participant/Date	Evidence Collected
Interviews #1	Denise Huey – 2.27.18 Andy Snyder – 3.7.18 Megan Hall – 3.12.18	Transcripts of each individual interview
Interviews #2	Denise Huey – 1.24.19 Andy Snyder – 9.20.18 Megan Hall – 3.19.19	Transcripts of each individual interview
Interviews with Leaders	Nicki Fox, AP Impact Academy – 2.27.18 Kate Burch, Harvest Collegiate High School – 9.20.18 Dave Gundale, Open World Learning (OWL)– 11.2.18	Transcripts of each individual interview
Team Meeting #1	3.13.18 Andy Snyder Megan Hall Denise Huey	Meeting Transcripts
Team Meeting #2	10.30.18 Andy Snyder Megan Hall Denise Huey	Meeting Transcripts
Observation	Andy Snyder - 3.7/8.18	Observation Notes
Observation	Andy Snyder - 9.19.18	Observation Notes
Observation	Denise Huey - 12.6.18	Observation Notes
Observation	Megan Hall – 1.17.19	Observation Notes
Flipgrid	January, 2018 All three recorded Flipgrid presentations on artifacts of inquiry-based teaching and learning.	Flipgrid Transcripts

foundation for three findings. The second phase lasted a little over a year and provided us with an opportunity to understand inquiry-based pedagogy more deeply. Table 8 provides a roadmap for the analysis of phase two data from codes used to combine evidence into categories and findings.

Analysis of phase two research began with the foundation of the emergent themes from phase one. That foundation included an understanding of how one's experience as a learner impacts the kind of pedagogy a teacher favors as well as an understanding of the complex nature of an inquiry-based teaching and learning pedagogy. Phase one analysis provided an understanding of how a teacher creates complex systems and structures to carry out inquiry-based pedagogy. In phase two, I was able to build upon these two emergent themes from phase one and provide a deeper understanding of what it means to be an inquiry-based teacher of students with multiple challenges to success. The following findings came from phase two of the research:

- Inquiry-based teaching and learning is complex and requires each teacher to build their own systems and structures that allow students opportunities for deeper and more meaningful learning experiences.
- Relationships between the teacher and students are significant and must be deep enough for a trusting and caring learning environment to exist in order for inquiry-based learning to thrive.
- Teachers who practice an inquiry-based pedagogy need the support of their colleagues and their school leaders in order to continue to build their practices.

In the interviews with the three teachers and the subsequent interviews with the school leaders, each teacher created complex inquiry-based systems and structures to meet student

Table 8

Codes, Categories and Findings

Codes	Categories	Findings
Scaffolding as a strategy Student voice and choice Empowerment of students as independent learners and thinkers	Pedagogy and practice	The three teachers have built systems and structures that reflect the complexity of inquiry-based learning and teaching
Caring Learning Environments Deeper learning	Relationships between students and teacher	The three teachers have built relationships with students that foster trust in the service of learning
Collective efficacy of teachers Shared pedagogy and practice	External support for teacher growth and development	The three teachers have used their school-based colleagues as a means for continued development of their inquiry-based practices

needs and drive learning. As well, the three teachers in this study build strong relationships with their students in the service of on inquiry-based pedagogy. Focused on their continued development as inquiry-based teachers, the three participants received the support they needed for their development from their colleagues and their school leaders.

In this chapter we will continue to examine and dig deeper into the complexity of the inquiry-based pedagogy that the teachers developed for their classrooms. Inquiry as a complex system serves as a keystone which brings together all three of the findings. Figure 5 demonstrates the relationship among inquiry as a complex pedagogy, the importance of building student relationships in the service of learning, and the necessary reliance of inquiry-based practitioners on their colleagues school leaders to support their pedagogical development.

Next, I look closely at the first finding. The three teachers have built systems and structures that reflect the complexity of inquiry-based learning and teaching. In this section, codes from the previous chapter around the complexity of inquiry-based learning and teaching are integrated into the codes from phase two of the research. In this chapter, three codes provide a deeper and more complex understanding of the kinds of systems and structures that the inquiry-based teachers in this study built. In addition to the teacher's voices, I integrated the voices of leaders in their building in order to gain a better understanding of the support and guidance at all three teachers in the study receive.

Theme #1: Inquiry-Based Teaching and Learning is Complex

The complexity inherent within any inquiry-based system became evident throughout both phases of the research. This finding has acted as a keystone that holds the other two findings together. In other words, the relationships that the three teachers built with their students (finding two) and the support they received from their colleagues in their school (finding three) have been

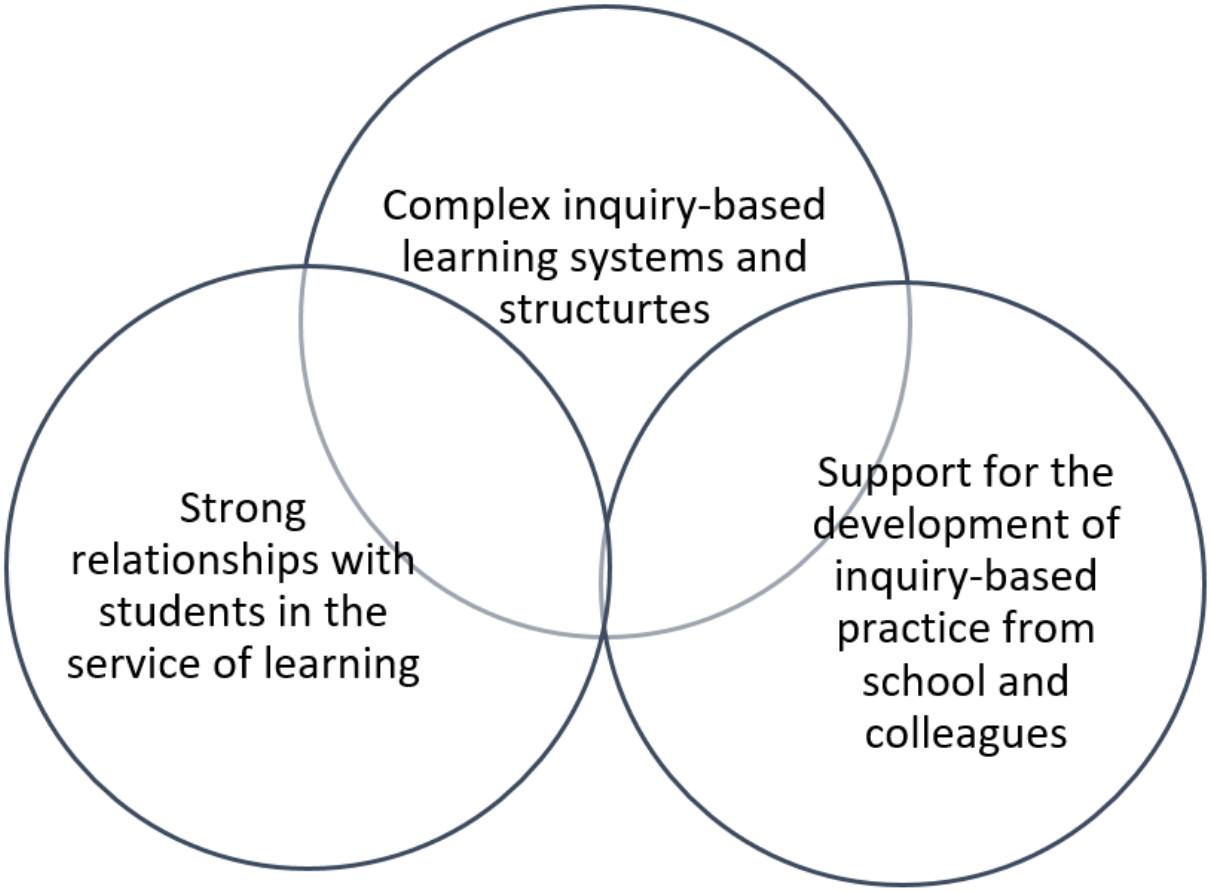

Figure 5. Relationship among the three findings.

in the service of building that complex, inquiry-based learning system in their classroom. It is also important to note that each one of the three teachers built out their inquiry-based pedagogy in different ways. In other words, there is no one inquiry-based pedagogy. Each teacher created a unique system that fit within the context of her or his school and the school's mission and vision as well as in the context of the community in which each serve.

Inquiry-based learning is not a pedagogy that can be standardized. It is complex from planning to implementation. Inquiry-based teachers must build that pedagogy through professional learning, experience, and deep reflection. While it is important to note that each teacher approaches the work differently, the codes offer common intersections for this finding. Further, Table 9 demonstrates the frequency with which each code was evident during the interviews, team meetings, classroom observations and Flipgrid presentations taking place throughout phase two. The emerging codes were scaffolding, student voice and choice, and student empowerment. I review each code in more detail.

Scaffolding as a Strategy

All three teachers articulated systems or structures for the way in which they scaffold for students in skill and content. The teachers put supports into place to help students master skills and understand content over time through a variety of experiences. Scaffolding was so prevalent in their practices that this code came up most frequently in the interviews with each of the teachers and through the observations of the classes. In Megan's classroom, content is organized around learning expeditions. Expeditions are long units of study that culminate in student-designed projects. Megan described how she approaches scaffolding over the course of a year as students work on multiple projects, saying, “When they (the students) create the cell project, their task is pretty straightforward. They’re matching form and function of cell parts…So it's

Table 9

Complexity of Inquiry-Based Systems and Structures: Frequency of Attention for Each Source

	Interview #1 (three 1-hour sessions)	Interview #2 (three 1-hour sessions)	Team Meeting #1 (one 1-hour session)	Team Meeting #2 (one 1-hour session)	Observations (four classroom observations)	Leader Interview (three 30-45 minute sessions	Flipgrid (3 three minute recordings
Scaffolding	11	11	0	2	8	3	0
Student Voice and Choice	12	11	3	5	10	8	3
Student Empowerment	20	28	9	13	9	13	3

very knowledge-based in terms of their thinking. So, as we moved through the year now on our next project, everybody is creating the same product, which is a game, but their task is at a higher cognitive level. They'll be working on more of-- instead of a knowledge-based project, it's, I would call it, a reasoning-based project" (M. Hall, Interview, March 12, 2018).

A similar kind of scaffolding was evident in Denise's classroom. In an interview, Denise described how she scaffolds academic conversations. She has "students practice forming an opinion around something. It might be math related. It might not. And then transferring that to a Socratic seminar…Practicing having an opinion. Backing it up with evidence. Listening to other sides" (D. Huey, Interview, February 27, 2018). In the same vein, Andy described one of his approaches to scaffolding during an interview, sharing, "Every time they do a turn-and-talk, or every time I ask them. 'This student says this; what do you all think is the right response to that?' Or, 'This is what this quote seems to be saying. Do you agree or disagree?' And they work through that together, that's building those skills" (A. Snyder, Interview, March 7, 2018).

In inquiry-based classrooms, the scaffold that each one of the participants described, while attendant to specific skills, seems to focus much more around deeper thinking end understanding increasingly complex content. I observed this in Megan's class as she was setting up for what she described as carousel presentations. Students would rotate around the class to hear other groups of students present their work on cells. The students had created three-dimensional sculptures that contained the parts of a cell. Several times she told the students that this was just the beginning of their understanding of biology and that each project would provide them with a deeper understanding. She appeared to be scaffolding her feedback to each group. As she went from group to group, her questions and feedback were different based on where

each group was in articulating their understanding of cells (M. Hall, Observation, January 17, 2019).

Both Megan and Denise reflected on how scaffolding was not just during the time that students were with them but over the course of their enrollment at the school more generally. In describing projects that students do at their school, Megan said, "The projects start out much more structured, and then there's a gradual release of responsibility to the student over the years" (M. Hall, Interview, March 12, 2018).

Denise talked about the impact of scaffolding from another perspective. In the 2018-19 school year, she had the first class of ninth graders from the new middle school that shares the same mission and vision as Impact Academy. She said: "[M)y ninth-graders this year are the first ninth-graders that came from our middle grades. And so they've been also practicing on defending their learning or defending something, right? Defending their work, defending their reasoning, and I think that shows, because the communication skills [are] a lot stronger than other ninth-graders that I've had in the past" (D. Huey, Team Meeting, October 30, 2018). Nikki Fox, the assistant principal at Impact Academy echoed this sentiment in talking about scaffolding toward a final senior project, saying, "I think it also comes from—in terms of structure of the school—looking at the end, to really understand where to start from. The end piece is making sure that our kids have that presentation and those skills needed for the real world" (N. Fox, Interview, February 27, 2018).

In an interview, Dave Gundale, Megan's principal at OWL, described how good teachers and schools constantly think about scaffolding for all students:

> "So, everything from things like turn and talk with your neighbor to things like small group discussions and then a sharing out, to things like peer critiques, those are very

> powerful. And peer critiques are often a follow up by self-critique… So by the time you get to these higher level things, whether it's a class presentation or a Socratic Seminar or fishbowl where you're literally one of four kids being observed by 24 to 25 kids, you've developed this comfort level to be able to do that" (D. Gundale, Interview, November 2, 2018).

An analysis of the various artifacts revealed that the three teachers and their schools saw scaffolding as part of the natural course of learning in an inquiry-based environment. They drew direct connections between scaffolding and empowering students to have more control over their learning, which includes more voice and choice. Next, I analyze how each of the three teachers empowers students through greater voice and choice as part of an inquiry-based learning system.

Student Voice and Choice

Student voice and choice is often times portrayed as choice in the type of assignments that students might do, the way they might present their understanding, or the manner in which the class operates. These are all important ways that students express their voice and choice and were clearly present in each of the teachers' contexts. Student voice and choice came up frequently in the interviews of all three of the teachers and in observations of their classrooms. It was also an important point for the school leaders and came up repeatedly in each interview with school leaders.

In one observation of Denise's class, her students were taking a quiz and were given three choices of problems to solve. In talking with several students, they said that the problem on the left side of the paper was easiest, the middle was slightly harder, and the problem on the right side was the hardest. After walking around the classroom, I noticed that most students chose the middle question, and the next largest group of students chose the hardest question (D. Huey,

Observation, December 6, 2018). One student told me that he chose the problem on the left because he did not feel like he understood the content yet and another student said she chose a question on the right because she always tries to push yourself (D. Huey, Observation, December 6, 2018). This kind of choice was common seemed to be common, and the students were thoughtful about what they selected and empowered to make a selection that fit with their needs, goals, and priorities.

Megan described how she used student voice and choice to develop a learning culture, stating,

> "I really believe that students learn better when they feel good, when they're comfortable, when they're even having fun - on-task fun, but fun. It gets very important. And when students have a voice, like they have a say in how the culture of a class evolves over the course of a year, and then when they have choices in terms of what they'll do to learn the non-negotiable standards that are set forth by the state, I feel like...they're learning is not just about what's happening in their minds and the growth of their cognition, but also that they're trying to identify themselves as scientists, to identify themselves as scholars, and to feel like they belong in the learning environment" (M. Hall, Interview, March 19, 2019).

Similarly, in between my visits, Andy had restructured aspects of his class to increase student voice. During a phase two observation of his class, I talked to three students who described that restructuring, learning that he changed the format in the last two weeks to be more inclusive and student driven. The main change was to establish study groups that would work on various aspects of the economics text and bring that back to other students. The students I talked with felt that the classroom was better now – it is a bit easier – they had each other to learn from,

with one student reflecting being more connected and another talking about less memorization (A. Snyder, Observation, March 8, 2018).

While these are all important examples in one sense, they seem to serve as entry-level forms of choice and voice for students. Beyond these, each of the teachers took voice and choice further and sought to help students find their voices when it comes to important and relevant content, including when developing their perspectives and opinions on significant content.

During our team meeting, Denise talked about how student voice is connected to helping students build their perspectives and opinions. “Student perspective is really important” she stated, “in my class, I try to have students’ value or show that there's value in their perspective in their opinion whether I agree or disagree, but I'm not going to devalue theirs, right? But using the academic conversation (format)…Giving them some sort of a prompt and just saying, ‘Using evidence from your personal life, because that's valuable.’ Like how can you use that to back up whatever your claim is?” (D. Huey, Team Meeting, October 30, 2018).

Dave Gundale, Megan’s principal gave an example of how his teachers used student voice to deepen their understanding of meaningful content. “So, I think we've done a lot of work around getting student voice at the center of things. I think some of the strongest lessons I've seen are students that are doing background work on content, but then bringing it to what we call a fishbowl activity where students are on the outside observing a group and inside, we cycle kids through on that. And so they have to come ready to present and defend positions on things. I think those are some of the strongest lessons” (D. Gundale, Interview, November 2, 2018).

Andy talked about helping students build their perspective during an interview, sharing, “At no point am I going to tell them this is the one right answer. They’re very clear on that. I’ll tell them this is my version of Buddhism, but Benedict (a student) might contradict me. So that’s

also encouraging this uncertainty of collaborative inquiry, rather than they're just supposed to just write down what I think" (A. Snyder, Interview, March 7, 2018). In another interview, Andy, in talking about what is important to him as a teacher, said, "It turns out that there is this openness to development and openness to other voices. I sort of insist on that in my classes, and that is what the curriculum is designed to do" (A. Snyder, Interview, September 20, 2018).

In an interview with Andy's principal, Kate Burch, she talked about student voice and choice in relation to equity. "We have students like Caitlin… is writing a 20-page really original paper about the history of Chicana feminists. And then, other struggling students, getting them to write an original paper and I think it's such a foundational piece for equity in a way that just standardized tests will always drive kids apart" (Kate Burch, Interview, September 20, 2018). In one of my visits to Andy's class I observed how student voice played out in a discussion on religion and race. The dialogue was between three students, who talked about their perceptions about race and religion. The questions were compelling, and the atmosphere in the classroom was open to students exploring these ideas with each other. When the conversation got going, Andy took a backseat and let the student discourse flow uninterrupted. The conversation was not really about conflict or having different ideas but more about sorting out religion and race. The students were asking authentic questions of each other. This was a multiracial class and students used their experiences to describe what they were seeing and their own perceptions. An African American male student said that he thought that all white people were Christian or Jewish and described his aha moment as he talked through his perceptions. While he was talking, it became clear that he was Muslim and at one point he asked about whites that converted to Islam (A. Snyder, Observation, March 6, 2018). What seemed to me to be so powerful in this conversation was the vulnerability that students showed in not knowing something in asking each other to help

them understand. It was a deep conversation and students used elements of what they learned about religion to help them sort through their own opinions and build new understandings through intentional dialogue.

Throughout my career as an educator, I have participated in lots of discussions about student voice and choice. Most of the discussions have been at what I would describe a low level in terms of how teachers might help students access their voice and the kind of choices that students are given. Typically, we would talk more about voice and choice in terms of classroom operations, assignment management and time management. The three teachers took voice and choice to a deeper level to empower students -- not just over the process of their learning but over the content which they would experience in class. Next, I look more closely at how the teachers have used inquiry to empower students as learners and as democratic citizens with the power to change their world.

Empowering Students

All three teachers spoke to the importance they placed on empowering students. empowering students came out in the interviews and observations in multiple ways. In both sets of phases two interviews with the teachers, as well as the interviews with the school leaders, the code was most prevalent. I observed teacher actions to empower students multiple times while visiting each class. Student empowerment connected to several of the codes from the previous chapter within the emergent theme of complexity. In phase one, the participants talked about and implemented processes that were designed to create greater student autonomy over their learning, co-constructed learning alongside their students, used controversy as a means of helping students develop their own ideas in their own opinions, and, in some cases, helped students see themselves as change agents in their community in the world. In phase two, the

compilation of additional evidence made it clear that the teachers go deeper into these areas than previously evidenced, with particular emphasis on student empowerment over their own learning and experiences.

In Denise's classroom, a series of tri-boards were on tables on one side of the room; these represented student artifacts from an assignment that took place earlier in the year in which students chose two different college options and looked at the cost, debt potential, and earnings for careers that interested them (D. Huey, Observation, December 6, 2018). The project was designed to empower students over their future, arming them with information to support their choices. The project, which was part of the ninth-grade math course, was designed to help students begin thinking about their future early in their high school career. In Denise's words, the goal was to "empower students with the skills and knowledge in order to have power over their own learning and their future" (D. Huey, Interview, February 27, 2019).

Denise reflected on student empowerment in relation to her instruction and whose questions get asked and answered in classes. "If I'm the one asking most of the questions … it's kind of like a tricky balancing act, right? I have to ask the right kind of questions to get students engaged," she said. "They have to keep asking more questions, and the right questions, to stay engaged, and also become passionate about whatever it is. Right?" (D. Huey, Interview, February 27, 2018). Denise's reflection points how empowerment goes beyond what we know and learn cognitively and includes our emotions and personal connections to the content. During our team meeting, Denise described how she helps students used evidence from their lives on a statistics unit, "I try to have students' value or show that there's value in their perspective in their opinion whether I agree or disagree… Giving them some sort of a prompt and just saying, 'Using

evidence from your personal life, because that's valuable.' Like how can you use that to back up whatever your claim is?" (D. Huey, Team Meeting, October 30, 2018).

Megan discussed student empowerment as something that happens over time in her class. "So, over the years, students take on more of the details. There is always a rubric. There needs to be some clarity about the expectation. But the scaffolding structures eventually get removed. You know, my goal for them ultimately is to be a college student, and then a professional who can create. There is not going to be a roadmap for most projects when you're an adult" (M. Hall, Interview, March 12, 2018).

Her comment spoke to how student empowerment is connected to their current learning as well as the students' futures in college and career. Andy spoke to this point in broader terms during an interview as well, "I always think of it as deepening; that we're trying to help them deepen certain aspects of themselves" (A. Snyder, Interview, March 7, 2018). Later, in the same interview, Andy discussed how he works with students to deepen that learning, "I'm always trying to sort of dramatize these conflicts and contradictions…we really need those points of conflict or contradiction, or drama to serve as sort of like Hansel and Gretel little pebbles that we've left, so that we can find our way back to a big insight that we've had" (A. Snyder, Interview, March 7, 2018).

The three teachers recognized and discussed how student empowerment goes beyond what they are learning in school and for their futures. In an observation of Denise's class, she began the lesson with students analyzing immigration data related to the Deferred Action for Childhood Arrivals (DACA) and having a conversation with another classmate on a social media platform. Students were fully engaged, and the room was silent as they were typing their ideas and responses onto the social media platform (D. Huey, Observation, December 6, 2018). The

lesson was designed to support students to use math as they began to develop their own ideas and opinions. Many students in the class were immigrants or from families of recent immigrants, and the issue touched their lives and the lives of many in their communities. In an earlier interview, Denise talked about the importance of connecting real-world data to students' own lives (D. Huey, Interview, February 27, 2018).

Much of Andy's work on empowerment was tied to supporting students as they tackle issues, conflicts, and contradictions with real problems beyond the walls of school. During an interview he told me, "I think if there is any hope for a democratic restructuring of the United States or, hopefully, beyond—then it will be when people learn to work together in a very deep way and a very skillful way, and that we learn to lean on each other and work with each other, and work against problems together, problem-solving" (A. Snyder, Interview, March 7, 2018). Later in the same interview he went on to say that he hopes that the work he is doing with students "…will lead to them standing up together against their landlord, or against somebody who is sexually harassing them, or whatever" (A. Snyder, Interview, March 7, 2018). Each one of the teachers expressed the idea that the work as inquiry-based teachers is designed to empower students to actions that go far beyond the walls of the classroom.

Finally, in an interview, Andy helps us to think about how inquiry has to be owned by the students: "I guess I would say if we wanted to get people to real inquiry, that actually burns, then they have to identify the questions that really burn for them and for their students, and then they have to make those questions the center of their curriculum" (A. Snyder, Interview, September 20, 2018). That ownership is what drives and engages us as learners and it is significant that our students need both the opportunities and the skills to ask questions that interest, engage and connect with them. For teachers, that requires deeper and stronger relationships with students.

The complexity of an inquiry-based pedagogy requires that each teacher thoughtfully approach his or her curriculum design and focus on the needs of their students in relation to building complex skills and the content they select. Each teacher in the study approached that complexity differently and constructed learning experiences that were scaffolded, offered a significant amount voice and choice, and, in the long run, empowered students as learners and problem-solvers. In the next section, I look closely at how each one of the three teachers cultivates and maintains relationships with their students and how they use those relationships to support student learning and success.

Theme #2: Inquiry-Based Teachers Form Strong Relationships with Their Students

The three teachers in the study all emphasize the significance of building relationships with students. In each of the data collection activities, relationship building is a prominent theme. Table 10 speaks to the frequency with which relationship-building was documented during the data collection process.

The three teachers approached forming and sustaining relationships with students differently, yet all viewed doing so as an important way to help students build skills and deepen their thinking and understanding. The teachers found different approaches and were often aided by structures within the school. All of the schools had advisory-like structures for students to publicly present their thinking, and student-led conferences that required deep trust between the student and the teacher. Student relationships were most frequently discussed in the final interview with the three teachers. The school leaders cited relationships, particularly in the context of using relationships to support deeper learning. These instances were corroborated in my observations, in which I saw firsthand how the teachers leveraged their relationships with

Table 10

Building Strong Relationships with Students: Frequency of Attention for Each Source

	Interview #1 (three 1-hour sessions)	Interview #2 (three 1-hour sessions)	Team Meeting #1 (one 1-hour session)	Team Meeting #2 (one 1-hour session)	Observations (four classroom observations)	Leader Interview (three 30-45 minute sessions	Flipgrid (3 three minute recordings
Strong relationships to cultivate a caring learning environment	4	10	4	4	3	1	0
Strong relationships for deeper learning	9	9	2	4	8	4	2

students in the service of advancing student thinking. Next, I analyze how relationships with students impacted learning and instruction and the culture of the classroom.

Strong Relationships to Cultivate a Caring Learning Environment

During one observation of Denise's class, I was struck by how she began instruction. The class was crowded, yet the students seemed relaxed and prepared. They retrieved laptops and began working without any prompts from the teacher. Instructions were on the screen, and students went to work while having side conversations with their friends. Without prompts from the teacher, the side conversations ended as the students became more focused on the work at hand. Denise walked around the class greeting students by name and checking in on their progress. There was a lot of comfortable bantering back and forth between students and Denise. She stopped at one student's table and loudly told him she could never read his handwriting. She told the students to wrap up their thinking and immediately students asked for more time. Denise and the students negotiated extra time (D. Huey, Observation, December 6, 2018). What I had witnessed is an example of how good relationships with students impact the classroom environment. Students were on-task throughout the opening of the class, and they were able to successfully negotiate the time needed with their teacher. I saw evidence in the opening of the kind of relationships that the teacher had built with the students. There was clearly a culture in the classroom that was based on co-constructed learning. The relationships that the inquiry-based teachers had built with their students were evident in the classes of all three participants.

In an interview with Megan, she captured what I saw in Denise's class, "I think that when we're doing an inquiry experience in a science classroom, it's the culture and climate of the class that has, I think, maybe the biggest impact on social-emotional learning. So, the warmth that's present in the classroom, the way that I build relationships with kids--knowing their names,

saying their names, having a nonessential conversation so they know that I care about them as a human being" (M. Hall, Interview, March 12, 2018). While relationships are important for all teachers and students, the relationships between students and teachers in successful inquiry-based classrooms need to be deeper and more complex because the teacher leverages the relationships to push thinking. In part, as we have seen in the previous section, students in an inquiry-based classroom are more active and are partnering with their teachers to conduct more complex work around significant content.

Andy captured that notion during a team meeting with the all three participants when he said, "It's much more motivating for a student to be in a conversation with me where I take them seriously and we're working something out together or figuring out how to do something together, sort of [like] comrades" (A. Snyder, Team Meeting, March 13, 2018).

The partnering between these teachers and their students in an inquiry-based classroom is one aspect of how strong relationships impact the culture of the class. With all three teachers, that partnership seemed to open doors for students to access and build their social and emotional skills. In a visit to Andy's classroom one day, I observed a discussion about music between him and several students as the class was just getting started. He had mentioned several musicians that he did not like and several that he did like. Other students were doing the same thing. At one point, one student said that Andy was racist because all the musicians that he liked were white, and all the ones he didn't like were musicians of color (A. Snyder, Observation, September 20, 2018). This interchange had the potential to move to anger but what followed was a calm conversation about music, racism and our own personal history. In a conversation with Andy later that day, he commented on the interchange: "One of the things that I have come to realize is that it's important to foreground the caring because otherwise it just comes across as

antagonistic. So, for instance, I got away with the conversation…today partly because I asked him (the student who accused Andy of being racist), what's your favorite music? And he said, Madonna, Ray of Light. And so, I put on Madonna's Ray of Light, and we listened to that a little bit. So then if you have that kind of connection, then you're allowed to be a little bit more provocative" (A. Snyder, Interview, September 20, 2018).

In a team meeting, Megan discussed how she uses her relationships with students to help them access their emotions" "It's about feeling something. And sometimes it's better to feel dismay or sadness—especially if you're trying to gear kids up for an authentic product and you're trying to get them to do or make something to change something" (M. Hall, Team Meeting, March 13, 2018).

Setting a strong classroom culture not only supports individual students but also the collaboration between students. In an observation of Denise's class, her students were discussing immigration data in pairs. Since many of the students in the classroom were immigrants, it was an emotionally charged assignment. The students stayed on-track and had deep discussions about the data in part because they had a strong protocol around collaboration. In a side conversation as the students were working, Denise pointed out that she had been using the protocols as a way to help students build collaborative relationships (D. Huey, Observation, December 6, 2018).

In an interview with Andy, he captured the theme about the importance of collaboration to a community of learners and his role as an inquiry-based teacher, saying, "(T)here is a real desire to connect with other people on this base of shared experience and shared connection on real things that matter to us. And to some extent, all I do is I surf along that wave. To what extent am I creating that? I don't know. But I am certainly trying to work with it" (A. Snyder, Interview, March 7, 2018).

Strong learning communities are important for students. Clearly, the strength of those communities is built upon the relationships that exist between the teacher and students, and those that the teacher help fosters among students. In the long run it is important that the relationships go beyond building a trusting and caring environment. Next, I examine how the three teachers used their trusting and caring relationships to deepen the learning.

Strong Relationships for Deeper Learning

All three teachers were clear about the importance of developing strong relationships with their students in the service of student success. This is especially true when employing inquiry, a complex pedagogy that requires students to be active learners and meaning-makers of content. In an interview, Megan describes why she works to form such strong relationships with her students, "(S)etting that tone of inclusiveness and building the relationship helps me leverage – I'm totally unrepentant about this – I leverage the relationship for their learning. Once we get into a place where they feel safe and they trust me, that's when I bring in the academic press" (M. Hall, Interview, March 12, 2018).

In Andy's classroom, the predominate practice is whole-class discussion. He describes how learning needs an element of danger, "(S)o they're willing to be in danger, and they … I think it adds a spark of … emotional intensity that you wouldn't get if everybody was being polite, and everyone was keeping their distance. That spark of emotional intensity I think helps them sometimes break through to new ways of thinking or new ways of seeing the world, or new ways of relating to each other that are the point of what we're trying to do… But at least from my practice of teaching, there needs to be that intensity and authenticity—which I find only happened in moments of danger" (A. Snyder, Interview, March 7, 2018).

Fostering relationships with students taps into social, emotional, and cognitive aspects of ourselves and reflects a more authentic understanding of content. For Denise, strong relationships support her students to explore their lives and experiences and to value other perspectives. “I try to have students value or show that there's value in their perspective in their opinion whether I agree or disagree, but I'm not going to devalue theirs…Giving them some sort of a prompt and just saying, ‘Using evidence from your personal life, because that's valuable’ Like how can you use that to back up whatever your claim is?” (D. Huey, Team Meeting, October 30, 2018). In an interview, Andy discussed how his attention to relationships created openings for students to consider multiple perspectives. “So opening up the classroom so they're getting to have these multiple perspectives and have these multiple voices involved, I think makes the inquiry come alive because they see this as a question not just for the teacher or for the students, this is a question for a lot of us including people that they love” (A. Snyder, Interview, September 20, 2018).

On more than one occasion, Andy has spoken about the ways in which relationships with students allows him to integrate controversy into the classroom in an effort to deepen students’ learning. In one interview he talked about the content he selects:

> “I try to find topics that they will have a reaction to, to poke at them with. And then I try to make it clear, I think one thing that's really, really important is to not crush them when they disagree with me, or not crush them when they have a reaction that I don't agree with. Instead I just say, ‘Oh, I see that point that you're making here,’ and to support them in dissenting. I think that's a really important thing.” He goes on to describe himself, “I do think I'm too risky and a lot of times I try to tone it down because it's often not worth

it, but I do think that genuine education requires it" (A. Snyder, Interview, September 20, 2019).

Relationships supported the development of practices that are geared toward greater inclusion. Megan talked about this in describing her use of discussion protocols, offering, "when we do those discussions, I feel that the structure and the framework for the discussion is what leverages the relationship. So, it's very natural in a discussion for some individuals to dominate, and for some to hang back. And it can feel like a put-down for a talkative student, if you tell them to be quiet and wait their turn. But if you have a good relationship and they know you like them--then it's not a personal criticism when you say. 'All right, you've had your turn; it's time to listen'" (M. Hall, Interview, March 12, 2018).

The three teachers clearly use their relationships with students to build an inclusive and comfortable classroom and to go further and deepen student learning. Denise talked about how her relationships with students and her knowledge of their lives and experiences have "led to having high expectations of students." She discussed how high expectations in an inquiry-based classroom leads to higher quality thinking and work (D. Huey, Interview, January 24, 2019). In a similar vein, Megan talked about how her relationships with students impact her ability to give feedback in the service of deeper learning. "So, I think the relationship can … it takes the sting out of critical feedback. And it makes it easier to grow, because the growth isn't about what's wrong with me--it's about what I can become and what this person sees in me, and how they appreciate me" (M. Hall, Interview, March, 2018).

For these teachers, relationships play a central role in supporting their students in complex learning environments. Their relationships with students not only create an inclusive and welcoming culture in the classroom but offer opportunities for teachers and students to take

the learning deeper and to work collaboratively on multiple levels. In the next section, I turn to an exploration of how the school leaders and colleagues of these teachers have supported them on their journey to becoming stronger inquiry-based teachers.

Theme #3: Inquiry-Based Teachers Learn from Colleagues and School Leaders

I had been teaching for seven years before I taught in a school in which teachers and school leaders actually talked about a common pedagogy. Prior to that, I have no memory of any conversations or professional development that spoke to a common pedagogy or a common belief about student learning. I did not even know if the high school where I first taught had a mission and vision. In the summer of 1995, I was hired as part of the founding faculty to teach at a new middle school. When I interviewed for the job, the first question the principal asked was about my pedagogy. This was followed by a series of questions about project-based learning, collaboration between teachers, and alternative forms of assessment. When I left that interview, I knew I had found a home. Over the next four years, I taught in a dynamic middle school that not only had a common pedagogy but also supported teachers to develop that pedagogy. Our staff meetings looked like high-quality professional development and we would talk about theoretical research, specific students, and our developing curriculum. I would never again work in a school where there wasn't a shared philosophy about learning and teaching. When I first met with Andy, Megan and Denise, I found kindred spirits in this work.

Based on my own experience, it came as no surprise that all three teachers in the study spoke to the power of their colleagues, their leaders, and their school model in the development of their practice. What emerged through the research was a major theme that focused on the role of the school leader and colleagues in the continued development of all three teachers. Each school used an external model that provided pedagogy and practices that were embedded

throughout multiple areas of the school. Two categories supported the development of this finding. The first category speaks to the collective efficacy of the teachers and the school leaders in terms of teacher development around inquiry-based learning and teaching. The term "collective efficacy" used in this way first came to my attention in an interview with Denise as she was describing the approach that her school and charter management organization have taken toward professional development and teacher growth. Although the term came from Denise's setting, the idea behind it was common across all three schools. The second category focuses on shared practices and protocols within each school, a factor that impacted the teachers studied. Table 11 identifies the frequency that each of these categories were talked about in the interviews and team meetings.

Collective Efficacy

All three teachers spoke about the teams they served with by reflecting on the power of their colleagues to support their development as individual teachers. Collective efficacy appeared most frequently in the last interview conducted with the teachers, and also appeared widely in the interviews with school leaders. Similarly, the concept arose as a topic in both team meetings. Denise spoke to this notion of collective efficacy in her school during a team meeting, "I mean there's this idea of getting feedback. And as students, we always tell them to embody a growth mindset, right? All the time. But how do we provide those supports for ourselves and our colleagues? And I think if that's not there, then you don't want to do better. And if you don't do better, then there's no growing and getting better. And so this year at my school, there's this idea …this network-wide goal around collective efficacy" (D. Huey, Team Meeting, October 30, 2018).

Table 11

The Role of School Leaders and Colleagues in Supporting Inquiry-Based Practice: Frequency of Attention for Each Source

	Interview #1 (three 1-hour sessions)	Interview #2 (three 1-hour sessions)	Team Meeting #1 (one 1-hour session)	Team Meeting #2 (one 1-hour session)	Observations (four classroom observations)	Leader Interview (three 30-45 minute sessions	Flipgrid (3 three minute recordings
Collective Efficacy	5	10	4	5	0	9	0
Shared Pedagogy and practice	4	7	8	3	0	8	0

She went on to describe one strategy that teachers were using to build that collective efficacy, “there’s always something that we are learning, and kind of pushed to try out in our classes. I think having this mindset of always learning new teacher moves, learning strategies, really cool things about … that we’re doing with our classes. Almost every Friday—and sometimes it’s me, but other teachers—the subject in the email that goes to all of our teachers at our school is, ‘Friday joy.’ And we just share really cool things that students are doing, that we are really excited about trying out” (D. Huey, Team Meeting, March 13, 2018).

In an interview, Andy described the power of teaching in a school where the adults learn from and with each other. “My practice has certainly gotten better in many ways because of being at this school, and the emotional ways are probably among the most salient. And also the students being at all different levels has forced me to build some things better” (A. Snyder, Interview, September 20, 2019). In that same interview, Andy also described how that collective efficacy is realized by students. “There aren’t very clear systems…and there's more than a plethora of things happening rather than a few things happening well. But the students genuinely feel, as you said, cared for and they also genuinely feel as if their intellectual development matters. And they are likely to walk into the room with the orientation of something good might happen here, and this person might be a good person for me to pay attention to, and for me to learn from, and fun to talk to” (A. Snyder, Interview, September 20, 2019).

The presence of collective efficacy was felt in all three school communities. Equally obvious was that none of the schools left this notion of collective efficacy up to chance or assumed that it would just happen if you put a group of talented teachers into one school. Instead, they meticulously built systems and structures for their teachers to share and grow together. At OWL, Megan described how teachers were in charge of staff meeting agendas and

professional development, instituting multiple structures, including staff meetings to bring teachers together including common preps and PLCs (Megan, Interview, March 12, 2018). Her principal echoed this, describing how he works with the leadership team in the school. “I've figured out that I have to…come to our leadership team where we as a democratic, collective group sit down and say, ‘This is what we need to move us forward in this area’” (D. Gundale, Interview, November 2, 2018).

At Impact Academy, the Assistant Principal described a structure that allowed for teachers to learn from each other. “We’re about to do this thing called ‘March Madness,’ where it’s kind of like a bracket, and you get points for going to observe teachers; you get two points if you observe teachers in your same grade, and you get other points if you observe teachers in another grade and subject” (N. Fox, Interview, February 27, 2018). For Impact Academy, ‘March Madness’ is designed to support teacher growth no matter how much experience a teacher has. Assistant Principal Fox described it this way: “[T]hey want to get better at their craft. We have a ton of teachers here who are like that, and that is very infectious. As school leaders we also do our best to try to cultivate that infectiousness and put that into our PDs, to make sure that’s being shared out and it’s not just siloed in her classroom” (N. Fox, Interview, February 27, 2018).

At Harvest Collegiate, Principal Kate Burch talked about structures that have been put in place for teachers to reflect and learn from each other. “So, we really have a… process of having teachers reflect on their curriculum, and we even changed, and I thought, ‘Wow, teachers are giving me these incredible reflections…’ We have this public presentation model, so we created on that June Chancellor's Day a teachers' summit where people present to a group of maybe a dozen other teachers their work every two years, so it wasn't so overwhelming. And then we felt

like, ‘Well, where is the house for sort of social-emotional learning and kind of all the student issues?’ So, we created a once a month adult advisory…” (K. Burch, Interview, September 20, 2018).

Another important element to teacher growth and collective efficacy has been the model that each school employs. Impact Academy is a charter school that is part of a charter management organization called Envision Schools. All of the schools that belong to this charter management network are grounded in a common pedagogy. In the team meeting, Denise talked about the power of the network, “I’m curious about what makes teachers choose an environment that supports thinking of learning as like a mutual endeavor between teachers and students, as opposed to something that teachers deliver to students. And I don’t know where I saw that question or heard that question, about what it would be like to be a teacher all alone taking this approach—surrounded by other teachers that don’t—versus I’m in a community where … I’ve been surrounded by teachers who assume that we will all take this approach. And so, there’s always actually some pressure on me to not phone it in, and to not just stand and deliver—but to really engage with my kids and modify what I do to fit what they need” (D. Huey, Team Meeting, March 13, 2018).

OWL, where Megan teaches, is part of a loosely affiliated network called EL Schools. She reflected, “Being an EL education school and having a special model--and being a special school that does something special and different--is very powerful” (M. Hall, Interview, March 12, 2018). In another interview, she talked about what she has learned from EL schools and how she uses that learning with her students. “So according to EL Education, complexity, authenticity, and craftsmanship are the three components of high-quality work. So, in order for

work to truly be high quality, it has to show evidence of complex thinking" (M. Hall, Interview, March 19, 2019).

In each school, the structures have proven to create a dynamic environment for teachers to grow over time. The structures and systems have been designed to meet teacher needs no matter what stage in their career. Next, I examine how that collective efficacy plays out in terms of common pedagogies and practices at inquiry-committed schools.

Shared Pedagogy and Practice

The collective experiences of Denise, Megan, and Andy demonstrate that shared belief systems are critical for teachers in inquiry-based schools. As we described earlier, shared goals and a committed approach create a collective efficacy within the school's community. The result of that collective efficacy can be seen as a shared pedagogy that is actualized through classroom practice. The concept that a shared pedagogy enabled the development of inquiry-based teachers came up multiple times in the team meetings, individual interviews with the three participants, and in the interviews with their school leaders. Similar to collective efficacy, shared pedagogy was both part of the routine practice at each school and a shared value.

At OWL, Megan described how she "feels really fortunate to teach in a school where student voice and choice are integrated throughout the program and they're the norm" in the school (M. Hall, Interview, March 19, 2019). Dave Gundale, the principal, described how that shared pedagogy becomes classroom practice at OWL:

> "So, going back to that question about some of the protocols and in honing in, we often talk about the focus things that we need to do in order to move our classes forward. So, at one point several years ago it was, 'We need to focus in on the first 10 minutes of class. We need to have students come in and do this and then we need to transition to this.' And

so, what we did is we defined what that looked like collectively. It wasn't me, the principal, defining that. It was based on, and everything we've done has been based on going and looking at different sorts of research and then putting forward an idea, and then providing a time to try it and then getting peers to observe it. So just like when students do peer critiques, our staff checks it out and supports each other to the best of our ability within our time frame" (D. Gundale, Interview, November 2, 2018).

Denise provided an example of how the Envision Network supports shared practices around feedback: "So, we started this process network-wide of giving a task and then analyzing student work, finding common themes, and crafting feedback. And so one of the things that I've been leading the ninth grade team network-wide and all the algebra and numeracy teachers is once we analyze student work, what is the feedback that we want to give…And so I'm pretty excited over the next-- I think we have to do this over the next few weeks. We're going to really focus on how can we know that students are making better sense of problems so that they can persevere in solving them" (D. Huey, Interview, January 24, 2019).

Denise further revealed her perception that shared practices impacted students within the network. At the time of this interview, a new middle school within the charter network had just sent its first group of students to Impact Academy for their ninth-grade year. Denise reflected on that experience, "Yeah. So, a few things have happened. So, the ninth graders in my class now came from our middle grades. So, they have actually been through Joel Key and the middle grade's teachers. They've been practicing already defending their work the Impact way, the Envision way. Right? And so, me having to push them a little bit further and saying, 'Yes. This is how you defend your work, and this is how you listen to other people and make your arguments stronger or change your argument or build on each other's ideas and synthesize

information.' And so, I actually had to change it a little bit this year… I slowed down a lot…" (D. Huey, Interview January 24, 2019).

It was the combination of a common pedagogy and shared practices that distinguished these three teachers and their schools from what we would consider traditional schools. Given the emphasis placed on aligning form, the schools each placed great value in the process by which they selected their teachers. Kate Burch, the principal of Harvest Collegiate where Andy teaches, talked about how pedagogy and practice help to frame her school's selection of new teachers. "A sense of self-critique is something we look for and then there's also that they've tried to design the curriculum with a serious question, and, ideally, bridges to the students' real interests, that those are signs that they're taking inquiry as one of the motors…of the brand new teachers we've hired, actually, all of them have done their student teaching in the (Coalition of Essential Schools) consortium" (K. Burch, September 20, 2018). Dave Gundale at OWL described the new teacher experience at his school by telling me:

> "Trying to provide as much support. If we offer a position, a person accepts the position, we have a mentorship program where a veteran teacher connects throughout the year as a go-to person, try to provide enough professional development to support, knowing that it's a huge learning curve coming into this model. As one staff member said, 'It's like drinking water out of a fire hose the first year.' There's just a lot. You're not just coming in to be an art teacher, but you're coming in to learn several different things that we do" (D. Gundale, Interview, November 2, 2018).

The selection process across the three schools is rigorous and transparent. This helps ensure that the teachers who accept positions are likely to be ones who recognize the importance of their schools, their school model, and their colleagues in the joint venture to educate youth. As

a teacher at one of these three schools, the teacher is not just accepting a position to teach a particular class or focus on a small group of students. Rather, the teachers join a community that is vigilant about inquiry-based learning and teaching, the adult collaboration that enables it, and the pedagogical model the school has committed to. The schools diligently develop systems and structures to ensure that their model comes to life in the classroom and that teachers have the opportunity and supports to grow into the model and increasingly ideate upon it, refining their approach as they further iterate on to fit the needs of their students. The rarity of such educational contexts within public schools, let alone those serving students from marginalized communities cannot be overstated. As the fifteen-month ethnographic study was nearing its end, the three schools were revealing themselves both as institution that attract remarkable talent and as ones that invest in continuous capacity building for their already skilled teachers.

Throughout the study, the depth with which all three teachers strive for quality in their teaching pedagogy is evident. One significant way that they have continued to improve their practices as teachers has been with their colleagues at the school that they currently teach, assuming roles as leaders, listeners, and learners themselves. Each of the three teachers have provided examples of how colleagues have pushed them and supported them to continue developing their practice. They have found power in the collective work of their colleagues. Part of that power comes from having the foundation of the shared pedagogy and practice. Secondly, while commending their colleagues, they credit their school leaders for creating the conditions for an inquiry-based pedagogy and their schools as places where highly qualified professionals could work together in deep and meaningful ways around practice and pedagogy.

Chapter Summary

The study yielded three significant and interdependent findings that guide the three teachers:

- Inquiry-based teaching and learning is complex and requires each teacher to build their own systems and structures that allow students opportunities for deeper and more meaningful learning experiences.
- Relationships between the teacher and students are significant and must be deep enough for a trusting and caring learning environment to exist in order for inquiry-based learning to thrive.
- Teachers who practice an inquiry-based pedagogy need the support of their colleagues and their school leaders in order to continue to build their practice.

As demonstrated above, the three findings appear related with the success of the three participating teachers. Furthermore, they are interdependent on one another. As stated earlier, inquiry is a complex pedagogy, and as thus, its success appears at least partially to insist on the co-existence of all three findings. In other words, strong relationships and a shared approach across the school exist in the service of a complex pedagogy.

This complex pedagogy is a natural byproduct of inquiry-based instruction, which by its definition requires sophisticated, often multidisciplinary problems to solve, relying on diverse skills including critical analysis, perspective-taking, storytelling and argumentation, all of which have appeared across the categories. When students are engaging in inquiry, they are tapping into their experiences to make meaning of new ideas, new processes, and new facts. This process of synthesis and creation relies on prior experiences as a foundation for student learning. As such, inquiry-based teachers must design learning experiences that consider and build from student's

prior experiences, a vulnerable undertaken that is enabled by strong, trusting relationships. Doing this relational work, while being a content expert and embracing a committed pedagogical stance is difficult work, requiring the support of a brilliant and like-minded leader and team. Likewise, understanding that inquiry-based teachers need to approach planning differently is critical. Their planning must go beyond teacher moves and isolated activities. Planning must be rooted in more holistic experiences that students have that tap into their social, emotional, and cognitive skills. The role that the teacher takes in an inquiry-based classroom shifts from that of someone who is directing and in most cases the center of all the action to someone who is facilitating the work that students are doing. In his book, *Making Learning Whole*, David Perkins (2009) asserts that the role of the teacher is not to play the game for the students, but rather to prepare the students with the skills and knowledge to play the game as best they can.

The complexity of inquiry-based learning is sustained by strong relationships between teachers and students, as well as a collective of colleagues and school leaders who share the philosophical foundations as well as common practices. Because of the role of experience as a catalyst for inquiry-based learning, the relationships that teachers have with must be based on helping students feel seen and known, developing mutual trust. As all three teachers noted, and was evident by the observations, the relationships between the teacher and student are leveraged for student thinking and learning. These are relationships that go far beyond being friendly with students and knowing basic information about their families. Rather, they are developed at a deep level and designed to support students as they persevere through the complexities of learning. They are designed to motivate students to go beyond knowing a set of facts. The relationships must help students tap into their curiosities and in many cases motivate them toward action.

Indeed, all three teachers in this study at one point during the last fifteen months faced the risks inherent with close relationships was students. In Andy's case, a difficult conversation about race was clearly aided by the prior relationship than Andy had with his students. They trusted him and trusted that he was a teacher that engaged in anti-oppressive efforts. They also knew that in class discussions, Andy sought out multiple points of view on issues. To a less risky extent, Denise created academic conversations that were controversial and had no right answers. Her students trusted her that they could wade through the various perspectives and deeply learn from each other. Megan developed experiences for students that required a deep understanding of other perspectives than the ones they held. In all cases, building trust and taking care to know students were evident on a daily basis and contributed to how students could take the emotional and intellectual risks needed to learn deeply through experience.

A similarly large question looms around whether or not these three teachers could have developed their practice in this way or have the same impact with students if they had been in a school environment where they were the under-supported as inquiry-based teachers. Within their mission-aligned schools, there seem to be multiple layers of interconnected influence that support these teachers as a developed their inquiry-based practices. In their own analyses, the three teachers acknowledged having greatly benefited from working with their colleagues, within the context of their model and under the direction of a school leader committed to inquiry generally and the school's model and its educators more specifically. On one level, shared pedagogy and practice had a tremendous impact on how students learn and apply those learning preferences in each of their classes. Denise's example of the change that she saw in her most recent ninth grade group because those students came from an Envision middle school, as opposed to several local middle schools following a more traditional approach. She described

how the continuing students seemed more prepared to do project work and to publicly present their work.

A crucial point is that the teachers are in schools that have systems and structures for colleagues to share best practices and co-create a common pedagogy. The systems and structures go beyond what might typically be found in a traditional school. The structures in the schools explicitly aimed to empower students, as well as teachers, and focus on the practices that made a difference in teaching and learning, not just test scores.

In the final chapter of this dissertation, I look closely at how the findings can be located within the existing body of research. I rely on the findings to support one more thought that may contribute to the field. In an earlier chapter, I described how each of these three teachers had significant inquiry-based experiences that led them to become inquiry-based teachers. Unfortunately, teachers with significant inquiry-based learning experiences are few and far between. Before concluding my work, I explore how the lessons I learned alongside Andy, Denise, and Megan may help support pre-service teachers or those early in their careers to experience inquiry both as learners and eventually as teachers.

CHAPTER 6: FINDINGS AND IMPLICATIONS

In 1988, a fellow teacher and I opened a small contract-alternative school in Minneapolis for students who were either in or had recently completed drug and alcohol rehab. It would eventually be named, by a student, PEASE Academy (Peers Enjoying A Sober Education). Originally it was to serve as a safe place for students as a transition back to one of the traditional high schools in the district. Within the first few weeks, it became clear that the 25 original students were not interested in any more transitions. The students represented the diversity of the Minneapolis community. They were rich and poor (5 were homeless), Black, White and Native American and they came from all parts of the city, with the exception of two students from Connecticut who lived in a residential recovery center. During a school discussion session, the students vocalized their desire for PEASE academy to be their official, permanent high school. And once that decision was cleared by the school district, we were free to create a curriculum that met the students' learning and credit needs.

For me, a first-year teacher, the experience at PEASE Academy launched my own educational journey of a lifetime. That year, I began my days as a social studies teacher at a traditional high school in the district. From 7:10 to 12:40, my day was filled with bells, 45-minute periods, closed doors, and a traditional curriculum designed for right answers and compliance.

It was only after the 5th period bell that I made my escape, rushing to the Pillsbury House, on Chicago Avenue, where a small classroom doubled as an art lab. Once we determined that we were not a transition program, the curriculum opened to new possibilities. Prior to becoming a social studies teacher, I had been involved in outdoor education and experiential learning. Intuitively, it was that philosophy I wanted to bring into the classroom.

PEASE Academy quickly became a project-based learning school and the Minneapolis community became our classroom. We bought our students bus passes and created learning experiences all over the city. The central library and the Minneapolis Institute of the Arts (MIA) became like second homes.

It was in the process of writing this dissertation that I began to pull the threads together between my earliest experiences as a teacher and through the decades to my current position as a leader and my new role as researcher alongside Megan, Denise and Andy. In this chapter, I will offer two claims about inquiry-based pedagogy with an eye toward contributing to its larger scale application. I have spoken about the three teachers I have shared this journey with as both outliers and anomalies in our broader education system. Yet, they are clearly not the only teachers, and their schools are not the only public institutions, applying inquiry as a consistent pedagogy.

Still, there are far too few students with access to this type of learning. In this last chapter, I will review the claims that arose from this ethnographic research. I will also discuss how my research fits within existing research, as well as its potential implications on instructional practice, leadership, and schools. Finally, I will discuss how this research might be extended in order to understand the potential impact of a broadly available inquiry-based pedagogy.

Introduction

"Once in a while you get shown the light, in the strangest of places if you look at it right"
Robert Hunter (1974)

The genesis of the project was my combined personal experience as a teacher and leader in education. That experience included years of experimentation, frustration, and often times anger at a system that clearly discriminated against students who face multiple challenges to

success. Providing meaningful, deep learning experiences based on inquiry that builds student agency is an equity issue that gets little attention. For the most part, students of color, many of whom face the compounding challenges of poverty, have been confined to a classroom pedagogy that mostly imagines simply raising their scores on tests. Yet, the test-driven pedagogy fails to engage the students in meaningful content and shirks education's responsibility to our youth as independent thinkers, democratic citizens, leaders and decision makers (Dewey, 1938). In the vignettes that begin each chapter, I captured my experiences and observations on the impact such a pedagogy has on students who face multiple challenges to success. From both past experience and a review of research in the field, I developed the following research question: To what extent do teachers develop the philosophical foundations and pedagogical capacity to engage in inquiry as a consistent model of teaching students who face multiple challenges to academic success?

The question was designed to uncover through the fabric of storytelling and the experience of direct observation and immersion an understanding of what inquiry is -- collectively and individually to each of us. Similarly, I hoped to consider the intersection between the philosophical beliefs that each teacher holds, their practices in action, and their ability to continually build their inquiry-based practices. Thee three teachers and their schools are rare islands of sanity within a larger system that rewards an authoritarian pedagogy tied to test scores. In a larger sense, I was trying to understand why such great, student-centered teachers were anomalies in our education system. In all three cases, the participants in the study and their schools had carved out a model of teaching and learning that sought to empower students as learners and democratic citizens. Throughout the study, the teachers and their schools put learning ahead of compliance and content management in favor of a student-centered, active pedagogy (Myran & Sutherland, 2019).

At the core of the inquiry was a focus on equity. In an early interview with Denise, she captured the issue. She described her experience as a Chinese American student placed in advanced-level classes in a high school that was racially and ethnically diverse as a whole, but largely segregated by programs with primarily white or Asian students dominating the advanced level classes (D. Huey, Interview, September 25, 2017). Megan described a similar experience when she entered an International Baccalaureate (IB) program at a diverse high school and how IB students, who were predominately white, were isolated, on a different floor from the other programs (M. Hall, Interview, October 17, 2017). In the United States, programs that employ an inquiry-based pedagogy are mostly offered only in schools that primarily serve middle and upper middle-class white students (Mehta, 2014; Trujillo & Woulfin, 2014; Truong, 2016).

In this ethnographic study, I sought to get to know each one of the teachers in deep and meaningful ways that would help me understand the key principles that guided their thoughts and actions as teachers. I tried to understand what made these teachers were so unique and why their practice was not a more ready part of the mainstream. Table 12 describes the research activities that took place over the course of the study.

The research for the ethnography yielded a rich and deep understanding of how the three teachers provided a consistent inquiry-based learning experience for their students, many of whom faced multiple challenges to success. In the next section, I closely examine the findings from the study and how these compare and contrast with current research. I present two claims based on the evidence.

Table 12

Research Activities

Research Activity	Participant/Date	Evidence Collected
3 Interviews with each participant	Denise Huey – 9/25/17, 2/27/18, 1/24/19 Andy Snyder – 10/26/17, 3/7/18, 9/20/18 Megan Hall – 10/17/17, 3/12/18, 3/19/19	Transcripts of each individual interview
1 Interview with school leaders	Nicki Fox, AP Impact Academy – 2/27/18 Kate Burch, Harvest Collegiate High School – 9/20/18 Dave Gundale, Open World Learning (OWL)– 11/2/18	Transcripts of each individual interview
3 Team meetings	9/9/17, 3/13/18, 10/30/18	Meeting Transcripts
10 classroom Observations	Andy Snyder – 10/26/17, 3/7/18, 3/8/18, 9/19/18 Denise Huey – 9/25/18, 2/27/18, 12/6/18 Megan Hall – 10/17/17, 3/12/18, 1/17/19	Observation Notes Observation Notes Observation Notes
1 Flipgrid	All three recorded Flipgrid presentations on artifacts of inquiry-based teaching and learning 01/18	Flipgrid Transcripts

The Three Teachers: Anomalies and Outliers

All three teachers in the study chose to teach in schools that embraced inquiry as a core pedagogical model. Because so few schools and so few teachers practice an inquiry-based pedagogy as their primary instructional model, the three teachers are certainly anomalies in the education world. After fifteen months with the three teachers, I came to believe they met the definition of outliers. Gladwell (2008) calls outliers as great people who have benefitted from collaboration, the ability to specialize, the exposure to hard work, and their location within a culture, place, and time in which their work is valued. Each of the three teachers and their work fits what it means to be outliers and, thus, an anomaly within the prevailing education system.

Being an anomaly and outlier began for each teacher as a young learner. Early on, each t had formative experiences within inquiry-based environments. For Megan, a significant portion of her early education was dominated by an open, inquiry-based program, followed by an experience in an inquiry-based program within a large high school. Andy's grade school through university career as a learner was in inquiry-focused schools that often gave students the power to direct their learning in significant ways. Denise had the least inquiry-based experience as a learner. However, that experience was primarily in secondary gifted and talented programs with aspects of inquiry and a higher degree of independent learning than the traditional programs within her school. Each participant seemed to carry with them a deep personal resonance with the power of inquiry as a process for learning, pointing to these experiences as a driving force behind their teaching philosophy and beliefs. Just as who tend to experience rote, teacher centered learning and lack of inquiry as they were taught, early experiences as learners are critical (Goldstein, 2014).

From one vantage point, the participants' experiences highlighted their good fortune. By that same token; however, they pointed to a central problem concerning inquiry-based learning: that within the United States this type of learning experience is almost exclusively offered to white middle- and upper-class students (Mehta, 2014; Trujillo & Woulfin, 2014; Truong, 2016). As discussed earlier, this phenomenon constitutes a deep equity issue that primarily harms students who face multiple challenges to success, including poverty and racism. The issue is compounded by the fact that most future teachers – as, largely, American public-school graduates themselves – have little to no experience with an inquiry-based, deeper learning model, let alone its collective implementation within a professionally-supportive school (Goldstein, 2014). Mehta (2014) underscores this: If deeper learning experiences have historically been unequally distributed, that means that only people who had access to some of the best schools and teachers have really experienced 'deeper learning' and thus they have a different picture in their heads of what schooling might look like than the vast majority who went through traditional schooling (p. 2). Most of the people entering the profession do not have an inquiry-based, deeper learning model to draw upon as a model to help build their own practice (Audet & Jordan, 2005).

Each of the participants teach in schools that are themselves anomalies in comparison to all schools, let alone highly diverse, urban schools. Learning theory based on inquiry is central to each school's model, with professional development geared toward helping teachers develop and enhance their inquiry practices. Teachers in each school share a common belief that their students can succeed through an inquiry-based approach, a confidence they transmit to them through positive relationships. As the participant stalked about the development of their practice, they all discussed the importance of colleagues, the professional learning that takes place within

the school community, and their school leaders. In the next section, I review how emergent themes were lifted from the early research, and how the later work helped translate the themes into findings.

The Emergence of Themes in the Research

In phase one of this research, I was able to get to know the three teachers on both a personal and professional level. Their histories as learners and teachers were critical to the research. Sharing stories and attempting authentically to know each other helped to build relational trust between myself and each of the teachers, as well as building trust among all of us as a team (Guajardo et al., 2016). In the important first phase, we were able to understand each other's journeys and their respective relation to our beliefs about learning. Two emergent themes surfaced:

- Inquiry teaching and learning is a complex pedagogy that requires a philosophical foundation from which to build protocols and process.
- Inquiry based teachers use their journeys and experiences as learners and teachers to build their practices.

These preliminary themes provided a deep look into the foundational experiences that led the teachers to distill their philosophical approaches to learning and teaching. During phase one, we were able to create a base of understanding about which elements of an inquiry-based pedagogy appear common, and which were adapted and individualized based on teachers' personality, context and style. Each of the three teachers practiced inquiry in a different way and emphasized different aspects of an inquiry-based learning model. In observations of each teacher, this uniqueness stood out. At the same time, the teachers' practices all shared several characteristics. Each professional focused on connecting a theoretical pedagogy to an active,

empowering form of learning, used questions – at times controversial ones – as a way to co-construct a curriculum that drove deep learning, and viewed their relationships with students as a key to student success. Success was not measured by any single metric or test. A confluence of factors contributed to the theme of the complexity of inquiry-based pedagogy.

The second emergent theme in the first phase focused on the personal history and the connections that each teacher had to inquiry as learners. Both Andy and Megan had extended experiences in inquiry-based learning situations. While Denise's experience was less pervasive, her decision to become as teachers was bound to her belief in inquiry as a pedagogical practice. As described above, Denise's inquiry-based experiences in advanced level classes typifies one of the core equity issue of the study. Even in diverse schools, segregation by programs denies Black and Brown children the opportunity for inquiry-based learning experiences. Table 6 in Chapter 4 details the evidence collected for each of the two emergent themes in phase one of the research.

Phase two research led to the development of three findings arising from an inquiry into practice.

- Inquiry-based teaching is a complex system designed to create independent thinkers
- Inquiry-based teachers build strong relationships with students in the service of learning
- The school and colleagues are essential in supporting the continued development of an inquiry-based practice

The complexity of inquiry-based teaching and learning was identified in the first phase of the research and confirmed in phase two. Clearly, inquiry as a pedagogy is more than just asking a series of questions or helping students become curious so they can ask their own. Rather, Tables

9, 10, and 11 in Chapter 5 outline the frequency with which evidence about the intentionality central to strong inquiry-based learning appeared in the research.

As the team dug deeper, an inquiry-based pedagogy -- as an interconnected practice with a broader set of skills and behaviors -- became more evident. Student autonomy stood out to all three participants as a goal of inquiry-based practice. The focus on independence helped students feel empowered. All three teachers provided examples of how their practices helped students develop agency. One example was how each developed learning experiences focused on constructing an argument and defending authentically held ideas. All three schools incorporated either formal or informal structures whereby students had to defend their ideas and their learning.

While the complexity of an inquiry-based system stands at the center of the study's findings, the teachers emphasized that relationships with their students were vital to the success of their inquiry-based classrooms. Each teacher created the opportunities and invested the time in getting to know students on a deeper level. Like many schools, each teacher was in a school that had some sort of an advisory program designed for each teacher to know a small group of students over a longer period of time. Even still, the teachers made it a point to know all of their students more deeply. In so doing, they prioritized not only the inherent value of relationship in-and-of-itself but their ability to leverage the relationships in the service of learning. Because they knew their students well, I observed no discipline problems or issues. As a result, the teachers could be warm demanders of student thinking because the relationship was strong and each teacher knew how to push each student (Bondy & Ross, 2008; Ross, Bondy, Gallingane, & Hambacher, 2008).

The third theme connected us to the ways in which inquiry-based teachers grow their practice and the role that can be played by mission-aligned schools. The significance of this

theme cannot be overstated. All three teachers benefited from and relied on colleagues within their school to help support the development of their practice. In Denise's case, she relied on colleagues in other schools within the Envision network. Further, each school model and leader played a significant role in the teachers' development. While a history as an inquiry-based learner was identified as significant during the first phase, teaching in an environment that is steeped in an inquiry model, with colleagues who share both the philosophy and the practice was significant for all three teachers in this study.

From Themes to Claims

The themes and findings I uncovered during my research compelled me to look more broadly at the way in which educators think about both curriculum and instruction. In my experience across the country, many schools and school leaders are agnostic about pedagogy. Leadership models for schools tend to be anchored in a testing and accountability framework that is both prescriptive and authoritarian, with scant attention toward learning science (Myran & Sutherland, 2019). For the most part, leadership in schools is focused on management. Most schools have no shared understanding of pedagogy, and professional development fails to help create a cohesive approach born out of learning science.

The three teachers in the study, on the other hand, work in schools with a shared pedagogical framework. Their school leaders support and trust professional educators not only to deliver that pedagogy competently on a consistent basis, but to engage in ongoing inquiry as to how to cultivate their practice. The following claims provide a roadmap for school leaders and educators:

1. Effective inquiry-based teachers recognize and build complex learning systems and structures, enabled by relationships that are designed to deepen learning while simultaneously building student agency.
2. Inquiry-based teachers' practices improve when supported in their development by a school model, colleagues, and school leader(s) that demand a shared pedagogy by creating the conditions necessary to refine one.

Claim #1: Inquiry as a Complex Learning System

At the core of the study has been the focus on pedagogy and learning. Unlike many of their contemporary peers, none of the teachers in the study relied on an external curriculum to define their pedagogy. Rather, they relied on skills, honed by years of experience and professional development, to implement an inquiry-based pedagogy designed to meet the complex learning needs of their students. Central to an inquiry-based pedagogy in the classroom is the ongoing professional inquiry and reflection needed to sustain a conscious effort toward building a complex array of skills and dispositions capable of enduring with students beyond any specific content (Kerlin, 2012). As Freire (1970) reminds us, the road to stronger learning is in the praxis, the necessary reflection in order to act differently.

The teachers in the study created learning experiences and assignments that required students to interrogate critical issues, develop compelling arguments, and justify conclusions through effective articulation using a variety of means. For the teachers, ongoing assessment of and feedback regarding the latest thinking of their students was a critical aspect of their skill (Black & Wiliam, 1998). The assignments that the three teachers gave required students to provide in-depth responses and included extended essays, small and large projects, labs and oral presentations (Martinez & McGrath, 2014). Many of the projects and assessments that the three

teachers described are anchored in overarching processes that recur throughout our lives. They represent interdisciplinary challenges such as weighing evidence to make cost-benefit analyses, examining smaller pieces of data (such as owl pellets) to extract broader understandings about the conditions of our existence, and understanding the dimensions of their personal worlds as a necessary prerequisite to transforming it (Audet & Jordan, 2005; Dewey, 1938; Freire, 1970).

As we have seen throughout the research, Andy, Denise, and Megan consciously empowered students by scaffolding complex skills developed over time. Table 9 in Chapter 5 demonstrates how frequently each teacher discussed student empowerment as a goal in supporting students to develop increasingly more complex skills within an inquiry-based system. In the interviews and observations, the three teachers discussed the role of carefully scaffolding content and skills in the service of empowering students.

Similarly, the teachers were clear in their efforts to build strong relationships with the students. As Megan described, she used her relationships with students to leverage of engagement and academic success (M. Hall, Interview, March 12, 2018). The complexity of inquiry-based learning mandated strong teacher-student relationships. As we have seen in this study, asking students to participate in deep discussions and critically think about controversial issues that directly impact their lives requires an environment in which safety and trust have been established. Because inquiry-based learning is a complex process that involves multiple skills and a significant amount of scaffolding, the three teachers in the study thoughtfully engaged their students in discussing relevant and culturally responsive issues. The selection of content by all three teachers focused on real-life problem-solving based on issues that students saw in their communities and lives. The selection of content that was relevant and connected to students' lives supported the development of trusting relationships between the teacher and students by

demonstrating attunement with their preferences and acknowledging the human dimensions beyond those of soon-to-be test-takers.

An inquiry-based pedagogy that is consistently practiced requires an understanding by the teacher of the complex nature of learning (Joyce et al., 2015), and it requires a partnership between students and their teacher. Building and sustaining this sort of inquiry-based practice requires teachers to continually develop their practice. As we have seen with the teachers, their colleagues, their school, and the school leaders, all play a significant role in teacher development, which I more fully discuss in the next section.

Claim #2: Cultivating a Deeper Practice with Colleagues and the School Leader

When I began this journey, I was focused on each teacher and his or her individual practice. Despite the fact that I had intentionally recruited the three teachers from schools that employed an inquiry-based model, I had underestimated the power of the school model, colleagues and leaders on the teachers' experience. During phase one of the research, I focused on the personal journeys of the three teachers. Meanwhile, little attention was paid to the contributions made by their colleagues and school leaders. Further, I had only minimally surfaced the impact that the school model had in bringing together the philosophical foundations of the teachers and school leaders in each building. In phase two, the three teachers began talking more deeply about their own continued development as inquiry-based teachers. As they did, their continuous growth toward strong, inquiry-based practice was significant, and all credited much of their growth and development to their colleagues and school leaders. The school itself was a key factor in each teacher's ability to cultivate and deepen her or his practice.

This claim stands somewhat in contrast to the way many educators in the standards-based, high-stakes testing movement talk about teacher development and the role that teachers

play in student success. Popular educators, like Doug Lemov (2015), have been pushing for technical skills on the part of a single teacher as the key to academic success, using phrases like "improving teacher quality" as the key to education reform.

Continued improvement of teacher practice is critical. Denise, Andy, and Megan describe their development as part of something larger within the school level, or in Denise's case at the charter management organization's level. As we have seen throughout the study, inquiry and what many call "deeper learning" are dependent on active leadership that can clearly articulate and support a common pedagogy (Hewlett Foundation, 2013; Noguera et al., 2015). The schools in the study paired belief in and commitment to a common pedagogy with aligned systems and structures to support it. For teachers, these conditions provided a unique opportunity for professional growth to maximize their ability to meet the needs of the students within the context of the school culture. The study documents how the teachers and leader at each one of the three schools had a synergistic relationship when it comes to pedagogy and practice.

While the research on the impact of school models, leadership ,and a common pedagogy is somewhat sparse, the findings from the study clearly indicate the impact that stronger alignment can have on teacher development and, most importantly, students -- an area ripe for further research and a deeper understanding.

One of the problems that exists in the current research is the limited role of understanding and enabling solid learning theory as a component of good leadership in schools (Myran & Sutherland, 2019). In contrast, learning theory has been a central component of the research project and is reflected in the classrooms of the three teachers as well as their belief systems (Audet & Jordan, 2005; Joyce et al., 2015). The interviews with their school leaders, unlike other school leaders, always seemed to return to the theory of learning that framed their mission and

vision. Their schools were designed to ensure that students in their community had equitable access to an inquiry-based pedagogy. In the next section, I look more closely at how the research presented in my initial literature review, with particular focus on how inquiry and equity align with this study.

Claims in Relations to the Extant Research

The extant research that framed the project focused on two major categories. The first was a definition of inquiry and what it looks like in a classroom. I examined the historical and pedagogical roots of learning theory with a focus on inquiry. The second category examined equitable access to inquiry-based learning. The section included an analysis of how national policy, such as NCLB and test-driven measures, impacted students with multiple challenges to success, including racism and poverty (Zhao, 2012). In that section, I examined how long-term goals for education, such as preparing students for democratic citizenship and global engagement, fail students with multiple challenges to success (Ladson-Billings, 2006; Noddings, 2005; Zhao, 2012). Below, I cast the findings of the study against the overlapping areas of research, beginning with the definition of inquiry and its implementation.

What is Inquiry?

The finding on the complexity of inquiry-based teaching aligns with the external research on an inquiry-based pedagogy. At the core of the work that Andy, Denise, and Megan do in their classrooms is a focus on Dewey's (1938) conception of providing real-world experiences that best approximate the skills and processes students need to succeed outside of school. Thus, the teachers in the study applied a form of discovery learning that allowed students to use their prior knowledge and relevant experiences within their own communities, as a way to deepen their learning (Bruner, 1961). As students constructed new understandings, they began to see the

complexity of issues that surround them (Vygotsky, 1978). One example of this phenomenon came from Andy's classroom in a discussion about whether or not college was the right pathway for all students. During the course of the discussion, students began to see the complex perception of college that exists in our society. One of the questions that students eventually struggled with was whether or not people who went to college were actually morally better than those who didn't (A. Snyder, Observation, October 26, 2017).

Another aspect of the study, in its attempt to define inquiry, centered on teachers' beliefs about student learning. The teachers had a deep belief in the power of inquiry and an understanding that learning theory was at the heart of good instruction. Buchanan et al. (2016) found in a meta-study that inquiry was based on some common beliefs around learning. Those beliefs included student autonomy, critical thinking, and curriculum based on large questions about the world around them.

Song and Looi (2012), whose research focused on scientific inquiry, discuss the power of designing curriculum and student learning experiences around large questions. In their study, the authors found that large questions support students as independent researchers providing experiences that build skills in collecting and analyzing evidence. Organization of content around questions, authentic/real-life learning experiences, student as drivers of their learning experiences, and teachers' contrasting role as facilitators rather than directors are all central to an inquiry-based pedagogy (Buchanan et al., 2016; Bruner, 1961; Dewey, 1932; Gaudelli, 2016; Noguera et al., 2015). These practice aspects were evident among all three teachers. In addition, the teachers developed systems and structures that supported more authentic and independent learning, as described in the research.

The structures included scaffolding of both skills and content. Scaffolding structures was a key component uncovered from my look into Andy, Denise, and Megan's practices. Saye and Brush (2006) describe two kinds of scaffolding -- soft and hard. Hard scaffolding are the structures and systems that are generally static and predetermined, while soft scaffolding is focused on responding to student needs as they arise *en vivo*. Andy, Denise, and Megan provided soft scaffolding for their students in response to assessed needs. In one interview, Megan described how her students helped her determine when to take the scaffolding away and the kind of scaffolding that was needed at any one time (M. Hall, Interview, March 12, 2018). This explanation reflected the complexity of an inquiry-based pedagogy, as well as the complex decisions that teachers made constantly alongside their students (Audet & Jordan, 2005).

Finally, as discovered in the research on learning theory, an inquiry-based pedagogy is designed to empower students as critical thinkers and problem-solvers. Over time, students should gain greater control over both the process of learning as well as the content itself (Joyce et al., 2015). That control over both how they learn and what they learn creates opportunities for students to both transform themselves and the world around them. Ladson-Billings (1995) discusses how students "must develop a broader sociopolitical consciousness that allows them to critique the cultural norms, values, mores, and institutions that produce and maintain social inequities. If school is about preparing students for active citizenship, what better citizenship tool than the ability to critically analyze the society?" (Ladson-Billings, 1995, p. 162). Preparing students for active citizenship and participation in their communities was resonant in the study. Andy and Denise, in particular, used content intended to provoke students to think deeply about social justice issues that were relevant to the students' lives.

Understanding inquiry, both in terms of content and pedagogy, was a key component of the research. The teachers were able to articulate how they built complex systems and structures to meet the needs of all of their students. As discussed earlier, the teachers were not just anomalies as inquiry-based teachers, but because of the students they chose to serve. Equity was a core focus of the study. Next, I review the research on equity and access to an inquiry-based pedagogy with a focus on students who face multiple challenges to success.

Inquiry-Based Teaching: An Issue of Equity

The second area of extant research that I analyzed for the project focused on equitable access to inquiry-based pedagogy with a particular eye on students who face multiple challenges to success. An emphasis on access to high-quality education for all students is certainly not new in the educational landscape of the United States. Issues of racism and poverty have excluded millions of students throughout the history of this country (Alhumam, 2015). As the nation has debated what is defined as the achievement gap, using state-generated tests as markers of achievement has become the focus of much of the conversation on educational equity in the last 30 years (Goldstein, 2014). Access to inquiry-based learning models gets far less attention.

In the study, the teachers had chosen to teach in schools that serve a large number of students who face multiple challenges to success. As Truong (2014) discussed, race and class have often determined which students have access to deeper learning models, such as those that reflect an inquiry-based pedagogy. In many cases, schools and districts make choices that limit curricula and pedagogy based on a fascination with inflating test scores. Students of color and low incomes students tend to be in schools that have lower test scores and therefore are disproportionately relegated to primarily scripted courses of study that incorporate far less relevant curricula (Noguera et al., 2015).

The study focus has been to demonstrate how teachers and schools can break the artificial barriers a test-driven accountability system has imposed on students with multiple challenges to success. The three teachers recognized that many of the students they serve come from schools that did not prepare them to succeed in an inquiry-based environment. The teachers (and their schools) have been thoughtful about the systems and structures that they put in place to support students lacking a background an inquiry-based learning.

In more than one sense, the study confirms other research in inquiry-based pedagogy. It opens doors to new research that may help explain the power of an inquiry-based pedagogy. In fact, little external research exists about claim number two – the assertion that there is collective efficacy within a group of teachers, in a school that shares inquiry as a common pedagogy. In the next section, I look at the implications and significance that this research has on instructional practice. Further, I explore how this research can help to drive further research on inquiry-based pedagogy, the power of colleagues and schools in shaping teacher development, and the importance of school leadership around learning sciences.

Implications/Significance for Practice and Research

While the project focused on the experiences of three teachers who practice inquiry, the study's findings provide a model for a broader theory of action that is focused on schools as agents of change in supporting deeper, inquiry-based learning (Boykin & Noguera, 2011; Hewlett Foundation, 2013; Noguera et al., 2015). The research can impact the way in which teachers work with each other around shared pedagogy, as well as how school leaders can redesign schools to be focused on learning science and the collective efficacy of their professional educator team. The research can be used impact public policy, providing evidence to support a move away from a policy driven by test data to one that strives more clearly to

measure academic success by the extent to which students engage in deep, transformative learning.

Learning with and from Colleagues

The research began with Andy, Denise, and Megan describing their passions and histories as learners. The personal histories become part of the collective narrative that united all three educators. As a micro-example of a larger pattern of their individual schools reinforcing structures where teachers and administrators learn with and from each other, the study names the kind of learning that best supports individual and collective growth of a staff. The personal stories of the teachers moved them to become inquiry-based teachers. Their passions fueled a desire to work at an inquiry-committed school, and that reality provided a gateway for faculty to anchor their practice in a professional inquiry, an ongoing refinement of a pedagogy based on the learning sciences. This model for schools and for teachers moves from the personal to a more systemic approach to cultivating an inquiry-based pedagogy.

When teachers share their histories with their colleagues, they are building relational trust in order to create an adult culture of collaborative learning and growth (Guajardo et al., 2016). In such schools, collegial support begins with the personal and moves to the systems level as intentional structures bring teachers together to co-construct relevant pedagogy and contribute to the development of shared practices. Because inquiry-based learning is a complex process there is a strong need for continued professional growth for all educators in a building. The practices related to adult learning magnify their connections to each other, and how they construct student learning has deep implications for how professional development is structured within a school. Time must be built into school schedules and calendars in order to provide opportunities for

teachers to actively participate in professional development as well as provide peer leadership to their colleagues.

A sophisticated school-wide shared model is dependent on leadership, both formal and informal. To lead effectively school administrators should be well-versed in the learning sciences and deeply understand how the pedagogy plays out in classrooms (Myran & Sutherland, 2019). School leaders must likewise articulate the school model clearly, including when recruiting and selecting new teaching staff with the potential to either improve upon the school's model or detract from it. To live this theory in practice, the school's common agreements around pedagogy should be captured in the mission and vision and given life through systems and structures that guide action. The systems and structures should go beyond schedules and calendars and include intentional supports for the development of student agency, such as student-led conferences and portfolio defenses.

The role of school administrators as pedagogical leaders is essential and requires a keen understanding of instructional practice and learning sciences. The teachers described the ways in which they experienced their administrators were partners, bringing awareness and accountability to the nuances of the model while sharing in its execution democratically. An essential ingredient is a distributed leadership model that engages teachers as they deepen their work in inquiry-based pedagogy (Spillane & Coldren, 2011). In some ways, the gulf between teachers and administrators in most schools is not much wider than when I first began teaching in 1988. Principals now conduct more formal observations and are expected to be in classrooms with greater frequency than in the past. Still, the dominant paradigm that pedagogy and practice is up to the individual teacher still exists in many public schools. And, the dominant pedagogy is

teacher-generated discussions that provide no equitable access to student learning (Boykin & Noguera, 2011).

In the last several years, we have begun to see a resurgence of school models and support organizations that emphasize inquiry and deeper learning. Often, inquiry is framed within the context of deeper learning and project-based learning (PBL). Complex in their implementation for newer teachers, the success of these models depends on continued teacher retention in the field and growth within the context of their school community. Their ability to continue the development of educators such as Andy, Denise, and Megan offer great promise for the field more broadly. While there has been a resurgence in interest in these kinds of models, no real infrastructure exists within our education system, including local school districts, to meaningfully implement inquiry-based learning as a shared pedagogy. Further, we continue to struggle with our understanding of how we as a country define learning. In most cases, large-scale testing drives our understanding of what counts as learning and therefore drives much of what happens in classrooms.

Change is slow to come by and hard to embrace in the education world. While testing is a simplistic approach to a complex problem, most Americans view testing as the logical response to years of failure, especially for students who face multiple challenges to success. As we have documented in the study, an inquiry-based pedagogy, practiced on a consistent basis, requires continued development for individual teachers and mechanisms to ensure shared practice at the school level. For real change to take hold, public perceptions as well as policy about what counts as meaningful learning must change. Next, I posit how public policy can be re-designed and framed to enable an inquiry-based pedagogy on a larger scale.

Policy

In order to develop inquiry-based learning as a central pedagogy in schools, local, state, and national policy needs to embrace the notion that schools ought to be the primary driver of their own change in direct response to the needs of their community. It was clear through the research that all three schools were responsible for the continued development of the three teachers in this study. Granted, each one of the three teachers came with experience as a learner in an inquiry-based pedagogy and a disposition toward that pedagogy, yet all credited their school culture, colleagues, and leaders for their continued development. As Denise pointed out in an interview, once her school added a middle grades program, her students came more prepared to be successful in an inquiry-based learning model (D. Huey, Interview, January 24, 2019). Having a common pedagogy across levels of schooling would provide students with an opportunity to build and apply complex skills over a longer course of time within multiple classrooms.

Teacher development is central to the successful application of an inquiry-based model in a sustainable way. As discussed earlier, all three teachers came with experience as inquiry-based learners. That experience also led to a disposition toward an inquiry-based pedagogy. Most teachers are not fortunate enough to have had similar opportunities for inquiry-based learning. They may have experienced forms of inquiry through science fairs or standalone labs, but most teachers come from traditional schools that practice a more passive, teacher-centered learning approach. For inquiry-based learning to take hold, teacher education programs need to embrace the pedagogy and provide opportunities for their students to experience inquiry-based learning as students, so they can begin to deconstruct it in preparation to utilize it as educators. Doing so

would require a profound shift in the way we conceptualize teacher education and the policies that guide those programs.

Finally, equally essential to increased access to pedagogy primed for deep learning is policy that begins to change the way we cultivate school leaders. Educational leadership preparation programs tend to focus on school management and generalized leadership skills borrowed from business models. Leaders have few opportunities to deeply understand learning and investigate the learning sciences. The next generation of school leaders need to be prepared to lead around the learning sciences, perhaps by sacrificing some focus on the management issues. Leaders need experiences that can help them make management decisions in relation to their core understandings about learning.

Additional policy enhancements to support inquiry-based learning to flourish may include re-shaping our current view of school leadership teams. Most schools operate on the notion of a single school leader with one or more assistant principals to manage the school. This archaic model reinforces hierarchy and struggles to cultivate a complex pedagogy that requires leadership from across disciplines and positions if it is to be implemented successfully. Complexity in learning needs a distributed leadership model that allows for teachers and other instructional staff to provide leadership in areas of their expertise (Spillane, Halverson, & Diamond, 2001). Many schools are embracing some form of distributed leadership through the use of instructional coaches both at the district and school level. While this is a good first step, it often times does not change how decisions are made at the school level. For schools to fully employ an active distributed leadership model, they need to consider designing more democratic structures that are inclusive of students, parents, staff, and community members. All of the suggestions require policy innovations -- at the university level in the way in which school

leaders are selected for their programs and then in the design and implementation of the programs. The burgeoning emphasis on coaching new leaders in school districts then needs to pay substantially more attention to leadership development that emphasizes the findings of the study. Further, local decision-making bodies such as school districts and charter management organizations must create structures and systems that empower schools as local decision-making authorities.

Policy changes in these areas could significantly change the way in which we think about education and learning as well as the development of schools. The study provided an opportunity to deeply examine three contexts within education but could point out the necessary direction for more policy changes. Next, I examine how an ethnographic study focusing on learning and the learning sciences can be applied in other contexts with an eye on the limitations of this study.

Context Matters: Further Research

The context of the study provides powerful data for understanding inquiry-based pedagogy in three schools that serve students with multiple challenges to success. At the same time, to apply this type of study in other contexts, it is important to understand its limitations. First, only three teachers took part in this study and while, on one hand, I was privileged to dig deeply into their practices and the philosophy that anchored their work, I was limited in the number of teachers that could take part. Secondly, the study relied solely on qualitative data. I examined the codes that arose in the ideas shared through interviews and team meetings and the actions observed in practice, counting the frequency with which these occurred. In some ways, a more quantitative approach to a similar set of research questions may yield data focused on easily defined measures of student growth, complementing the work's focus on the nuanced complexity of pedagogy and its enactment in the classroom.

As I think about how the study could be applied in a different context to understand the power of an inquiry-based pedagogy, I believe that a worthwhile lens would be a more thorough focus on the role of school leadership. An ethnography of leaders in schools that employ an inquiry-based pedagogy could provide a deeper understanding of what is needed to impact more teachers and more programs. All three leaders were well-grounded in learning science and an understanding of how an inquiry-based pedagogy plays out in the classroom. They demonstrated an understanding of how to apply distributed leadership in their schools and did so in the service of their overall mission and vision of the school.

The study took place within the context of my own journey as a leader. As I have discussed earlier, I have been in education for more than 30 years, and many of the teachers who I entered the field with have since retired. Since starting the dissertation, I have changed jobs and roles as an education leader. In the next section, I reflect on my leadership journey with an eye toward the future.

An Education Leadership Journey

For the past 30 years, I have been in search of opportunities to create deep learning experiences based on inquiry and student empowerment. The vignettes that I have offered at the beginning of each chapter provide a window into my experiences as a teacher, coach, reform leader, and administrator. Throughout my career I've had the opportunity to work with and observe hundreds of teachers throughout the United States. In those experiences, I have been in search of the magic and complexity of inquiry-based learning and teaching. In one sense, this dissertation is the culmination of much of that work as well as what I hope will be an inspiration and a roadmap for other teachers and school leaders. Years ago, a close colleague once told me that being an inquiry-based teacher feels like swimming upstream against the current of a

standards-based pedagogy that has turned learning into a blunt instrument of compliance. Perhaps we need to change the direction of the river.

In a large sense, the vignettes tell my story and evolution as an educator struggling to find the best ways to support young children as learners. I was faced with a dilemma early in my career. The kind of teaching that was modeled for me both as a student and as a teacher in some of the early schools in which I worked was not effective, especially for students who faced multiple challenges to success. That kind of instruction was teacher-driven and demanded a passive learner. In my early experiences as a teacher, I felt uncomfortable and searched for mentors to help guide me to a different kind of practice. Throughout my career, I was lucky to find those mentors and to find schools where I could practice an inquiry-based pedagogy.

But, like Andy, Denise, and Megan, I was an anomaly and so were some of the schools in which I passionately served. I always felt that at some point a leader at the district or school level would demand that we change our practice and focus on the test. And with good reason: that exact experience happened several times in my career. Perhaps most profoundly as the middle grades coordinator in Minneapolis where, after five years of supporting the implementation of a deep reform effort that changed both the school structures and instructional practices of many teachers, a new superintendent decided it was time to go back to a traditional model and focus narrowly on improving test scores.

As I described earlier, I believe that education programs at the university level can be levers for change in education. Education programs for new teachers should be centered around learning science with a focus on deeper, more inquiry-based pedagogies. Those programs should be experiential in nature and provide a model for preservice teachers to eventually develop their own pedagogy based on student learning that is relevant and engaging. Universities can be on

the forefront of such change within educational leadership. I hope to take this research and apply these findings into my next journey in higher education. I also hope to build from this research project further ethnographic research that not only helps those in the profession understand the complexity of teaching but also the complexity of leading in an inquiry-based environment.

Megan, Denise, and Andy give me hope that the art of teaching and learning that John Dewey, Paolo Freire and others imagined is still alive.

Finally, I take one more look at the research questions to determine the extent to which the research answered the questions. The analysis of the research question provides an understanding of why the methodology of ethnographic research provides a powerful lens into a deeper understanding of complex systems and structures that exist in inquiry-based schools and classrooms.

Conclusions

I originally designed the study and the research questions with the assumption that I would be employing a Participatory Action Research (PAR) methodology. Early in this study, it became clear that I was actually engaged in an ethnography. There was far too little time for the teachers to work together and to build upon each other's practice in the way a participatory action research would aim to do. The three teachers taught in different schools and in different cities and could meet virtually only three times during the course of the study. Simultaneously, I realized that what I was most interested in was working with the teachers to name and analyze their practices, in hope of amplifying their successes and the journeys that led their engagement with other teachers. In fact, as discussed with Megan, Denise, and Andy, much of what I was learning could provide a powerful roadmap for new teachers entering the profession. As I began

to reorient my research methodologies around ethnographic practices, I re-examined the research questions to ensure that I could answer those within the context of an ethnographic study.

Revisiting the research questions can help demonstrate the extent to which the study was able to address them. The overarching research question was: To what extent do teachers develop the philosophical foundations and pedagogical capacity to engage in inquiry as a consistent model of teaching with students who face multiple challenges to academic success? The sub-questions guided the ethnographic study were:

1. To what extent do the philosophical and pedagogical dispositions transfer into consistent instructional practices?
2. How do we (teachers and researcher) co-construct a theory of teaching that addresses philosophical, pedagogical and instructional foundations of inquiry as a key practice?
3. To what extent will experienced inquiry-based teachers interrogate each other to improve their practice?
4. To what extent can and do teachers construct inquiry experiences that gradually release responsibility for learning to students?
5. What does that model look like over time?
6. How does an inquiry-based classroom change the role that teachers play in the classroom?

I was able to answer the primary research question. All three teachers possessed both the philosophical foundations and the pedagogical capacity to engage in inquiry consistently with students who face multiple challenges to success. As we look closer at the sub questions, I was able to answer them to a large extent. The fact that all three teachers taught in schools that, in a sense, demand inquiry as a primary practice, the question of consistency was supported by the

school model, the teacher's colleagues, and the school leaders. The only sub-question that was harder to answer within the context of an ethnographic study was sub-question two. As I moved to an ethnography, we had less of an opportunity to co-construct a theory of teaching. The sub-question provides an opportunity for further research.

For sub-questions 3-6, the research was able to adequately speak to multiple relevant elements. In our team meetings, a high level of trust and respect was built among each teacher. After the first meeting, Andy suggested that the three teachers would benefit from an opportunity to question each other. The next two team meetings team were often driven by these questions. I also noted in my memos that I asked fewer questions in the last two meetings.

Through the observations and the interviews, I witnessed the ways in which each teacher worked to empower their students and to help them become independent learners and thinkers. The teachers consciously created scaffolds for their students that allowed them greater independence and focused on deeper thinking as the school year progressed. It was helpful to observe the teachers both in the fall and winter. Finally, Andy, Denise, and Megan developed a practice that was student-centered. In Andy's class, I watched as discussions where he rarely talked were driven by students. In both Megan and Denise's classrooms, I saw systems and structures that guided students in their work and made whole class instructions almost unnecessary.

There is much to be gained from this ethnographic study in relation to the overall trends of research in education. Much of the education community is focused solely on analysis of limited, quantitative data, yet most quantitative studies failed to provide a textured understanding of what lies just below the numbers. What comes out in this study is the thinking behind the decisions that teachers make, as well as how those decisions play out in classrooms. This

exemplified a larger assumption about what is often missing from research: a need for deep humanization as a means to better understand the dedicated professionals whose practices cannot be distilled into numbers. Rarely will a set of quantifiable data change one's practice or improve the quality of teaching in meaningful ways. That is not to say that quantitative research is useless. In the case of this project, I contributed to a tradition of qualitative research seeking to deeply understand the complex nature of learning and motivate teachers to improve, or at times drastically change, their practices. Effective research must take into consideration the heart as well as the head.

Epilogue

In the Spring of 2017, on a Friday in New York City, 200 students from around the five boroughs gathered at a YWCA in Manhattan to present their global action projects. At the end of the day, the students from One World Middle School in the Bronx boarded a bus that would take them to Washington, DC to lead the children's march for human rights. For the 50 students who were off to the capitol and their teacher, Carol Lewis, this would be the culmination of two years of work.

Their work in Ms. Lewis's class began when they were sixth graders and focused on a question that they themselves helped design: How do we stop the violence in our community? Over the course of their six-grade year, they would interview over 2,000 people in search of the answer. From there, the students designed data walls of the evidence they collected, wrote about their findings, and presented their work at several community gatherings, including one at the United Nations.

The next year, the same students had Ms. Lewis again for global studies. That year, she based her curriculum on the United Nations' Declaration of Children's Rights. It was also the

year the Donald Trump was elected President of the United States. I visited her class multiple times that year and listened to the students as they articulated both their fears and their hopes. All of Carol's students were students of color and many were recent immigrants. Instead of wallowing in a sense of hopelessness or a myopic focus on test scores, Ms. Lewis and her students focused on positive action that they could take. Throughout the year they studied issues that impacted children and once again wrote, investigated, analyzed, and presented their findings. They also set in motion a plan to design and implement a children's march on Washington, DC.

I had observed these children as they came into Ms. Lewis's class in sixth grade and watched how their skills developed and their confidence swelled as they saw themselves increasingly as changemakers and problem-solvers. This is the power of an inquiry-based pedagogy. It is a pedagogy that has the potential to deeply engage students and turn lives around.

The dissertation has been both an academic and personal journey for me. My love of schools and teachers did not come easy but love of learning seems to be at my core. The experiences of the research over the last fifteen months opened my eyes to new possibilities for an education system where "how we teach matters." We have spent years, as an education system and as a nation, trying to get the standards of "what we teach" right, and, yet, the results that we have produced for children has not markedly changed or improved. Most of my work has been at the micro level, in schools working with teachers and principals. I have realized through this journey, however, that I need to be a voice at the macro level as well and help education leaders, policymakers, and education programs at the university level renew their focus on pedagogy.

The title of the dissertation includes three core aspects of inquiry: personal empowerment and collaboration that support the tenets of education in a democracy. Throughout the research, Andy, Denise, and Megan provide us with multiple examples of how collaboration and personal empowerment connect with an inquiry-based pedagogy. Democracy plays a different kind of a role in an inquiry-based pedagogy. In a real sense, supporting students to understand and be able to actively engage in democratic communities is one of the primary goals of our education system. An inquiry-based pedagogy provides a pathway for students to develop the skills, dispositions, and commitment to democracy. Critical thinking, asking important questions about our communities and world, collaborating with others in the service of real-world problem-solving, and independent research and decision-making are core skills for effectively participating in the democratic process. Further, inquiry-based teaching and learning is, in and of itself, a democratic process for learning. Strong inquiry-based classrooms provide opportunities for students to examine multiple perspectives, engage in discourse with others that is respectful and open to new ideas, and collaboratively seek solutions to issues that impact our communities. The health of our democracy depends on our students' abilities to apply these skills over the course of their lifetime.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** · **www.ecu.edu/ORIC/irb**

Notification of Continuing Review Approval: Expedited

From: Social/Behavioral IRB
To: Kenneth Simon
CC: Matthew Militello
Date: 8/8/2019
Re: CR00007971
UMCIRB 17-001472
Pedagogy of Possibility

The continuing review of your expedited study was approved. Approval of the study and any consent form(s) is for the period of 8/7/2019 to 8/6/2020. This research study is eligible for review under expedited category #6&7. The Chairperson (or designee) deemed this study no more than minimal risk.
Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Document	Description
AdultConsentForm-KS.docx(0.02)	Consent Forms
Simon Interview Protocol(0.01)	Interview/Focus Group Scripts/Questions
Simon Proposal(0.01)	Study Protocol or Grant Application

The Chairperson (or designee) does not have a potential for conflict of interest on this study.