ABSTRACT

Jennifer L. James, LEAVE THIS PLACE BETTER THAN YOU FOUND IT: FACILITATING INQUIRY-BASED LEARNING EXPERIENCES (Under the direction of Dr. Matthew Militello). Department of Educational Leadership. May 2023.

Engaging students in authentic and relevant work through inquiry-based instruction provides them opportunities to develop critical thinking, student-centered self-directed learning, and real-world problem-solving. Unfortunately, the process of teaching through inquiry is not typical in education. Nevertheless, empowering teachers to teach through inquiry means that they can be more impactful in leaving the school a better place for student learning. In this participatory action research (PAR) study, I examined the extent to which teachers designed and implemented learning experiences that promoted inquiry to foster student agency within an Early College High School setting. Using participatory action research (PAR) methodology informed by activist research and community learning exchange (CLE) methodology and protocols, the PAR theory of action was: If teachers and the principal co-create inquiry-based learning experiences, then staff will have the skills and knowledge to implement an inquiry-based pedagogy designed to cultivate student agency at Imagination Early College High School (IECHS). During fourteen months of research, I conducted multiple co-practitioner research (CPR) meetings, two CLE meetings, observations, and coaching conversations. I analyzed data to gain insight into how teachers collaborated to rethink teaching and learning and change teaching practices from traditional teaching methods to inquiry-based learning experiences. Two findings resulted: (1) Teachers shifted their thinking about inquiry-based teaching practices by experiencing inquiry as learners; and (2) shifting teacher thinking led to implementing inquiry-based student learning experiences. The results of the study could support school principals and high school teachers in changing teaching practices. By shifting teacher thinking through

teachers experiencing inquiry in their professional learning, they were ready to implement inquiry-based learning experiences that foster student agency in their classrooms.

LEAVE THIS PLACE BETTER THAN YOU FOUND IT: FACILITATING INQUIRY-BASED LEARNING EXPERIENCES THAT SUPPORT STUDENT AGENCY

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Doctor of Education in Educational Leadership

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DEDICATION

I dedicate this study to my seven-year-old inner child and the youth just like her. May education allow you to find a different path and provide you with agency to create the future of your dreams.

ACKNOWLEDGEMENTS

I would like to first thank God for allowing this opportunity to come at the right time and in the right space. I am a changed person because of my experiences over the past four years.

My sincere appreciation goes to the people that made this journey possible. Thank you, Dr. Matt Militello and Lynda Tredway, for selecting me to be part of the Project I⁴ cohort. Your knowledge of ways to reform education are inspiring, and I appreciate the opportunity to learn from you! A huge thank you to Dr. Ken Simon, my Project I⁴ coach, whose energy, wise words, compassion and knowledge excelled me to a new level. I am forever grateful!

To my family: Bert James, my husband, who saw my potential way before I ever did. Thank you for your constant love and support. Rook James, my son, who is my grounding, my why, and my heart. May you encounter an environment where you are able to inquire, have a voice and increase your agency! My dad, Jerry Holleman, thank you for always believing in your little girl.

My deepest gratitude to the study's CRP Team. Your willingness to learn in public, rethink your practice, and make changes was amazing! Thank you for trusting me and taking the inquiry journey. I hope that each of keep growing!

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I have a personal stake in the research for this project because I am the principal of Imagination Early College High School (IECHS) and because I see myself in so many of the students. My desire to empower students at IECHS to inquire about the world around them and increase their agency stems directly from my life story. I struggled as a high school student. I rarely felt connected to my school, my peers, or my teachers. I barely earned a 2.5 GPA, and my SAT score was embarrassing. I often wonder how I made it to college. I did not understand the content that was being taught, how to connect it to my life, how to seek the needed information, whom to turn to for assistance, how to advocate for myself, or how to believe in myself. I felt like I was a container in which teachers deposited information to store only for a test (Freire, 1970). I rarely felt challenged by new lessons, and I was not committed to education. That is not what I want for my students; I desire to lead a school where I and the teachers commit to a school and teaching that provides a better place for student learning.

Introduction

The clarion call to ensure high school students are college and career ready has been a steady beat for several decades and speaks to a key purpose of schooling—social mobility (Labaree, 2008). However, "although the college aspirations of all U.S. high school students, regardless of race, ethnicity, and family income, have increased dramatically over the past several decades, significant disparities remain in college readiness and enrollment" (Roderick et al., 2009, p. 16). North Carolina school districts, with the support of the state, instituted the early college model to tear down inequitable barriers to college facing many low-income students and students of color.

Beginning in 2018, I facilitated the design of Imagination Early College High School (IECHS) in eastern North Carolina. Early college models offer a blend of high school and college courses and are typically co-located on a college campus. The design of IECHS supports first-generation college students as they overcome multiple barriers to college. At the same time, many IECHS students continue to fall victim to stereotypes and identity threats (Steele, 2010). IECHS faculty strive to eliminate the academic hurdles facing first-generation college students who may be inadequately prepared for the rigor of college classes. Therefore, the focus of practice for this participatory action research (PAR) project and study was to increase the capacity of teachers to implement inquiry-based learning experiences that foster student agency. IECHS teachers and I collaborated to incorporate inquiry-based learning experiences that foster student agency and better prepare students for academic success.

IECHS, located in eastern North Carolina is on the campus of a large university and is part of the local county school district. IECHS lies in the coastal plains region with the Tar River running through the town. The Tar has often served as a dividing line with many low income and minority families living north of the river. When county residents say, “north of the river,” they sometimes stereotype people who live there as flawed. They view them as poor and lacking a formal education. This stereotype or identity threat follows the children into school. The students have had an oppressive mindset placed on them (Steele, 2010). Our students who reside north of the river struggle to understand the possibilities available because they fail to see themselves apart from the stereotypes placed upon them, generation after generation. As of the 2022-2023 school year, IECHS enrolls 210 students with 64% considered minorities. Almost half of the student body live north of the river.

Each year the school accepts fifty-five students who meet one of three criteria: (1) students who are first-generation college students, (2) students deemed at-risk for achieving academic success, and/or (3) students who desire academic acceleration but may not have access. IECHS defines at-risk as any factor that jeopardizes a student reaching their fullest potential and graduating from high school. Some at-risk factors include single-parent homes, divorced parents, parents with low income, parents lacking formal education, incarcerated parents, foster care placement, childcare provider for siblings in the home, a home language other than English, food insecurity, mental health issues, disabilities, and low self-esteem. Without proper support, these factors have often hindered our students' abilities to succeed.

I started as principal in February 2018 and chose all staff members to ensure high-quality teaching and diversity. As Bryk et al. (2015) suggests, we started with a select faculty group, built up gradually by adding a grade level each year, learned from trial and error, and changed and improved over time. I collaborated with the staff to design and develop a meaningful educational program for our students. We continue to develop, reflect, learn, and improve day-by-day, dedicated to making our school a place that we leave stronger than when we first came to teach and lead here.

When we set our vision, the staff discussed how all students need access to learn essential self-advocacy skills. IECHS opened the doors in August 2018 with the following vision developed by staff:

> We will help learners be successful both throughout life and in the classroom by: supporting them; helping them set goals; developing college and career readiness skills, and instilling a growth mindset to break negative cycles, find their voices, and be influential leaders in society. (Brittenham et al., 2018)

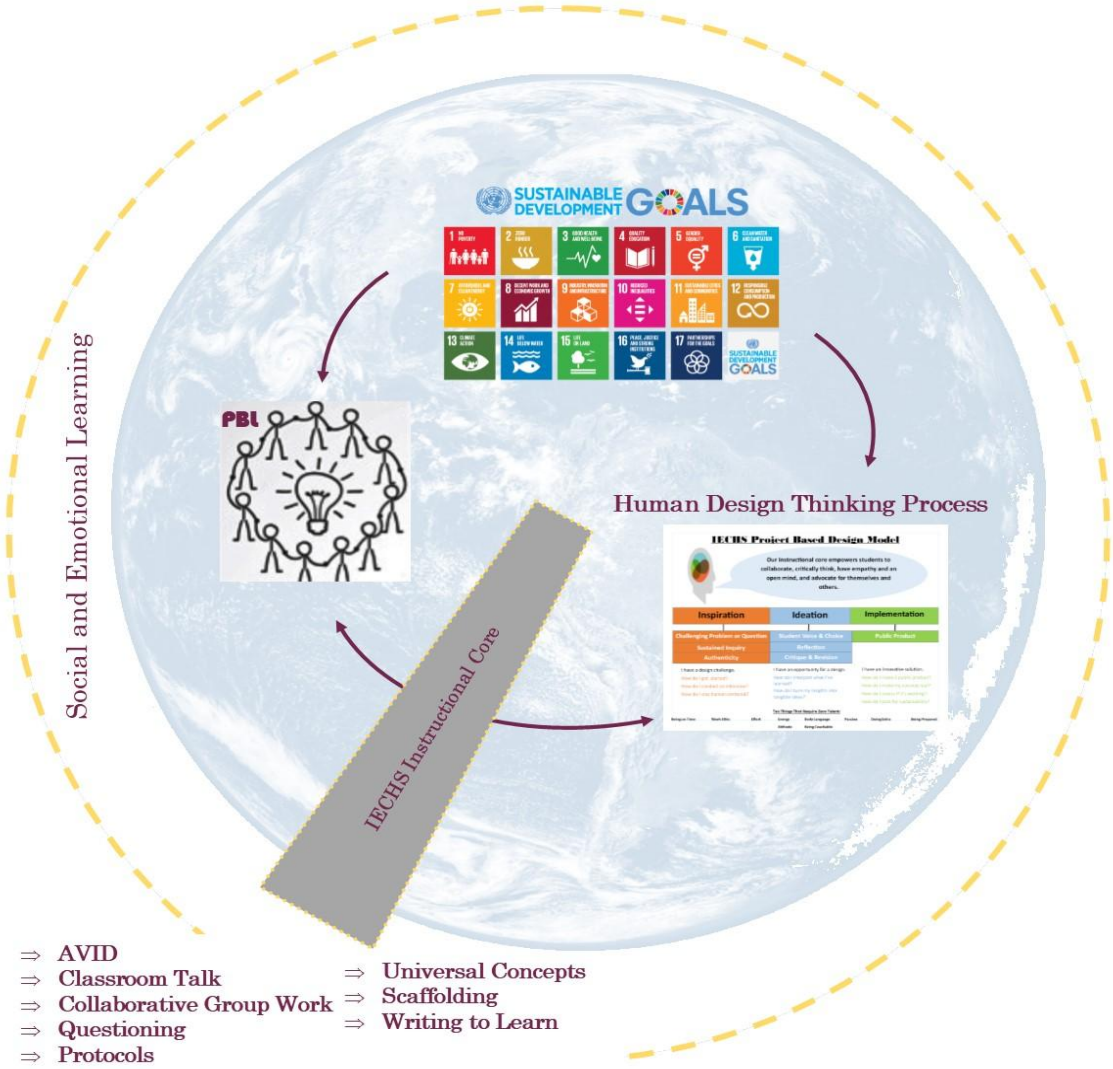
From this set of values, we collaborated to develop our school culture and instructional framework.

In the IECHS Instructional Framework, shown in Figure 1, we use an inquiry-based teaching model to embed project-based learning, human-centered design thinking processes, and the United Nations Sustainable Development Goals (SDGs). Our instructional mission is to increase student agency by facilitating learning through inquiry. The framework includes critical thinking, analyzing facts and ideas, asking and following student questions, articulating opinions, and collaborating with empathy and compassion to address important local, national, and global issues. Our goal is to teach our students how to leave this world better than they found it. We firmly believe a potent methodology, an efficient form of rigorous inquiry, exists and can match this most important societal need (Bryk et al., 2015). The IECHS framework is robust; however, we must match that framework with instructional practices that help us reach our vision.

Next, I discuss the rationale for the PAR, the focus of practice (FoP), and the assets and challenges to the FoP. Then, I discuss the project's significance to the practice, policy, research, and the PAR connection to equity.

Rationale

IECHS staff anticipates a school that fosters student agency so all students can be influential leaders in society. Our students can be leaders, but stereotype and identity threats are too often a constant in their lives (Branscombe et al., 1999). Many IECHS students enter the program plagued by negative self-concepts, which blocks full engagement in the learning process (Rydell et al., 2009). Many students lack the confidence to engage in inquiry-based instruction and, thus, they demonstrate a low level of student agency (Steele, 2010). In designing the IECHS framework, we were clear about increasing student agency and engagement in a



IECHS INSTRUCTIONAL FRAMEWORK

Quality instruction engages learners in collaboration and metacognition.

Empathy and open-mindedness empower students to become advocates for themselves and others.

It is our job to leave this place better than we found it.

Figure 1. IECHS Instructional Framework.

learning process that supports student confidence and ensures students fully participate in an inquiry-based curriculum that better prepares them for academic success.

Student agency is the ability to manage ones learning through self-efficacy, goal setting, growth mindset, perseverance, meta-cognition, and self-regulation. According to Zeiser et al. (2018), "developing these skills can have significant effects on academic achievement as students take an active role in seeking and internalizing new knowledge" (p. 1). The school needs to support underrepresented students, largely students from racial/ethnic minorities, first-generation college students, or from lower socio-economic households, as they encounter stereotypical negative thoughts and identity threats. We designed our program to disabuse the stereotype and identity threats that many students bring with them to school. All students should believe they belong at IECHS (Steele, 2010).

Through the PAR project and study, I sought to support teachers as they practiced the IECHS framework through inquiry-based lessons that engage students in academic discourse. Students of color and underrepresented students need access to learn about the world around them and how they can positively affect that world. Vygotsky (1978) argues that thinking originates in social interactions between people; hence, collaboration and discourse is a means to thinking and higher mental functionality. The concept of intersubjectivity is a critical learning tool and activates working memory in students so that the dialogue helps them rehearse and build knowledge and skill (Branscombe et al., 1999). If students sense they have safe spaces to openly share and contribute to meaningful classroom dialogue, they are more likely to engage in classroom dialogue at IECHS. We have a lofty goal that we think is possible–our students should use dialogue to transform their world and to achieve significance as human beings (Freire, 1970).

We desire not to use a traditional education system of standardization, and instead choose to standardize the opportunities available to all students (Kendi, 2019).

The instructional framework, created by the School Improvement Team (SIT) in 2018, provides teachers with direction for implementing the inquiry model, but we still need to develop more specific classroom instructional activities that match our vision. In other words, enacting our espoused vision is critical: we want our theory of action to become our theory in use (Argyris, 1985; Argyris & Schön, 1997). Currently, teachers independently develop lessons to integrate the framework recommendations in their classrooms. However, they often expressed that they lacked the knowledge and skills to effectively implement the inquiry-based methods the framework requires. Multiple assets in the school support implementation of inquiry-based instruction, yet full implementation has been a challenge. In the PAR project, I collaborated with a small team of teachers to develop learning experiences to support teachers in understanding and implementing inquiry-based instruction (Lazonder & Harmsen, 2016) by first assessing our assets and challenges.

Analysis of Assets and Challenges

The micro, meso, and macro-level assets and challenges influenced our ability to implement inquiry-based instruction. The micro-level is the school, school location, classroom, and staff. The meso level is the local community, including the district and university level. The macro-level is the state level. I detail the asset and challenge analysis in the fishbone diagram of Assets and Challenges for the Focus of Practice presented in Figure 2.

Micro Assets and Challenges

From observations and from conversations with staff, they say IECHS students are generally eager to learn, and most students want to thrive in a nontraditional setting. The staff at

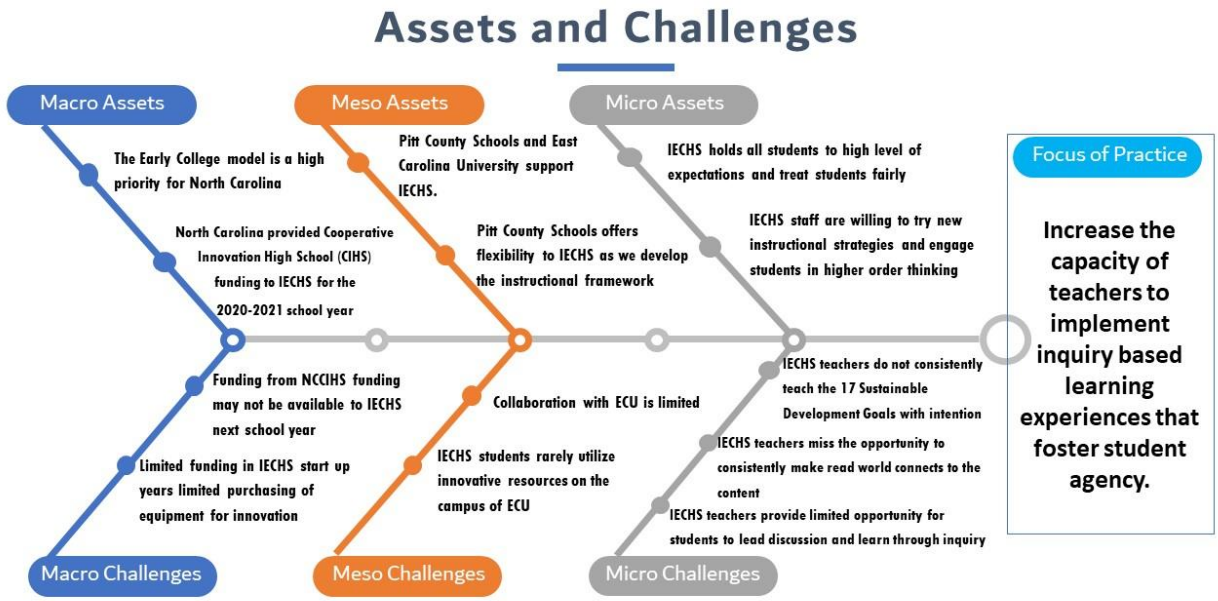


Figure 2. Fishbone of assets and challenges for Focus of Practice.

IECHS are open to change, and willing to experiment with new instructional strategies. They engage in conversations to deepen their understanding and implementation of innovative teaching practices. For example, in 2019 our science teacher wanted to create a brand new Honors Innovation Design course to teach students hands-on experiments that facilitate critical thinking about Science, Math, and Engineering. I have observed some teachers engage students in higher order thinking by utilizing advanced questioning strategies. In general, students feel teachers are supportive and prepare them for their collegiate futures.

However, data from 2018-2021 from the annual required IECHS School and Teacher Climate Survey noted IECHS has several challenges in terms of the student classroom experience. Students indicated they would like to see more choices about what they study and more opportunities to drive discussions with their questions. Students wanted to facilitate deep conversations and have teachers use these conversations to guide instruction. They shared that using inquiry would be beneficial for their learning. Further, the survey revealed that teachers did not consistently use the United Nations Sustainable Development Goals in the curriculum.

Meso Assets and Challenges

At the meso level, the local county schools (CS) and the partner university (PU) support IECHS and the vision to implement a unique instructional framework. CS has offered flexibility to IECHS and supported the staff as they developed the instructional framework. The district office has provided funding for an Instructional Coach, to purchase technology for all staff and students, and for professional development for teachers.

However, the collaboration with PU is limited and often not timely. At the time of this study, IECHS students had rarely used innovative resources like the PU Innovation and Design Lab on the college campus. The PU Innovation and Design Lab uses technology and a hands-on

approach to facilitate design across various content disciplines, but our students lack access. The future vision is to provide IECHS students access with more innovative resources across the PU campus.

Macro Assets and Challenges

The Early College model is a high priority for North Carolina. The Cooperative Innovative High School (CIHS) network has been instrumental in helping IECHS to become an established Early College. The goal of CIHS is to provide underrepresented students an opportunity for accelerated learning opportunities by offering high school and college courses. CIHS focuses on providing a rigorous academic setting that reaches the whole child by providing a personalized, student-centered, active learning, and collaborative environment (NC Department of Public Instruction, 2017). Early colleges are a comprehensive schooling model explicitly focused on college readiness for all (Edmunds, 2012).

During the 2020-2023 school years, IECHS obtained funding from North Carolina under the CIHS program; however, the lack of financing from CIHS funds for the first two years of the school's operation hindered the schools' ability to purchase learning tools that support our innovative design. During the 2020-2021 school year, IECHS received $275,000 in CHIS funds. However, during the 2021-2022 school year, that amount decreased to $200,000, which affected our ability to purchase innovative learning materials. At the state and national levels, the policy efforts for college readiness are critical if we are to continue providing institutional support for our efforts.

Significance

Our students are growing up in a world where they need to understand and know how to make sense of what is happening globally (Mehta & Fine, 2019). Some students do know how to

use information appropriately to support a belief or assertion (Kundu, 2020). Through inquiry-based learning, our students will learn to locate reliable sources, use textual evidence to formulate opinions, and communicate their thoughts, ideas, and beliefs. As students engage in inquiry and academic discourse, they ask questions and engage in critical thinking. As a result, they build a sense of agency and belief (Riordan et al., 2019). As Freire (1970) stated, "knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world, and with each other" (p. 72). We must teach our students how to wonder about life and use that knowledge to develop their critical thinking repertoire. Thus, this project had specific significance for our context, but could inform practice, policy, and research in other contexts.

The PAR project and study are significant to the Early College model because they provide a different paradigm for instruction: to increase student agency by facilitating learning through inquiry. As students take ownership of their learning, they become more engaged in the process. Students who believe knowledge can grow over time perform better on tests, and students who want to grow are more likely to set academic goals focused on mastering content rather than focusing on achieving a particular test score or course grade (Cury et al., 2006). Students who set mastery-oriented goals tend to process information in a more in-depth and more organized fashion than those who set performance-oriented goals (Elliot et al., 1999).

In terms of classroom practice, a disconnect existed between how the course content aligned with local, national, and global issues. I observed a disconnect between teacher-directed instructional practices and those that supported student agency. We were sometimes practicing what we see prevalent in schooling in the United States—our most struggling students of color, those with a disability, living in poverty, English language learners, and immigrants experience

instruction that reflects compliance towards memorization and test taking (Riordan et al., 2019). Our ability at IECHS to link inquiry-based instruction and student agency to high school content makes the project and study useful to our context and to other early college high school classrooms in the state.

The PAR project outcome could lead to policy insights for other North Carolina Cooperative Innovative High School (CIHS) instructional models. We intend to share the PAR project and study results within that network. CIHS school leaders could replicate the process for collecting and analyzing data in their setting. This study provided methodologies that other CIHS can use to transform theory into action in the service of teachers using inquiry practices for teaching. As a result, the framework and its implementation can provide direction for future policy and budget decisions at the state level.

Connection to Equity

The focus of practice related to equity issues as most students enrolled at IECHS are students of color, first-generation college students, or students considered to be at risk for academic success. Students who enroll at Early Colleges receive needed support as they strive to succeed in high school and college courses (NC Department of Public Instruction, 2017). However, being ready for college does not necessarily mean one's education has been meaningful or has prepared them to participate in a democratic society. The goal at IECHS is to ensure students have the necessary skills needed for college, including developing student agency. Another key purpose of schooling in a democratic society is developing citizens who positively contribute to their school and community (Labaree, 2008). In the PAR project and study, I focused on collaborating with teachers to build a more robust inquiry-based instructional process to prepare students for college, citizenship, and community and family membership.

Three equity frames supported the focus of practice: (1) political frame and how IECHS works to shatter an oppressive context for students, (2) the sociological frame that influences students to conform to racial ideas, and (3) the psychological frame and how it subconsciously shapes our student's self-image.

Political Frame

Intentional or not, many schools and educators operate from a historically oppressive frame, shaped by years of inequitable policies and practices that created a deficit mindset in educators (Labaree, 2008). As the current education system focuses more on accountability, standardized tests drive many decisions. While there is focus on being college ready, “being ready for college does not necessarily mean one's education has been meaningful, one's cultural roots have been strengthened, or that one is ready to participate in a democratic society" (Gutiérrez, 2013, p. 12).

Educators must identify an oppressive and deficit mindset and respond accordingly. Rather, *conocimiento* can lead to mind shifts for educators and students of color. According to Gutiérrez (2013):

> [P]olitical conocimiento involves understanding how oppression in schooling operates not only at the individual level but also the systemic level; deconstructing the deficit discourses about historically underserved and/or marginalized students; negotiating the world of high-stakes testing and standardization; connecting with and explaining one's discipline to community members and district officials; and buffering oneself, reinventing, or subverting the system in order to be an advocate for one's students. (p. 11)

The staff at IECHS intentionally spent time during professional learning community (PLC) meetings reflecting on instructional practices with hopes of creating a school and

classroom culture that values all students and allows students to have voice and choice. Student voice can make an impact when school stakeholders connect student's thoughts and ideas to allow for influence in classroom practices (Cook-Sather, 2020). Our goal was to involve students in political structures and decisions that affect their lives within the classroom.

Sociological Frame

Many students of color at IECHS declared they should not be at an Early College, or that IECHS was not the right school for them. This group of students did not believe they can achieve at high levels and tended to underperform. Experiencing stereotypes for long periods allows inaccurate beliefs to become ingrained (Steele, 2010). Because people label these students as underrepresented, they tend to believe the racist ideas that people projected onto them. When people believe a racial group's success or failure is linked to the group members, the individual member's success or failure is linked to the entire group, then they have accepted a racist idea (Kendi, 2019). Often, society views people as the "historic flashcard" of how they are to be treated, where they are expected to live, where they should go to school, and what kind of positions they should have (Wilkerson, 2020).

IECHS has created a school culture that seeks to break the traditional belief that only certain students can learn at high levels. We believe, speak, and implement strategies that require all students to work at a high level. Over the course of attending IECHS, traditionally underrepresented students have begun feeling accepted, valued, worthy, and safe.

Psychological Frame

Stereotypes placed on students run deep. "Stereotype threat does affect the academic performance of minority students" (Steele, 2010, p. 159). Over the past four years, at least ten students have shared with the administration that they feel they do not belong at IECHS. One

student shared, "The streets are calling me. They tell me I should not be here. They tell me black boys do not attend Early Colleges." This thought process is an example of an identity threat, “a significant cause of minority underachievement in American higher education" (Steele, 2010, p. 159).

The political, sociological, and psychological frames burden the youth at our school. Thus, this PAR project and study supported our work at the school to make college readiness possible for more students. In the process, we wanted to create classroom experiences that model our beliefs and provide equitable and excellent education experiences.

Participatory Action Research Design

I was the lead researcher in the PAR project. The overarching purpose was to work with teachers to develop inquiry-based instruction that increased student agency at Imagination Early College High School. I worked with a group of teachers to achieve that aim, and we used the improvement science principles and community learning exchange axioms and processes to do so. In this section, I reiterate the purpose of the project and present the research questions. Then I discuss the theory of action for the PAR project and study.

Purpose Statement and Research Questions

The goal of the PAR project and study was to collaborate with IECHS teachers to develop and increase the inquiry-based learning experiences at IECHS. We began the school with an inquiry-based instructional model, but the teachers encountered challenges in enacting the model. To begin this action research, I invited five teachers to be in a co-practitioner researcher (CPR) group that collaborated to identify inquiry-based instructional practices. The CPR group engaged in the research study (Gerdes & Conn, 2001). We generated a collaborative

learning space, engaged in action and reflection (praxis), developed goals, and worked together to implement goals (Bryk et al., 2015). We developed implementation strategies.

The overarching research begs the question: How do teachers design and implement inquiry-based learning experiences to foster student agency? The sub questions which guided the PAR project and study are as follows:

1. To what extent do teachers collaborate to design learning experiences that embed inquiry-based instruction?
2. To what extent do teachers implement learning experiences that promote inquiry?
3. How does the process of collaborating with teachers affect my development as an instructional leader?

Theory of Action

The teachers and I developed learning experiences that effectively integrated inquiry into daily instruction. By focusing on incorporating inquiry-based instruction, teachers developed the pedagogical capabilities to make the framework come alive in the classroom. Through this PAR, teachers developed a common understanding of inquiry-based instruction. Accordingly, the theory of action for this dissertation was: If teachers co-create inquiry-based learning experience, they will have the knowledge and skills to implement an inquiry-based pedagogy designed to cultivate student agency.

Proposed Project Activities

Teachers at IECHS needed a paradigm shift in their teaching. While several teachers provided students with high-level thinking, they struggled with real-world connections. We did not consistently use inquiry-based approaches or include the Sustainable Development Goals. The IECHS instructional framework requires teachers abandon what Freire terms the banking

method of education and replace it with an inquiry-based methodology based on real-world problems (Freire, 1970).

I worked with one set of participants. The participants were members of the co-practitioner researcher (CPR) team. This team embarked on a focused learning journey (Bryk et al., 2015). As a group, we worked closely to co-generate a collaborative learning space, engaged in action and reflection (praxis), developed goals, and worked together to implement goals (Bryk et al., 2015). I collected and analyzed data from the CPR team and team meetings. Three of the CPR participants were teachers who implemented inquiry-based strategies into their classrooms, and two were instructional coaches who support the teachers.

We engaged in three cycles of inquiry over fourteen months, beginning in August 2021 and ending October 2022. Table 1 outlines the proposed PAR tasks and time period for completion of the task. The CPR team closely monitored the timeline to complete each activity within the allotted timeframe.

Study Considerations

The security of the data and the participants' confidentiality is important. All participants provided consent without feeling pressured or having a sense of obligation. Participants signed a consent form and I informed him or her that participation is voluntary, and they could request to terminate participation at any time (see Appendix D for the Consent Form). I stored all important papers and data files in a locked file cabinet as well as password protected all electronic forms of data collected.

The limitations of the quantitative study included the researcher's biases and ability to generalize the findings of the study. As the primary researcher for the PAR project, I brought ideas to the study. During the PAR cycles of inquiry, I had an influential role as the school

Table 1

PAR Tasks and Timeline

Task	Time Frame
Research inquiry and student agency	August-November 2021
Research effective strategies/tools that align with inquiry	August-November 2021
Decide on key teacher and student attributes of inquiry	November 2021-April 2022
Create a coaching tool	November 2021-April 2022
Reflect on coaching tool and make needed adjustments to tool	November 2021-April 2022
Teacher-practitioner teaches a model inquiry unit	April-October 2022
Observe classrooms	April-October 2022
Reflect on observation data and make needed adjustments to model unit plan	April-October 2022

administrator but tried to neutralize the positional power that comes with being a school-level administrator by being intentional about creating a collaborative space for teacher work and co-design. I took measures to ensure validity by checking for accuracy of the findings, using reflective memos, and member checks. The member checks are similar to focus groups, which "are a recognized way of exploring the opinions, beliefs, and attitudes of a group of people and of enabling people to respond and interact together" (Birt et al., 2016, p. 1,805). I asked members to comment on the analyzed data to determine if my analysis reflected their experience, and members provided further comments or insights (Birt et al., 2016). The process of triangulation helped me determine the accuracy of the findings (Creswell & Creswell, 2018). I confirmed confidence in the truth of the findings by using multiple data sources, member checking, and by careful and iterative coding of the data (Guba & Lincoln, 1982). I conducted member checks during each PAR cycle of inquiry to ensure the data was valid. I discuss the details of confidentiality and ethics in Chapter 3.

We expected this study to be useful to the CIHS. IECHS is a member of the CIHS network and though the intent of this study is not to generalize findings to other settings outside of IECHS (Creswell & Creswell, 2018), the process for collecting and analyzing data could be replicated in other schools within the network. This study provided methodologies that other CIHS sites can use to apply theory to action in the service of teachers using inquiry practices for teaching. However, there may not be any generalization of specific outcomes to other contexts.

Summary

Students who anticipate being first generation college attendees need to have high school experiences that support them to participate in the classroom setting, engage in inquiry-based learning, and perform at high levels. However, many students enter high school struggling to see

themselves as high performers. They often internalize the stereotypical beliefs of others and then underperform. "This type of anxiety attack can be a form of internalized oppression, whereby the student internalizes the negative social messages about his racial group, begins to believe them and loses confidence" (Hammond, 2015, p. 47). We can embed intentional strategies in instruction to provide opportunities to increase student agency. As we continue to improve our instructional foundation and intentionally incorporate inquiry-based instruction to increase student agency, we provide a positive way to enact the framework.

In Chapter 2, I present a review of research pertinent to the study. In Chapter 3, I detail the methodology of the study with information regarding study participants, data collection, and data analysis methods. The focus for Chapters 4 and 5 will be the inquiry PAR cycles and an analysis of the coding of data. In Chapter 6 I discuss implications and the study findings. Finally, in Chapter 7 I detail my growth and development as a leader.

CHAPTER 2: REVIEW OF LITERATURE

Imagination Early College High School (IECHS) strives to create a school culture that embodies empowering students to be lifelong, influential learners. As we worked to achieve this goal, we realized staff needed to focus on specific areas: student agency, deeper learning, inquiry-based learning, academic discourse, and adult learning. In this chapter, I review agency and the power agency can have in student lives and examine how educators can embed agency into the classroom. Then, I explore deeper learning and inquiry-based instruction. Finally, I conclude with an analysis of adult learning and key ideas regarding how to structure professional learning so educators understand how to implement student agency, deeper learning, and inquiry-based instruction into their professional practice.

The Power of Agency

We need to change student learning, so we need to change schools, so we need to change systems. Jal Mehta

As educators strive to make education meaningful to capture students' hearts and minds, they must focus on intentionally fostering student agency. In most schools, standardized test scores are used to measure a student's growth and academic performance. However, these scores alone do not tell the whole picture of a student's progress in the education system (Kundu, 2020). A focus on student agency can provide more attention to holistic growth in combination with increasing students' academic performance measured in more ways than testing (DeLuca, 2002; Kundu, 2020; Reeve & Tseng, 2011; Zeiser et al., 2018). To understand how fostering agency can positively affect student achievement, I analyze the complex dynamic of academic-centered student agency and personal agency. Thus, I define student agency and personal agency, explore self-efficacy and its alignment to student agency, and analyze the relationship between motivation and agency.

A Tale of Two Agencies

Agency is a multifaceted concept that focuses on how students influence agency within an academic setting (student agency) and how students influence situations and actions that affect their personal lives (personal agency). Both types of agency center on how students exercise influence over themselves and the world around them. The power to engage in action over a situation for an intended purpose is a crucial feature of agency (Bandura, 1997). Both student agency and personal agency provide students with a valuable opportunity to feel and exhibit a sense of power in their lives.

Student Agency

Student agency largely focuses on a student's ability to manage his or her learning within a classroom to affect academic performance (Zeiser et al., 2018). Through exerting student agency, learners take an active role in their learning (Jääskelä et al., 2020), command their choices and actions (Bandura, 2006), and believe knowledge can grow over time (Zeiser et al., 2018). At IECHS, we define Student agency as the ability for one to manage their learning (Zeiser et al., 2018). With agency, students can engage in self-directed behavior (Mercer, 2011), set academic goals focused on mastering content (Cury et al., 2006), and have an intentional, proactive, and constructive contribution to the flow of instruction (Reeve & Tseng, 2011). This view of agency places the focus of impact on a student's learning process.

Student agency has a positive impact on student achievement and student's overall well-being. For example, Toshalis and Nakkula (2012) identified student agency as key to significant results such as "elevated achievement level in marginalized student populations, great classroom participation, enhanced school reform efforts, better self-reflection and preparation for improvement in struggling students, and decreases in behavioral problems" (pp. 27-28). Reasons

for this type of contribution to achievement is that teachers who are intentional and proactive in their teaching provide students with strategies to improve their learning experiences and learning environment (Reeve & Tseng, 2011).

Fostering student agency depends on intentional efforts by teachers and administrators and a school culture of agency-supportive pedagogy. This culture should include these key elements: setting a positive environment, allowing for self-reflection and metacognition, and teachers providing feedback (Zeiser et al., 2018). Feedback is vital for student agency and self-efficacy to grow and take root (Kundu, 2020). Educators should provide specific and timely feedback so students can understand and reflect on their performance. Informing students about their actual performance is among the most critical tasks of student agency and self-efficacy (Olivier et al., 2019).

Student agency can be supported when educators provide student voice and choice, emphasize a safe and encouraging environment, provide outside opportunities for students, embed academic discourse, help students to set and reflect of goals and allow for collaboration (Jääskelä et al., 2020; Zeiser et al., 2018). Figure 3 identifies six ways educators can develop an agency-supportive pedagogy (Jääskelä et al., 2020; Zeiser et al., 2018): Creating this type of learning environment will allow students the chance to thrive and develop agency.

Personal Agency

Personal agency means that students can experience agency beyond the classroom; it can affect their life performance. Kundu (2020) points to a more holistic idea of a student's ability to change their life trajectory through personal agency, also known as human agency. Therefore, agency is more than students having the power to affect a classroom setting; the hope is that cultivating agency in the classroom can support students to transform their narratives beyond the

Figure 3. Supportive pedagogy increases student agency.

classroom. Students can be personal agents of change and can make personal contributions throughout their lives (Bandura, 2006) and influence their lives regardless of obstacles. As such, personal agency requires individuals to use their free will and influence to affect their personal lives to navigate challenges and limitations and leverage resources (Kundu, 2020). Bandura (2006) indicates that to accomplish this goal one must focus on self-organization, self-efficacy, self-regulation, and self-reflection. These skills provide students the tools to positively affect their lives. This agency type allows students of all backgrounds, including students who are first-generation college goers, to make significant changes affecting them and their environments. Through personal agency, students can create their course and reject determinism that may predefine what their life's outcome should look like based on previous generations (Kundu, 2020).

To reject determinism and increase personal agency, educators must guide students in deconstructing the social structures that negatively affect their self-efficacy. A primary difference between school-focused student agency and personal agency focuses on analyzing and deconstructing social issues and structures (Kundu, 2020). For example, in a study of high school students in an alternative school setting, Ramos (2021) focused nine students on analyzing the circumstances that affected their lives; the students largely felt responsible for their underperformance. By shifting their focus to analyzing internalized oppression, the students gained personal and student agency to speak out about their needs and how their school could better support them. Thus, they embraced self-efficacy and self-reflection to enact change.

Deconstructing social structures enables students the opportunity to engage in discourse about how the structures of the world affect their personal existence. This experience authorizes students to analyze the current status of the world around them and, more importantly, think

about how they can make the world better for themselves and their community (Kundu, 2020). To foster personal agency, educators must place a focus on allowing students–especially those with less privilege–to acknowledge and discuss essential realities relevant to their lived experiences (Kundu, 2020). Unlocking the potential of underrepresented students requires an explicit acknowledgment of how external structures and systems affect their lives, and that success is possible despite perceptual limitations of social origin (Freire, 1970). Unequal conditions in schools can be internalized and cause some students to question the school's actual relevance and benefit (Kundu, 2020). Therefore, educators must empower students to buy into education while also allowing them to draw upon their lived experiences and what they have learned from their environment (Kundu, 2020). This reflective process can enable students to embrace their experiences and think critically about ways they can change their situations. Students can achieve success by educators focusing on a holistic approach to personal agency.

In addition, personal agency can be fostered in an education setting through praxis and problem-posing. Praxis is the process of action and reflection (Freire, 1970). Teachers need intentional focus when implementing praxis within the classroom. "Problem-posing education bases itself on creativity and stimulates true reflection and action upon reality" (Freire, 1970, p. 54). Educators should provide students with the opportunity to analyze their social positions, think critically about these positions, and navigate new pathways through these positions. Educators can assist in this process by "helping students recognize the many different pathways they can embark on while empowering them to believe in themselves enough to follow the path that is most purposeful to them" (Kundu, 2020, p. 62).

Agency building is a combined internal effort of will and skill among educators and students. During the teaching and learning process, teachers must ensure students can ask and

answer fundamental questions. Students should answer the following questions during every step of learning, as outlined by Kundu (2020).

- What exactly am I trying to learn here, and why?
- What are the different ways I can show that I have learned or mastered this?
- What is the next thing I should then be able to conquer?
- And if I get stuck, how can I locate the resources I need for help? (p. 20)

Critical thinking and answering these questions allows students to have autonomy in the learning process. These questions assist students in the classroom and the real world as they learn to set personal goals and solve personal problems. "Empowering students to express their opinions while having the influence of their educational experiences so that they feel they have a stake in the outcomes is one of the most powerful tools schools have" (Toshalis & Nakkula, 2012, pp. 29-30)

For example, Anderson et al. (2019) conducted research on 6,077 middle and high school students and concluded that personal agency, especially self-efficacy, can reinforce and play a role in academic performance. The research findings indicated middle schools that combine targeted interventions in academic skills, effective engagement, and personal agency together "may be a powerful protective lever to resilience to disrupt patterns of disengagement, poor academic performance, and even factors outside of students control like generational poverty" (Anderson et al., 2019, p. 215). The exploration into self-advocacy revealed a connection to self-efficacy.

Self-Efficacy

Nothing is more significant to student agency than self-efficacy (Bandura, 1997; Pajares & Urdan, 2006). Self-efficacy, grounded in social cognitive theory, is the ability to look inward

and develop self-confidence to positively affect one's environment (Kundu, 2020). This is a reflective process about one's belief in controlling their behavior to produce a specific desired performance (Bandura, 1997). In other words, self-efficacy is a focus on one's judgment of personal capability. "People's belief in their efficacy affects almost everything they do: how they think, motivate themselves, feel, and behave" (Bandura, 1997, p. 3). Unless a person believes that they can produce desired results by actions, they have little incentive to act or persevere in the face of challenges (Pajares & Urdan, 2006).

As defined by Jääskelä et al. (2020), self-efficacy in the education setting is a student being self-confident as a learner. Students who feel efficacious for learning work harder, participate more readily, persist through challenges, and achieve at a higher rate (Schunk & Pajares, 2002). Young students tend to be more efficacious and motivated in the education setting. Student self-efficacy declines as students move from upper elementary grade levels to high school (Eccles & Roeser, 2011; Olivier et al., 2019; Wigfield et al., 2006). However, teachers can positively affect and change self-efficacy by the instruction they provide. Belief in one's efficacy is a critical, personal resource in personal development and change (Bandura, 1997).

Self-efficacy is a robust predictor of academic performance among social-cognitive factors related to academic performance (Sheu et al., 2010). In a meta-research on 38 existing studies, academicians found a positive relationship between self-efficacy and academic achievements (Multon et al., 1991). A meta-analysis report of 23 quantitative studies by Manzano-Sanchez et al. (2018) on the influence of self-efficacy and academic performance of Latina/o students in the United States indicates a significant and positive relationship between

self-efficacy and academic performance. The findings demonstrated that Latina/o students with higher self-efficacy attain higher grades and succeed academically.

Different strategies implemented within the education setting can positively affect self-efficacy. Motlagh et al. (2011) indicate that education can regularly emphasize self-efficacy and self-regulation. Figure 4 outlines the sub-skills of the self-regulation process, which educators can implement within the classroom setting. A self-regulated learner sets goals, self-monitors, self-evaluates and self-reflects at various points of the learning process (Toshalis & Nakkula, 2012).

The self-regulation processes are a necessary component of classroom instructional practices; if teachers use strategies that support these steps of self-regulation they can improve self-efficacy: strategy instruction, strategy verbalization, social models, performance feedback, and performance-contingent rewards (Schunk & Pajares, 2002). These processes have the power to inform students of their capabilities and progress in learning (Schunk & Pajares, 2002). This information provides students with motivation within the education setting because the steps toward self-efficacy through self-regulation are explicit (see Figure 4).

Individuals with high efficacy persist when things are hard to come by, and those with low efficacy are often rapid quitters (Bandura & Schunk, 1981). Students who feel self-efficacious about their learning or when performing a task correctly are apt to "participate more readily, work harder, persist longer when they encounter difficulties and achieve at a higher level" (Pajares & Urdan, 2006, p. 73; Schunk & Pajares, 2002). A strong sense of self-efficacy fosters a high level of motivation and develops an intrinsic interest in academic subject matter (Bandura & Schunk, 1981). People motivate themselves and guide their actions through the exercise of "forethought" (Bandura, 1997). In this process, people form beliefs about what they

Figure 4. Self-regulation process.

can do. They anticipate positive and negative outcomes, set goals, and plan action to realize positive versus adverse outcomes (Bandura, 1997). People's motivation varies across settings and domains. For example, motivation for a school task can be influenced by the task's conditions, overall motivation for school, and one's overall environment (Wigfield & Eccles, 2002).

Students moved by intrinsic motivation versus extrinsic motivation have higher persistence, which affects higher achievement levels (Wigfield & Eccles, 2002). Although motivation may be hard to teach, it is malleable and not innate. Educators need to understand that acquiring new skills can grow existing abilities through effort and increase motivation regardless of past achievement (Toshalis & Nakkula, 2012). Students who operate from intrinsic motivation do not seek physical or tangible rewards for their work. Instead, students driven by intrinsic motivation seek self-improvement and growth. What fuels these students is growth, development, and the desire to participate in activities that satisfy their need for change (Wigfield & Eccles, 2002). Emphasizing intrinsic goals can increase health, well-being, and performance (Vansteenkiste et al., 2004).

The education setting can affect intrinsic motivation. Educators can motivate students to apply themselves by truly knowing their students. Understanding students' beliefs, anxieties, and backgrounds combined with personalizing teaching and learning approaches can motivate them (Toshalis & Nakkula, 2012). Personalizing the education setting and allowing students to have a voice in learning provides for positive classroom culture. As educators give students choice, control, challenge, and collaboration opportunities, their motivation can increase (Toshalis & Nakkula, 2012).

Educators’ instructional practices raise student interest when they inform children they are making progress in learning (Schunk & Pajares, 2002). In addition, Bandura and Schunk

(1981) found that when educators help students set proximal goals, the student's self-efficacy and intrinsic interest increase. "Regardless of past achievement, if students believe (or are taught to believe) that they can acquire new skills and improve existing new skills through focus and exertion, their motivation to try will grow" (Toshalis & Nakkula, 2012).

Schools implementing deeper learning and inquiry-based opportunities can support student agency, self-efficacy, and motivation. In exploring deeper learning and the impact on student learning, I make a case for how deeper learning can be positive for students. Then, I present a variety of ways that educators can embed deeper learning in the classroom. I connect deeper learning to inquiry-based instruction by defining inquiry-based instruction and exploring the different inquiry-based instruction types. Finally, I present the clear connection between deeper learning and inquiry-based instruction.

Pursuing Deeper Learning and Inquiry

> *For apart from inquiry, apart from the praxis, individuals cannot be truly human. Knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world, and with each other.*
>
> Paulo Freire (1970)

Education can no longer place a narrow focus on standardized testing and content standard completion. Practices that focus on lecture and rote memorization set up students to leave high school unprepared with outdated skills and shallow knowledge (Hammond, 2015). Instead of the usual focus on rote learning or low-level thinking, students should "explore, collaborate, make choices, and use their imaginations" (Buchanan et al., 2016, p. 24).

Allowing students to take ownership in their learning can provide for a robust learning and growing experience. One way to achieve an educational environment that enables students to drive knowledge is through deeper learning. In this section, I define deeper learning and discuss

the importance of students having access to deeper learning and inquiry-based learning to sustain them to be lifelong problem-solvers. Finally, I provide guidance on how educators can move toward deeper learning.

Deeper Learning

Moving student's educational experiences from rote learning, memorization, and testing to developing students as "skilled, creative, educated, informed and empathetic citizens and leaders" is the premise of deeper learning (Mehta & Fine, 2019, p. 12). Deeper learning is more than students learning content. Instead, deeper learning enables learners to develop a robust understanding of core academic content, exhibit critical thinking and problem-solving skills, collaborate, communicate, direct their learning, and possess an academic mindset (Hewlett Foundation, 2013). This process requires students to understand factual knowledge and use it to develop their arguments, interpretations, and conclusions (Mehta & Fine, 2019). As students engage in deeper learning, they interrogate issues, engage in critical thinking, and build a sense of agency and belief (Riordan et al., 2019).

The concept of deeper learning is not new. When Freire (1970) identified the "banking method" of pedagogy, where educators deposited knowledge to children as if they were empty vessels, as a form of oppression, he was offering a rejoinder to the typical instructional methods. Instead, as an alternative, he argued for a "problem-posing" pedagogy (Freire, 1970). Although the concept is not new, deeper learning concepts are not frequently used. For example, a 2009 High School Study of Student Engagement, which sampled more than 42,000 students, indicated that "material was not interesting" (82%), there was a "lack of relevance" (42%), "teacher lecture" was engaging (26%), and "discussion and debate" were engaging (61%; Yazzie-Mintz, 2010). Noteworthy is that these data indicate the "most frequent pedagogical model has students

sitting passively, a mode they overwhelmingly report leads to disengagement and boredom" (Mehta & Fine, 2019, p. 28). In the Yazzie-Mintz (2010) research, American teachers scored weakest in "analysis and problem solving, regard for student perspectives and quality feedback" and of these the least frequently observed in lessons was "analysis and problem solving," which was observed only 20% of the time.

As students engage in problem-posing experiences through deeper learning, they increase intrapersonal and interpersonal skills (National Research Council, 2012). Intrapersonal skills, such as grit, self-regulation, and persistence, are malleable and related to greater cognitive skills (Ottmar, 2019). These skills directly connect to self-efficacy and agency. The intrapersonal and interpersonal skills required in classrooms that promote cognitive opportunities "are teachable and spending class time practicing these skills have positive benefits for students" (Ottmar, 2019, p. 853).

A Case for Deeper Learning

A 2010 study on deeper learning with 1,097 students who attended 20 different California schools investigated the relationships between cognitive, interpersonal, intrapersonal opportunities, noncognitive outcomes, and student achievement (Ottmar, 2019). There are several terms in use to refer to these skills, including "deeper learning, 21st-century skills, college and career readiness, next-generation learning, new basic skills, and higher-order thinking" (National Research Council, 2012). The outcome from the research indicated that deeper learning practices influence students' academic skills. "Providing students with a variety of deeper learning opportunities, such as more problem solving, more rigorous academic content, creative thinking, and metacognitive strategies support stronger noncognitive outcomes, which may influence academic success" (Ottmar, 2019, p. 853). Key findings from the research found

links to cognitive opportunities (like complex problem solving, creative thinking, and rigorous academic content) and interpersonal (collaboration) and intrapersonal (self-efficacy, engagement) outcomes (Ottmar, 2019). Learning how to combine facts and procedures while working with others to create products and solutions facilitates higher-order thinking skills (Zwiers & Crawford, 2011). Both the cognitive perspective and sociocultural perspective are essential for deeper learning. Providing students with many opportunities to engage in challenging and engaging problem-solving learning opportunities that allow for collaboration helps to promote both cognitive and sociocultural opportunities within the classroom (Ottmar, 2019).

Importance of Access to Deeper Learning

Deeper learning encourages students to understand critical academic skills and valuable life skills that are critical to shift equity in academic performance. Schools that serve upper-middle-class students tend to have students engage in critical thinking of complex, open-ended questions, whereas schools serving working-class or high-poverty students engage in teacher talk, worksheets, and other low-level tasks (Mehta & Fine, 2019). "The notion that curriculum should challenge students to question issues is shared in ethnic studies and the deeper learning principles, which merges inquiry with critical thinking with rich, controversial content" (Riordan et al., 2019, p. 329). All students need access to engage in deeper learning regardless of social or economic status.

To address the economic goals of schooling, the basic skills of reading, writing, and arithmetic were highly desired by employers in the 1970s (Labaree, 2008). By 2019, the necessary skills shifted to complex problem solving, critical thinking, communication, and collaboration (Brooks, 2019). Over the past decade, technological advances and globalization

have fueled a demand for more highly educated workers (National Research Council, 2012). This fact signals that education needs to shift. A sole focus on reading, writing, and arithmetic is no longer adequate and must be broadened to include a more complex skillset. Graduates that possess basic skills but are partially informed, unable to think, and incapable of making moral choices are not well equipped to enter the workforce (Haberman, 2010). Providing students with academic programming that focuses on deeper learning can empower them and help them reap enormous rewards for future years (Kundu, 2020).

A deep look into schooling in the United States shows that our most struggling students, students of color, with a disability, living in poverty, English language learners, and immigrants, experience instruction that reflects compliance (Riordan et al., 2019). When investigating the success of deeper learning, affluent private schools and advantaged public schools with high-track classes seem to be the type of schools that implement deeper learning with success (Mehta & Fine, 2019). Baldwin (2008) wrote in "A Talk to Teachers" that teachers should challenge students to look at the world for themselves and make their own decisions. Yet Baldwin cautions that society is wary of such deep learners and thinkers. He reminds us that the structures of our society have been "hammered into place" and rely on compliance to be sustainable. This compliance is described by Haberman (2010) as the "pedagogy of poverty," where teacher-driven instruction influences students to sit passively and silently and places more focus on completing worksheets than students asking questions, making meaning, and problem-solving. Since the majority of educators practice compliance in education, there is limited demand for deeper learning. According to Mehta and Fine (2019), the qualities associated with deeper learning–"thinking critically, grappling with nuance and complexity, reconsidering inherited

assumptions, questioning authority and embracing intellectual questions"–are not widely embraced by the American people (Mehta & Fine, 2019, p. 38).

Educator Practice: Moving Toward Deeper Learning

Educators must allow all students to have an active role in the learning process. Students should be explorers and constructors of their learning, thus building their agency (McLaughlin & Talbert, 1993). This is a difficult task for educators in many school settings because they lack the necessary skill set, or the school culture is not conducive to deeper learning. Many educator preparation programs fail to support educators in developing the essential skills and mindsets needed to properly implement deeper learning and close the opportunity and achievement gaps (Riordan et al., 2019). The focus on state standardized testing, district-mandated scope and sequence, and teacher evaluation systems facilitate a misplaced focus for school culture (Mehta & Fine, 2019). For school cultures to thrive there needs to be a focus on academic engagement through relevance, student choice, and knowing that student learning and outcomes matter and are valued (Buchanan et al., 2016).

For deeper learning to take hold, the proper vision must be set. First, there must be an investment in educator learning. Second, there should be an alignment in educator and student mindsets to allow students a voice in the education process (Mehta & Fine, 2019). Finally, educators need to reconsider their roles to encompass new functions of being a co-learner, a learning guide, and a facilitator (Costes-Onishi et al., 2020). Based on the research from Mehta and Fine (2019), Table 2 outlines ways that schools can support a move to a deeper learning model.

For deeper learning as well as inquiry, which I will discuss next, to properly take center stage in a classroom, "teachers need to be equipped to facilitate investigations and conversations

Table 2

How to Support Deeper Learning

Category of Learning	Available Actions
Vision for Learning	Educators collaboratively generate a specific and finely detailed vision of learning and develop extensive opportunities for adults to learn that vision.
	Educators develop a collective identity that allows the teacher and student ownership of the vision.
	Educators align organizational processes to support all efforts within the vision.
	Student work and teachers' teaching is visible in public and shared to create collective accountability around enacting the vision.
	Administration buffers the school from external pressures not aligned with deeper learning, making space for powerful learning environments.
Educator Learning	Schools organize adult learning in ways that model what is expected of adults to teach students.
	Schools allow all adults to learn together how to achieve the vision for learning.
	Schools require adults to work in the same ways as they need students to work.
Educator Mindset	Educators see their purpose as less about covering material and more about inducting students into the work of their field.
	Educators privilege depth over breadth.
	Educators see students as creators and not simply receivers of knowledge.
	Educators see failure not as something to avoid but as a necessary part of the learning process.
	Educators draw on their personal, powerful learning experiences to generate a different vision of their teaching goals and practices.

Table 2 (continued)

Category of Learning	Available Actions
	Educators create an atmosphere of rigor and joy rather than compliance. Educators see deeper learning approaches as particularly important for their most disadvantaged and disaffected students.

that help students to analyze instead of recall, to justify instead of define, and to formulate instead of list" (Marshall & Horton, 2011). Deeper learning and inquiry-based instruction can be a powerful model when there is alignment of teacher beliefs, teacher practice, and student learning in the classroom environment (Song et al., 2012). To be effective, educators must do the inside-out work of "developing the right mindset, engaging in self-reflection, practicing social-emotional awareness, and holding an inquiry stance regarding the impact of interactions on students" (Hammond, 2015). The single most significant factor in improving student outcomes is the quality of the teacher (Marshall & Horton, 2011). Next, I further discuss inquiry-based instruction by defining the concept. I present the different types of inquiry educators can use in a classroom setting. I then examine how deeper learning and inquiry-based learning are connected.

Inquiry-Based Instruction

Engaging students in authentic and relevant work is a shift from outdated direct instruction practices. Student-centered approaches that facilitate authentic experiences are "supportive of skills development necessary for effective and satisfying participation in an increasingly complicated, global society" (Buchanan et al., 2016, p. 3). Students can no longer be dependent learners who lack the ability to authentically engage in critical thinking, problem-solving, and analysis of meaningful content (Hammond, 2015). Educators must purposefully center learning on authentic, real-world problems (Costes-Onishi et al., 2020) and support students to reason and think critically. Instead of teachers just telling students information, the students should discern for themselves the links and relationships between different facts, concepts and theories (Bruner, 1973). In that case, educators should make a conscious effort to provide opportunities for students to develop ideas for themselves through inquiry-based instruction (Marshall & Horton, 2011).

Inquiry-Based Instruction Defined

Inquiry-based instruction promotes critical thinking and student-centered, self-directed learning, engages students in real-world problem solving, creates lifelong learning skills, and supports developing a range of communication skills (Costes-Onishi et al., 2020; Song et al., 2012). A meta-synthesis analysis performed in Singapore over ten years (2008-2018) outlines that students learn best with inquiry-based instruction when "they are experientially and collaboratively engaged in the search for meanings, solving problems, questioning, sharing and communicating understanding" (Costes-Onishi et al., 2020, p. 552).

During inquiry-based instruction, educators challenge students to think critically without being overwhelmed. "Effective inquiry learning environments provide an active setting for students that provides essential scaffolding based on each student's readiness" (Marshall & Horton, 2011, p. 93). Decades of work on project-based learning and problem-based learning, both methods in inquiry, outline there is success when educators provide appropriate scaffolding and necessary direction (Mehta & Fine, 2019). Likewise, problem-based inquiry learning allows for purposeful, authentic, active learning guided by compelling questions that guide learners through age-appropriate activities and scaffolding (Costes-Onishi et al., 2020).

Different Forms of Inquiry

An important aspect of inquiry-based instructional models focuses on developing deep conceptual knowledge instead of surface-level rote learning (Marshall & Horton, 2011). Three approaches to developing conceptual understanding to inquiry-based learning are structured inquiry, guided inquiry, and open inquiry (Song et al., 2012). These approaches offer a scaffolded approach to inquiry. Structured inquiry includes for more teacher-centered instruction in which the teacher controls the content and creates the questions that students investigate. In

contrast, open inquiry is a student-centered approach that places responsibility on the student to develop, evaluate, and uncover questions in order to understand the content (Song et al., 2012).

In open inquiry, teachers challenge students to experiment, fail, return to experimentation and research, critically think, and try again (Buchanan et al., 2016). Learning is an active process; students take away ideas that form a part of their learning experience, and learning is socially and culturally rooted (Fernando & Marikar, 2017). Open inquiry provides for student interest, choice, and autonomy, all of which help to increase student motivation and agency in learning (Buchanan et al., 2016). Implementing inquiry-based learning provides space for students to construct determinations about problems, challenges, and issues they investigate, "helping to move them towards meaningful engagement and deeper learning" (Buchanan et al., 2016, p. 4).

A critical topic for student inquiry is the history of academic discourse and its evolution to helping students develop meaning-making in the education setting. I define academic discourse and outline the essential characteristics of academic discourse as a social process that helps to facilitate critical thinking. I examine how teachers use academic discourse in the education setting and outline key dimensions educators can use to embed academic discourse into their classroom settings.

Academic Discourse

Without dialogue, there is no communication, and without communication, there is no education. Paulo Freire (1970)

The pedagogical practice of using discourse in the classroom is not new. Dewey was influenced by Socratic dialogue and seminars (White, 2011), and, while discourse is a strategy used by many educators to engage students in learning, the use of effective discourse in classrooms is lacking. A literature review on academic discourse as a learning tool reveals an

increase in research on the subject beginning in the late 1960s (White, 2011). Freire (1970) pointed out that educators must engage students in the learning process by allowing students to question their world through dialogue, the *problem-posing method,* and avoid the banking method of teaching. Even though the problem-posing method was presented in the seventies and much research has been done on the importance of academic dialogue in the classroom setting, many educators fail to properly implement academic dialogue (Burbules & Bruce, 2001). Most dialogue is characterized by the teacher/student model, where the teacher assumes the primary role of directing academic discourse within the classroom setting (Burbules & Bruce, 2001). This fact is especially true for our student population, who are intending to be college attendees. Unfortunately, academic discourse is usually absent in the most needed classrooms: classrooms with a high percentage of students who are not succeeding academically (Zwiers & Crawford, 2011). Educators must cognitively challenge students who want to succeed academically instead of allowing them to participate in rote pedagogy. Student engagement is crucial because the process encourages students to have a voice to express their ideas by using supporting evidence on given topics. These processes enable them to engage in meaning-making (Bartolomé, 2012) and provide the skills of critical thinking and communication, which are necessary for higher education, desirable jobs, and positive societal change (Zwiers, 2007).

Discourse Defined

Academic discourse involves cognitive processes, complex relationships, and abstract concepts (Zwiers, 2007). More than just speaking and listening, academic discourse should provide opportunities for collaboration beyond a surface level of understanding, which yields minimal learning and processing of new information (Zwiers & Crawford, 2011). Student collaboration is essential and can provide a deep understanding of information and concepts,

provided appropriate implementation collaboration is implemented. Vygotsky (1978) argued that thinking originates in social interactions between people; hence, collaboration and discourse are a means to thinking. All higher mental functions spawn from collaboration with people. People learn not from reading and writing alone but through conversations–what Vygotsky (1978) terms intersubjectivity. Conversations foster listening, talking, and negotiating meaning, all of which are part of the language learning process (Zwiers & Crawford, 2011). Instructional activities that include social interaction are the glue that provides the access and rigor necessary in academic discourse (Burbules & Bruce, 2001).

Academic discourse has had various names: dialogue, classroom discourse, classroom discussion, accountability, academic conversations, classroom talk, and intellectual discourse. Yet, in some classrooms, teachers ignore or diminish students because they are unable to communicate in Standard English using the correct phonology, lexicon, and syntax. This restricts opportunities to learn for students of color who may primarily speak a dialect which is not standard to the traditional educational environment, for example, African American Vernacular English, while also sidelining cultural knowledge about rhetorical structures. "Working-class African American students often produce utterances in English that are difficult for their middle-class white teachers to understand" (Bartolomé, 2012, p. 343); the students often use discourse styles, which Boykin (1996) calls verve, that are unfamiliar to teachers and thus do not allow for the full repertoire of thinking (Boykin & Cunningham, 2001). The addition of cultural knowledge is essential as it provides general meaning outside of context (Bartolomé, 2012).

Discourse Impact on Teaching

Academic discourse has the power to transform educators' teaching and student learning. Academic discourse must be intentional, have a purpose, and develop empathy. Not all students

communicate and engage the same way. One key feature of properly implementing academic discourse is that scaffolding is in place to meet the needs of a diverse audience that does not share the same background knowledge or social setting (Bartolomé, 1998). Educators must take the time to teach academic discourse in a way that helps students learn about "ways of being in the world, ways of acting, thinking, interacting, valuing, believing, speaking and sometimes writing and reading connected to particular identities and social roles" (Bartolomé, 2012). This process was historically used among Black populations. Muhammad (2018) outlines that historically literacy learning standards focused on reading and writing and included identity development and criticality. Muhammad (2018) states:

> Literacy was the foundation for all learning, and when people learned to read, write, and speak proficiently, they were then able to accumulate knowledge in other areas and use these skills as tools to further shape and define their lives. (p. 138)

Educators must allow students to communicate and discuss their personal narratives, lived experiences, personal thoughts, and opinions. These types of discourse enable students the opportunities to learn about others, share ideas, influence others, get to know a wide range of views, experiences, worldviews, and ways of thinking, and learn about self (Zwiers & Crawford, 2011). In addition, student identities are constructed and reinforced in interaction with others; therefore, discourse has implications for how students see others and see themselves (Lefstein & Snell, 2011).

Many students rely on two separate languages: the language of the home and the language of school. As educators teach academic discourse, a focus must be placed on ensuring assumptions do not inform pedagogical practices (Bartolomé, 2012). A salient feature of academic discourse needs to be modified to meet the needs of a distant audience who may not

share common background knowledge or social settings (Bartolomé, 1998). Some students already know how to use academic discourse, while others have never been exposed to the process. Therefore, teachers must establish a process and norms for academic discourse that allow all students to be heard and valued during classroom conversations. Once teachers properly establish criteria and create gracious space for academic discourse, students will begin to listen to each other, build on each other's ideas and participate productively in complex deliberative practices (Michaels et al., 2008).

Discourse: An Intentional Practice

Building rich academic discourse opportunities in classrooms is an intentional practice. Creating discourse opportunities means moving away from educators who seek to develop classrooms that are a teacher-dominated I.R.E. (Initiation-Response-Evaluation) model (Lefstein & Snell, 2011). Instead, many academic dialogic models seek to replace the conventional I.R.E. model with more equitable structures, allowing discourse to be more evenly distributed among teachers and students. As the redistribution of discourse encourages student voices to be heard (Lefstein & Snell, 2011), this provides students with agency in the classroom. Lefstein and Snell (2011) outline five key dimensions to discourse that educators should consider when implementing academic discourse within the classroom setting. Table 3 outlines these key dimensions, critiques of traditional classroom practice, and examples of alternatives for properly implementing academic discourse.

In discussing adult learning and the andragogical processes as the teachers as the primary factors to facilitate academic discourse, I share insights on the vital role a principal has in adult learning. I discuss the importance of engaging educators in learning through learning

Table 3

Five Keys to Academic Discourse

Key Dimension	Critique of Traditional Practice	Academic Discourse Alternative
Structural Dimension: participants freely exchange ideas	• Educators recalling simple facts do not produce a deeper understanding. • Educators giving limited/short answers do not provide evidence of understanding. • Educators repeating student responses do not provide students with a strong voice. • Educators praising every student's answer does not clear up misconceptions or misunderstandings.	• Choose topics that challenge students cognitively. • Students should provide extended answers. • Expect students to speak for all to hear. • Ask students to explain their thinking when they give incorrect answers and resolve any misconceptions or misunderstandings.
Epistemic Dimension: critical stance toward knowledge	• Students focused on just one meaning do not allow for meaning-making. • Educators asking closed questions do not allow for a variety of opinions to be shared.	• Students and teachers take an active role in meaning-making. • Students are allowed to contribute perspectives, opinions, and ideas. • Educators focus on open-ended questions that are genuine inquiry.
Interpersonal Dimension: collaboration	• Individualistic communication does not allow for collaboration. • Individualist communication fosters classroom competitiveness. • Individualist communication establishes an impersonal classroom culture.	• Dialogue is a social relation that engages students. • Students freely articulate their ideas without embarrassment. • Classroom culture consists of mutual respect, trust, and concern. • Students help each other reach a common understanding.

Table 3 (continued)

Key Dimension	Critique of Traditional Practice	Academic Discourse Alternative
Substantive Dimension: discussion	• Educators leading students through I.R.E. cycles are often disjointed and do not build deep learning for students.	• Students and educators build on each other's ideas. • Accountable Talk framework is used to guide discourse toward discussions.
Political Dimension: foster student agency	• Classroom power aligned with only the educator inhibits students' opportunity for agency.	• Provide students with a voice in the conduct of the classroom environment. • Empower traditionally disenfranchised groups. • Provide students with the skills to live in a critical democracy.

communities. Specifically, I address that change in teaching practices starts with educators' willingness to engage in learning communities.

Adult Learning

Whoever teaches learns in the act of teaching, and whoever learns teaches in the act of learning. Freire (1998)

"Probably nothing within a school has more impact on students in terms of skills development, self-confidence, or classroom behavior than the personal and professional growth of teachers" (Barth & Guest, 1990, p. 49). The adult learning process is an essential aspect of educators properly implementing deeper learning, inquiry-based instruction, and academic discourse that fosters student agency. Educators' learning processes should support students to be curious, engaged, and autonomous learners (Riordan et al., 2019). The learning process for educators can no longer focus on just informational learning but should include transformational learning. Transformational learning focuses on developing the cognitive, emotional, interpersonal, and intrapersonal capacitates that help a person manage the complexities of work and life (Drago-Severson, 2009).

Talk the Talk and Walk the Walk: Leadership Moves

The principal occupies the central role of the head learner. As such, the school leader needs to engage in, display, and model the behaviors expected by teachers and students (Barth, 1990). Principals can create powerful learning environments by collaboratively developing a specific and granular vision of good instruction, the "north star" to which all decisions are oriented (Mehta & Fine, 2019). As principals collaborate to set the vision for good instruction, they "establish learning as the core of their practice and they set the tone, direction, and expectations for learning in the school" (Bredeson, 2000, p. 392). In addition, principals must engage staff members in the continuous process of learning, discovery, and growth (Terehoff,

2002). Principals need to understand andragogy (how adults learn; Knowles, 1970). Knowles (1970) outlines the andragogical process as:

1. The establishment of a climate conducive to adult learning;
2. The creation of an organizational structure for participative planning;
3. The diagnosis of needs for learning;
4. The formulation of directions of learning;
5. The development of a design of activities;
6. The operation of the activities;
7. The re-diagnosis of learning needs. (p. 59)

Using an andragogical process, principals can foster an environment that respects teachers as adult learners and yet provides space and guidance for teachers to incorporate their backgrounds and life experiences as well to increase their developmental growth (Terehoff, 2002). As principals facilitate staff learning, they should move staff toward greater independence and autonomy levels (Bredeson, 2000). As deeper learning literature suggests, adult learning must mirror what we want for students, and adults need parallel deep learning experiences themselves to understand the value of this kind of learning for students (Watkins et al., 2018). Facilitating a school culture of collaboration to examine instructional practices is the principal's responsibility (Drago-Severson, 2009). In schools, "where administrators empowered teachers and treated them as designers, teachers treated students as capable and thoughtful human beings" (Mehta & Fine, 2019, p. 376).

Change Begins with Us: Teacher Moves

Building capacity and supporting educators' development in schools requires mutuality, reciprocal learning, collaboration, and shared leadership (Drago-Severson, 2009). Effective

professional learning environments have a granular instructional vision and symmetry, which mirrors "the school's values in the design of leadership and adult learning" (Mehta & Fine, 2019, p. 375).

As educators build their capacity to teach, educational leaders must make efforts to allow educators to take ownership of planning and enacting their own deeper learning (Riordan et al., 2019). To accomplish the goal of educators taking ownership of their own learning, both relational and rich learning communities need to be created and supported in the school setting (Drago-Severson, 2009). Working in learning communities allows educators to discuss beliefs and ideas and make changes according to student needs. To facilitate effective ongoing changes in teaching, educators need to analyze the underlying assumptions and beliefs that give rise to their behaviors in the education setting (Kegan & Lahey, 2009). Understanding beliefs can help teachers as they engage in inquiry cycles in learning communities.

Collaborating in a learning community provides opportunities where educators can "examine and question their assumptions and beliefs about the ways they implement a school's core values in the curriculum and elsewhere" (Drago-Severson, 2009, p. 25). As educators work in learning communities, they can pose problems they are experiencing in their classroom setting (Riordan et al., 2019). In this setting, educators can develop strategies that allow them to gain deeper understanding of teaching and learning processes and begin to change how they think about students and their learning (Cook-Sather, 2020).

In learning communities, educators should use pedagogically productive talk that focuses on problems of practice, be involved in pedagogical reasoning, anchor conversations to rich representations of practice, share multiple perspectives, and provide support and feedback (Lefstein & Snell, 2011). During these learning community meetings, educators reflect on and

develop an understanding of the need to shift from teaching as transmission toward teaching as problem-posing (Mehta & Fine, 2019). In addition, educators should participate in school-level inquiry practices that question unproductive practices, interrupt instructional practices that produce dependent learners, and have courageous conversations that shift from deficit-focused discourse to asset-based discourse (Hammond, 2015). These are essential focuses if educators "are going to stand for deeper learning and teaching" (Mehta & Fine, 2019, p. 371).

Summary

The IECHS Instructional Framework focuses on implementing opportunities for students to think critically about real world problems and to use inquiry and academic discourse to find solutions. Establishing a school culture that empowers students to have a voice, be influential leaders, and be lifelong learners takes an intentional effort of all school stakeholders. The traditional school philosophy of covering content to teach to the test needs to be replaced by practices that foster deeper learning, inquiry, agency, and academic and personal growth. School leadership must teach, prepare, model, and grow educators to meet students' most essential needs. The goal of this project and study was to work with teachers to develop inquiry-based learning experiences that provide a rich learning environment for students.

CHAPTER 3: RESEARCH DESIGN

In the participatory action research (PAR) study, I examined how teachers design and implement inquiry-based learning experiences that foster student agency. The theory of action (ToA) for the PAR asserts: If teachers co-create inquiry-based learning experiences that support student agency, then staff will have the skills and knowledge to implement an inquiry-based pedagogy designed to cultivate student agency at Imagination Early College High School (IECHS). As a team, we engaged in a Pre-cycle and two cycles of inquiry that helped us better understand, reflect, and act on teaching and learning to better serve students at IECHS.

The context of the study was IECHS, a small, early college high school in eastern North Carolina, serving grades 9-13. The diverse student body included students from the following demographic backgrounds: 24% African American, 5% Asian/Pacific Islander, 28% Hispanic, 7% Multi-Racial (not Hispanic), and 35% White (not Hispanic). Additionally, 64% of students were first-generation college students, 67% were identified as economically disadvantaged, and 81% were identified as at-risk. IECHS is one of two early college high schools in the county that serve students from every attendance area.

Prior to this study, a six-member school improvement team developed the IECHS Instructional Framework during the 2018-2019 and 2019-2020 school years. The team designed the framework to serve as a guide for teachers as they implement inquiry, project-based learning, human-centered design thinking, and the Sustainable Development Goals in instruction. Through inquiry, we can help students analyze facts, develop and articulate personal opinions, and collaborate with empathy and compassion to solve important local, national, and global issues. This framework was only a starting point to help teachers see the need for inquiry in the

classroom setting. However, the PAR project and study better informed us about how to integrate inquiry into teaching practices.

In this chapter, I outline the methodology for the study. First, I discuss participatory action research, community learning exchange methodology and protocols, and action research cycles. Next, I provide an overview of the research design and methodology I used in the research and the methods for collecting and analyzing data. Finally, I outline the study considerations, including limitations, validity, confidentiality, and ethics.

Qualitative Research Process

The primary methodology for this qualitative research study was participatory action research (PAR). Qualitative research is an approach to understanding the meaning of complex social and human problems (Creswell & Creswell, 2018). In the PAR study, I sought to understand how teachers could use the IECHS framework to implement an inquiry-based pedagogy designed to cultivate student agency. I conducted the research at the school site, collected data directly from the participants, and observed them interact within this context (Creswell & Creswell, 2018). I used participatory action research methods to guide the investigation of the research questions for the study and action research cycles.

Participatory Action Research

I selected participatory action research (PAR) for this study because the research goal was to support teachers in using inquiry-based learning experiences to transform their teaching practices. Herr and Anderson (2015) state that action research is inquiry with insiders of an organization; in this case, I worked with a group of participants in the school to analyze inquiry-based practices in our school setting. These insiders were teachers and collaborators at IECHS. I choose to work with staff because they had a stake in the teaching and learning at the school.

During the research process, participation included implementation of inquiry lessons (Herr & Anderson, 2015). This level of participation included openness to experimental learning and flexibility in finding answers to points of concern (hunter et al., 2013). Several elements supported the participatory action research: improvement science (Bryk et al., 2015), activist research (hunter et al., 2013), community learning exchange axioms and protocols (Guajardo et al., 2016), and praxis (Freire, 1970). Next, I review improvement science used for the project, discuss activist PAR research, detail community learning exchanges, and outline the role of praxis in the study.

Improvement Science

During the research, I used the improvement science processes. The networked improvement community (NIC) structure (Bryk et al., 2015; Russell et al., 2017) was useful for the project, as "a NIC unites the conceptual and analytic discipline of improvement science with the power of networked communities to innovate and learn together" (Bryk et al., 2015, p. 7). In this PAR, I established a small group, similar to a NIC, to focus the research and engagement in plan, do, study, and act (PDSA) cycles (Russell et al., 2017). I called this group a co-practitioner research (CPR) group because in addition to being a network, the CPR group engaged with me as I conducted member checks (Gerdes & Conn, 2001; Plano Clarke et al., 2020). The CPR, like a NIC, co-designed how to integrate inquiry in daily instructional practices, thereby bringing the IECHS Instructional Framework to life. The process of working in a CPR group allowed for effective collaborative action on the focus of practice (Bryk et al., 2015).

As a CPR group, we engaged in a Pre-cycle and two improvement science cycles of inquiry (Pedaste et al., 2015). According to Militello et al. (2009), "taking action is an iterative and ongoing interaction of discovery and enactment" (p. 38). To accomplish this process, the

CPR team participated in an inquiry action research cycle, where the research informed each cycle of the research process. The activities in the Pre-cycle, PAR Cycle One, and PAR Cycle Two included establishing outcomes, identifying questions focused on student learning, taking action, reflecting on the process, and restarting the process (Militello et al., 2009).

Activist PAR

During the PAR study, staff at IECHS worked to transform teaching and learning for our students; thus, we engaged in a key tenet of activist PAR: a social change for the benefit of the people closest to the work. Activist PAR encourages participant voice, thereby providing teacher agency as participants "act in the framing and intervention practices" of the research (hunter et al., 2013, p. 26). By actively engaging in the study, participants analyzed the IECHS Instructional Framework, and designed and implemented inquiry lessons that consciously worked to foster student agency. I posit that the collaboration among teachers facilitated a transformation in teaching and learning and resulted in more equitable classroom learning. This transformation will directly affect teacher practice as they incorporate inquiry into their classrooms (Herr & Anderson, 2015).

Community Learning Exchange

I facilitated community learning exchanges (CLEs) during the PAR process to gain insightful thoughts and ideas about the PAR. Five axioms guide the CLE. Guajardo et al. (2016) state that "axioms frame the beginning of the work, and they also become evident through experiencing a CLE" (p. 29). The five axioms include:

1. Learning and leadership are a dynamic social process;
2. Conversations are critical and central pedagogical processes;

3. The people closest to the issues are best situated to discover answers to local concerns;
4. Crossing boundaries enriches the development and educational process; and
5. Hope and change are built on the assets and dreams of locals and their communities (Guajardo et al., 2016).

These axioms allowed for creative, shared, inquiry-based learning where participants found their voice to implement inquiry learning experiences in their classrooms.

During the CLEs, participants openly engaged in dialogue by using personal narratives, identifying common assets and challenges, and sharing thoughts and ideas about implementing positive change within the school (Guajardo et al., 2016). In a CLE, participants worked together to create a gracious space of open dialogue. Gracious space is a spirit and setting where relationships grow stronger through inviting the stranger and learning in public (Hughes & Grace, 2010). A gracious space is an environment, climate, and spirit inviting and safe for all participants (Guajardo et al., 2016). I used a variety of CLE protocols to help foster gracious space for open dialogue and collection of CLE artifacts that I coded and analyzed.

Role of Praxis

At IECHS, teachers used reflection to drive their actions. Praxis is the process of reflecting and acting to enact social change (Freire, 1970). According to Freire (1970), praxis is a deeper reflection that depends on generative dialogue of the persons who are engaged in the change. In the reflection process, we had deep conversations designed to lead to actions that transformed our teacher practices. This systematic form of praxis allowed participants to work together to make a difference and supports activist action research processes (hunter et al., 2013). During the PAR, participants thoroughly examined their education practices and carefully

addressed the focus of practice (Herr & Anderson, 2015). I documented reflections with artifacts produced through active pedagogy, memos, observation notes, coaching conversation interviews, and reflections.

Research Questions

The overarching question guiding this study is: How do teachers design and implement inquiry-based learning experiences to foster student agency? To answer this question and all sub-questions, I used PAR activities aligned to the following research questions:

1. To what extent do teachers collaborate to design learning experiences that embed inquiry-based instruction?
2. To what extent do teachers implement learning experiences that promote inquiry?
3. How does the process of collaborating with teachers affect my development as an instructional leader?

Action Research Cycles

"The inquiry-action process entails explicating what actions are taken, why, and to what effect–and then learning from and acting on that knowledge" (Militello et al., 2009, p. 28). In the PAR process, I undertook three cycles of inquiry with the participants: a Pre-cycle and two improvement cycles, PAR Cycle One and PAR Cycle Two. During the continuous cycle of inquiry, team members worked together to: (a) co-develop a vision for inquiry-based teaching and learning; (b) design and implement an inquiry-based coaching tool; (c) engage in a coaching conversation; and d) derive implications for changing their teaching practices (Cushman, 1999). Table 4 outlines the inquiry research cycle, data collection periods, and activities completed during the PAR process. The inquiry cycle enhanced distributed leadership throughout the school

Table 4

PAR Improvement Cycles

Research Cycle	Activities
PAR Pre-cycle October 8, 2021- November 18, 2021	• Meet and introduce team, set norms, discuss FoP • Conduct CLE to build trust and discover more about the current state of teaching at IECHS • Co-construct meaning of inquiry for IECHS • Analyze and determine appropriate inquiry-based attributes to utilize • Collect and analyze artifacts from meetings and observations • Conduct member checks • Write reflective memos
PAR Cycle One January 4, 2022- March 30, 2022	• Convene monthly meetings with CPR • Co-construct meaning of student agency • Co-construct IECHS Inquiry-Based Coaching Tool • Implement inquiry-based teaching practices • Collect and analyze artifacts from meetings and observations • Conduct member checks • Write reflective memos
PAR Cycle Two April 1, 2022- October 30, 2022	• Conduct observations using IECHS Inquiry-Based Coaching Tool and share data related to inquiry • Conduct coaching conversations using data from observation • Share with CPR team analyzed data, artifacts, evidence through coaching and feedback cycle • Collect and analyze artifacts from meetings and observations • Conduct member checks with participants

by supporting a small group of teachers to model inquiry-based learning experiences within their classrooms (Spillane & Coldren, 2011).

The three-cycle inquiry process aimed to engage teachers in praxis by enacting a theory of action, reflecting on the evidence, and revising action plans based on the findings (Bryk et al., 2015). In addition, we used evidence gained from each cycle to enact improvements in teaching and learning for inquiry-based instruction.

Participants, Data Collection, and Analysis

The design of the PAR study required participants to collaborate to enact change at IECHS (Creswell & Creswell, 2018). Therefore, I paid careful attention to the selection of participants for the study. In this section, I provide details regarding participants of the PAR, including specifics about the purposeful sampling of members. I also discuss the data collection and analysis process.

Participants

During the research for this project, there was one set of participants. All signed the adult informed consent form (see Appendix D). The participants were members of the co-practitioner researcher (CPR) team. This team of participants embarked on a focused learning journey (Bryk et al., 2015). As a group, we worked closely to generate a collaborative learning space, engaged in action and reflection (praxis), developed goals, and worked together to implement goals (Bryk et al., 2015). I collected and analyzed data from the CPR team and team meetings. Three of the participants in the CPR team are teachers who implemented inquiry-based strategies into their classrooms, and two are instructional coaches who support the teachers.

These participants participated in a Community Learning Exchanges (CLE). During the research, we used CLEs as a professional learning process because they "provide time and space

for everyday people to come together and join in deep and purposeful conversations" (Guajardo et al., 2016, p. 3). I asked participants of the CLE to share valuable insight regarding the operations and structure of IECHS.

Co-Practitioner Researchers (CPR)

I invited five IECHS staff to be co-practitioner researchers (CPR). The teacher participants I invited to the CPR are full-time teachers and instructional coaches who support teachers. Each member received information about the purpose of the study and agreed to be a co-participant researcher. The members signed consent forms approved by the East Carolina University Institutional Review Board (IRB). A copy of the Consent Form for CPR members is available in Appendix D.

I purposefully selected these participants to best help understand and address the research questions (Creswell & Creswell, 2018). Purposeful sampling allowed for the selection of participants who offer a great deal to the study and who would illuminate the questions under study (Patton, 2015). In addition, these teachers had an interest in and a growing understanding of the strategies and tools desired for usage to implement inquiry-based learning experiences to foster student agency.

To maintain a focus on improving student learning through inquiry-based learning, I selected CPR team members based on their understanding of inquiry and their willingness to implement inquiry into their classrooms. Another qualification for being part of the CPR team is that participants must have been willing to participate in action research, reflect on that research, and change their teaching practice. Co-practitioner research participants were willing to meet on a bimonthly basis, provide input, and be ready to reflect and act on their ideas regarding the IECHS Instructional Framework.

Data Collection

Participatory action research requires multiple sets of different types of qualitative data. These data informed the "specific processes targeted for change, intermediate outcomes directly linked to these processes, and other key markers on the pathway toward achieving the ultimate aim" (Bryk et al., 2015, p. 15). Therefore, I used qualitative data from CLE artifacts, observation of teaching practices at IECHS, interviews during coaching conversations, and documents to inform the PAR processes. Analysis of these data sources took place iteratively during inquiry cycles. In addition, I wrote reflective memos that served as triangulation data.

In this study, I used the iterative qualitative research data to inform the work of the CPR group. Qualitative research is designed to explore and understand how individuals ascribe meaning to social and human problems (Creswell & Creswell, 2018). This research process honors an inductive style, and focuses on an individual's meaning and the importance of reporting the complexity of a situation (Creswell & Creswell, 2018). I used multiple data sources during the PAR process, Table 5 presents the overarching question and sub-questions, the data sources, and how I triangulated the data source.

Community Learning Exchanges Artifacts

As part of the PAR process, the team used community learning exchange (CLE) practices and protocols. CLE produces deep, meaningful relationships that foster growth through lived experiences (Guajardo et al., 2016). Using CLE protocols, I hoped to create change in our staff and systems that shape our school community. The CLE aligned well with the mission and goal of IECHS, seeking to include staff, student, and parent voices as we develop the school's instructional framework. To promote authentic engagement in the CLE, I used dynamic pedagogies to support analysis and reflection, including circle conversations, appreciative

Table 5

Research Questions and Data Sources

Overarching Research Question: How do teachers design and implement inquiry-based learning experiences that foster student agency?

Research Question	Data Source	Triangulated With
To what extent do teachers collaborate to design learning experiences that embed inquiry-based instruction?	• CLE Artifacts • CPR Meeting Notes • Observations • Documents	Reflective Memos Member Checks
To what extent do teachers implement learning experiences that promote inquiry?	• CLE Artifacts • CPR Meeting Notes • Observations • Coaching Conversation Interview	Reflective Memos Member Checks
How does the process of collaborating with teachers affect my development as an instructional leader?	• Reflective Memos	Member Checks Interviews

listening, journey lines, and digital engagement (Guajardo et al., 2016). These artifacts helped me to collect data from the CPR team as we moved through the cycles of inquiry (see Appendix E).

Interviews

I collected interview data from the CPR team as we engaged in coaching conversations after the inquiry-based observations. Each interview session included reflection and open-ended questions to ensure the sharing of various ideas, views, thoughts, and opinions related to observational data. I used a protocol to guide the interview sessions (see Appendix F for Interview Protocol). I recorded and transcribed all interview sessions.

Observations

As part of the PAR activities, I conducted teacher observations in classrooms implementing inquiry-based tools and strategies. The focus of the observations was how teachers employed inquiry-based pedagogies. I used an Inquiry-based Coaching Tool the CPR team created to record specific strategies and inquiry attributes (see Appendix G for IECHS Inquiry-based Coaching Tool). The most specific measure used selective verbatim and coding using codes established after the first round of observations (Saldaña, 2016). After observations, the CPR team met individually with me to discuss the observation findings and participated in a coaching conversation.

Field Notes

After each observation, I conducted a post-observation coaching conversation. During the session, I asked open-ended questions to help teachers to reflect on their practices of inquiry-based instruction. Open-ended questions included topics such as how the teacher implemented practices that engaged students in inquiry, in what ways the IECHS instructional framework was

visible in teaching and learning, and what steps did the teacher take to plan the inquiry lesson. I collected the answers to these questions in field notes from the coaching session. Then I analyzed both the discussion and coaching note sessions by using open coding and creating categories (Saldaña, 2016).

Reflective Memos

During the PAR process, I wrote reflective memos. Reflective memos provided evidence to triangulate other data and in particular to answer the fourth research question about my leadership development. Reflective memos helped to clarify thinking, to articulate happenings during the research process, "to aid in the mapping of research activities, and helped facilitate the development of the study design" (Birks et al., 2008, p. 2).

Data Analysis

I analyzed collected data that iteratively informed the PAR process. During the multiple levels of research, I used these sequential steps for qualitative data analysis as described by Creswell and Creswell (2018):

- Organized and prepared for analysis.
- Coded by utilizing open coding and creating categories outlined by Saldaña (2016).
- Reviewed and analyzed to develop an overall meaning of the information.

Then I generated descriptions and themes created that emerged from the data. Finally, I made assertions based on data analysis and presented in qualitative narratives in Chapters 4, 5 and 6. To complete the data analysis, I used open coding cycles that supported analyzing the data in a systematic order and helped to consolidate meaning by utilizing categories (Saldaña, 2016). After the initial data analysis, I used two processes to support triangulating the data to

corroborate evidence of categories and themes (Creswell & Creswell, 2018). I examined reflective memos and member checks to ensure data coding accuracy (Plano Clark et al., 2020).

Throughout the PAR, I concurrently conducted data analysis and data collection. With the CPR team, I reviewed the analyzed data about the FoP. This allowed for specific and informative decisions throughout the PAR process. In addition, the triangulation of the artifacts helped build validity by establishing the convergence of several sources of data (Creswell & Creswell, 2018). I triangulated my reflective memos and members checks with the data collected from CLE artifacts, observations, coaching notes, and interviews. For example, I analyzed CLE artifacts such as journey lines and wrote reflective memos about the CLE. Then I examined both of these artifacts to build coherence of coding categories and themes (Creswell & Creswell, 2018). In the next section, I review the study limitations, internal and external validity, and confidentiality and ethical considerations.

Study Considerations: Limitations, Validity, Confidentiality, Ethics

During the study, I considered potential limitations. I discuss the internal and external validity of the study and review confidentiality and ethical considerations.

Study Limitations

The limitations of the quantitative study included the researcher's biases and ability to generalize the findings of the study. As the primary researcher for the PAR project, I brought my ideas to the study. I invited the CPR team participants who I purposefully selected, and whom could potentially affect the outcomes of the study. I ensured all participants gave informed consent without feeling pressured or having a sense of obligation; a CPR team member could decide to terminate consent for participation without penalty at any time. During the PAR cycles of inquiry, I may have had an influential role because I am the school administrator and had

positional power; therefore, I was intentional as I worked through the study to avoid the perception of using this positional influence. This study included a small group of participants and may only be applicable to similar settings; however, the process from this study may be generalized and the results may be helpful to other contexts.

I received approval from my district through a formal request to my superintendent (see Appendix C for Approval Letter). Further, I completed Institutional Review Board Collaborative Institution Training certification in January 2021 to comply with ethical requirements (see Appendix B for Citi Training Certificate). If needed, termination of this study could have occurred at any time, for any reason.

Validity

I checked for the accuracy by employing triangulation using reflective memos and member checks. The process of triangulation helped me determine whether the findings were accurate from my standpoint as the researcher and from the viewpoints of the participants (Creswell & Creswell, 2018).

Internal Validity

There may be concern over data collection, data analysis, and coding. As I analyzed, interpreted, made meaning, and coded data (Creswell & Creswell, 2018), I shared the analysis with the CPR team. In addition, I triangulated primary data sources such as coaching session interviews, teacher observations, and CPR meeting notes with reflective memos and member checks to strengthen reliability. Multiple sources and iterative coding of the data confirmed the findings (Guba & Lincoln, 1982). Finally, to further ensure internal validity, I engaged the CPR team in discussions about categories in the Pre-cycle, emerging themes in PAR Cycle One, the identified themes in PAR Cycle Two, and the findings. I conducted member checks during each

PAR cycle of inquiry to ensure valid data. The member checks are similar to focus groups, which "are a recognized way of exploring the opinions, beliefs, and attitudes of a group of people and of enabling people to respond and interact together" (Birt et al., 2016, p. 1805). I asked members to comment on the analyzed data to determine if my analysis reflected their experience, and members provided further comments or insights (Birt et al., 2016).

External Validity

IECHS is part of the North Carolina Cooperative Innovative High School (CIHS) Network. The intent of this study is not to generalize findings to other settings outside of IECHS (Creswell & Creswell, 2018); however, other educational leaders may find value and replicate the process for collecting and analyzing data. This study may provide methodologies that other CIHS can use to task theory to action in the service of teachers using inquiry practices for teaching. However, specific outcomes may not be generalized to other contexts.

Confidentiality and Ethical Considerations

I carefully selected participants in this study because of their commitment to the students at IECHS (Patton, 2015). Before beginning research, I met with each CPR team member to discuss the project and ask for participation. Participants were required to sign a consent form approved by East Carolina University's Institutional Review Board (ECU IRB). Each participant signed a consent form and I informed him or her that participation is voluntary, and they could request to terminate participation at any time (see Appendix D for the Consent Form). Security of the data and confidentiality was a priority for the study. Therefore, I stored all important papers and data files in a locked file cabinet as well as password protected all electronic forms of data collected.

This study focused on how teachers designed and implemented inquiry-based learning

experiences to foster student agency. While I conducted classroom observations, no students were participants in the study, and all participants were protected through the utilization of pseudonyms.

Conclusion

In this chapter, I outlined the research design and methodology of the PAR study to answer how teachers design and implement inquiry-based learning experiences that foster student agency. In the PAR research, I engaged a CPR team in a Pre-cycle and two cycles of inquiry by enacting a theory of action, collecting and analyzing evidence, reflecting on the evidence, and revising action plans based on the iterative analysis (Bryk et al., 2015). This process helped the team determine the next steps. I addressed potential limitations, validity, and ethical considerations as well as the process of ensuring confidentiality during the study. In Chapter 4, I focus on the Pre-cycle and context of the first part of the inquiry cycle.

CHAPTER 4: PAR PRE-CYCLE

This participatory action research focuses on generating a dynamic space to solicit member's thoughts and ideas around developing and implementing inquiry-based learning experiences. The co-practitioner research (CPR) group members reflected, learned, and worked together to create inquiry-based learning experiences, thereby strengthening the IECHS Instructional Framework. In this chapter, I provide details about the context of IECHS and the CPR team members. First, I outline the processes used to engage the CPR team. Then, I describe the process for gathering data, coding, and setting up my codebook. Next, I explore the emergence of categories from the Pre-cycle data coding and how the evidence supports these categories. Then, I reflect on my learning and leading as I engaged in the PAR with the CPR team. Finally, I explain how the data findings from the Pre-cycle informed my plan for the next inquiry cycle.

PAR Context

The context of place and people for this study aligns perfectly to implement change. IECHS is a newer school with staff members who are willing and able to make changes that are in the best interest of students. With the appropriate facilitation of the PAR study, changes can be made to the IECHS Instructional Framework.

Place

IECHS is a small rural Early College High School in eastern North Carolina, located on the campus of a larger partner university. Enrollment to the school is application-based and the school accepts students from all over the county. The U.S. Census Bureau (2019) indicates that county demographics consist of 36% African American, 7% Hispanic, 2% Multi-Racial (not Hispanic), and 54% White (not Hispanic). In addition, the number of adults twenty-five years or

older with a bachelor's degree or higher is 33%, the mean household income is $47,437, and over 19% of the county population lives in poverty (U.S. Census Bureau, 2019). The IECHS student body is representative of the county demographics, with 24% African American, 5% Asian/Pacific Islander, 28% Hispanic, 7% Multi-Racial (not Hispanic), and 35% White (not Hispanic). Additionally, 65% of students are first-generation college students, 59% are economically disadvantaged, and 81% of students have at-risk factors. Some at-risk factors present at IECHS include single-parent homes, divorced parents, parents with low income, parents lacking formal education, incarcerated parents, foster care placement, childcare provider for siblings in the home, a home language other than English, food insecurity, mental health issues, disabilities, and low self-esteem.

The school opened in 2018 and graduated the first class of seniors in May 2022. The 2022-2023 school year enrollment is 210 students. Students at IECHS take honors high school and college courses as part of a cohort in the Butler Building during their freshmen and sophomore years. During the junior year, students begin taking college courses independently on the partner university campus. Students have the opportunity to obtain up to 60 college level credit hours from the university.

The work for the PAR study began during the 2021-2022 school year. In 2021 the school entered its fourth year of operation. Although the school had been open for three years, the fourth year felt almost brand new because the United States was coming out of the COVID-19 pandemic and the IECHS staff and students embarked on collaborating to create new senior traditions. This particular senior group was unique because the students played a very active role in helping to develop the school. The 2022 senior class designed the school colors, logo, mission statement, motto, mascot, school traditions, and provided input on teaching practices. In addition,

during the 2021-2022 school year, the staff and students collaborated to create traditions for future senior classes that will graduate from IECHS. These traditions included prom, the senior cap and gown, the graduation ceremony program, and senior activities. Allowing the senior class to participate in creating these traditions upholds the mission of IECHS, which include providing students with the opportunity to have a voice and leave a legacy at IECHS.

People

I purposefully selected five team members to serve on the CPR team based on their understanding of inquiry, willingness to implement a pedagogy based on inquiry, and willingness to participate in action research. The five-team members consist of three teachers and two instructional support teachers. In addition, the team consists of one English Language Arts teacher, a Math teacher, a Social Studies teacher, an Instructional Coach, and a Project Based Learning and Community Coordinator.

The first step in the PAR Pre-cycle was to gather the CPR team members to introduce the team, set norms, and discuss the Focus of Practice (FoP). During the first CPR meeting, team members read each other's "I Am From" poem and reflected on the similarities and differences between each poem and how the information connected to their personal life experiences. The reflection process allowed members to understand each team member, their history, and the life experiences each member brought to the CPR team. Information from each member's poem is included in the following biographies.

The IECHS instructional coach (IC) has been in this role since January 2019. She was raised in a small rural community by parents who focused on hard work and making something out of nothing. As a teacher, she felt pressured to teach to the test even though she knew students would benefit from an inquiry-based approach. She understands the process for bringing inquiry

into the classroom but was never truly able to implement the practice. She joined the team intending to work with the staff to develop and enhance the IECHS instructional framework. Since joining the IECHS team, the IC has worked diligently to build relational trust with staff as a coach. As a result, she has gained all staff members' respect and helped them grow their teaching practices. She has an equity focus and consistently uses this focus to help teachers implement culturally responsive practices in their classrooms. In 2020, she applied and received acceptance into the second cohort of Project I⁴. During her time with Project I⁴, she further developed her equity focus. She models equitable strategies and practices in professional development, professional learning communities (PLC), and teaching coaching sessions.

The Project-Based Learning (PBL) and Community Coach is one of the six founding members of the IECHS staff. She grew up in a middle-class neighborhood focused on family, spiritual growth, and good grades. She came to IECHS from northern Virginia, where she taught Advanced Placement Human Geography. Her skill set in Human Geography brought a unique perspective to the school as the first Social Studies teacher. Her ideas were instrumental during the School Improvement Teams (SIT) selection of the human-centered design-thinking model for the IECHS instructional framework. As a result, she brought a new and fresh perspective that other staff members valued. In addition, she believed in sustainability and was excited when the IECHS team decided to use the 17 Sustainable Development Goals (SDGs) as part of the instructional framework. From 2018 to 2021, in her social studies classroom, she integrated the SDGs, social justice, service-learning projects, and facilitated an inquiry-based learning environment for her students. In the 2021-2022 school year, she took on the new role of Project-Based Learning (PBL) and Community Coach. In this role, she coached other teachers through implementing PBL, the SDGs, and an inquiry-based classroom environment.

The first teacher participant is an English teacher at IECHS and has been with the school since August 2020. He came from an unassuming church-going home that consistently handed down stories. He is a ninth-year teacher and comes from a family of educators. His father was a teacher who furthered his education and became a well-known principal in the county. He came to IECHS from Carrboro, North Carolina, serving as an Advanced Placement Literature and Language Composition teacher. While at Carrboro High School, he was on the equity team for four years and sought various ways to implement social justice into his curriculum. He operates from a constructivist approach to teaching and desires to create opportunities for students to construct knowledge and see themselves as the active creators of meaning, not passive recipients of knowledge.

The second teacher joined the IECHS team for the 2021-2022 school year as a Social Studies teacher. He is from a church-going, farming community that pinched pennies and believed in hard work. In his twelve years as an educator, he has also had the roles of Social Studies teacher, Assistant Principal, and Instructional Coach. His nine years of previous experience at Duplin Early College gave him a deep knowledge of the North Carolina Cooperative Innovative High School model, which is the school model that IECHS follows. In addition, he is well versed in the North Carolina New School Principles that early colleges implemented in North Carolina during 2017-2019. These principles guided North Carolina Cooperative Innovative High Schools in developing strategies to ensure all students had opportunities for individualized support, inquiry, self-development, and a rigorous curriculum. He had been away from the early college setting for three years but longed to return. He brings a vast repertoire of instructional strategies and tools to allow his students to engage in critical thinking and real-world opportunities.

The third teacher member, a math teacher, joined IECHS in the 2021-2022 school year. She has a solid connection to her compassionate and church-going family from the coast of North Carolina. She has taught for fifteen years and has experience with middle and high school math content. She believes all students can succeed in math and must believe in themselves to succeed in the content area. She works hard to build students' confidence in their math abilities through inquiry. She enjoys working with other content areas to integrate cross-curricular activities with math. She is flexible and willing to learn new processes and procedures to engage students in math.

The willingness of the CPR team members to collaborate to bring the IECHS Instructional Framework to life made for a strong team. The structure of the team allowed members to learn from staff members in various departments at IECHS. The PAR Pre-cycle process allowed the team to begin learning from each other and building a community within the team. Next, I outline the CPR team's activities during the PAR Pre-cycle. I then discuss the process I utilized to code artifacts and evidence and conclude with an analysis of themes that began to emerge from coding.

PAR Pre-Cycle Process

The PAR Pre-cycle took place from October to December 2021 and included various activities to develop relational trust, gauge members' knowledge of inquiry, and develop a shared understanding of inquiry. I used different protocols during the Pre-cycle process to solicit each member's thoughts and ideas on inquiry. In addition, I structured each CPR meeting using constructivist elements to ensure critical thinking, collaboration, and dialogue on inquiry. Further, I wrote reflective memos and met with my Project I⁴ coach to reflect on the Pre-cycle.

The Pre-cycle consisted of two CPR team meetings and one CLE meeting. Next, I provide a detailed account of the activities and data collected during the CPR team meeting and CLE.

Activities

The Pre-cycle (September-November 2021) included artifact collection from two co-practitioner researcher (CPR) meetings and one community learning exchange (CLE). I used multiple protocols during the CPR and CLE meetings to support team members in sharing deep thoughts and opinions regarding inquiry-based teaching and learning. In addition, I selected protocols to ensure team members had opportunities to experience inquiry and see a model of how protocols can facilitate inquiry.

CPR Meetings

In late September 2021, I met with each member of the CPR team to review information regarding participation in the PAR study. I provided them with informed consent to participate in the study form. The CPR team met three times between October and December. I structured each meeting to contain dynamic mindfulness, personal narratives, opening and closing circles, and various protocols. Table 6 provides an overview of the PAR Pre-cycle dates and artifacts collected.

I designed the Pre-cycle's first CPR team meeting on October 8, 2021, to build relational trust among CPR team members. Team members have worked together during the school year. However, I had not devoted intentional time to having staff genuinely learn about one another. During this meeting, the team participated in a gallery walk to read and review each team member's I Am From poems and then reflected on the similarities and differences within the group. Next, we created working agreements for the CPR meetings. Finally, I reviewed the

Table 6

PAR Pre-Cycle Process and Collected Artifacts

PAR Pre-Cycle Date	Format	Artifacts
October 8, 2021	CPR Meeting	I Am from Poem
November 5, 2021	CPR Meeting	Journey Line of Personal Experience of Inquiry Personal Narrative of Journey Line Personal Narrative Share Out
November 18, 2021	CLE Meeting	Chalk Talk Personal Narrative Carousel Brainstorm: What is Inquiry Gallery Walk: What Does Inquiry Look Like Whip Around: Inquiry Elevator Speech

informed consent form with the team and answered all member questions about the PAR study process.

In the second CPR team meeting, November 5, 2021, I focused on establishing a baseline of each team member's knowledge regarding inquiry. First, I had team members complete journey lines and personal narratives to collect this data. Next, I asked team members to consider the following questions and then chart their experience with learning through inquiry from childhood until now:

1. How were you exposed to inquiry as a learner?
2. How have your inquiry experiences shaped your identity as an educator?

After each member charted their journey line, they discussed one important event. Next, I asked members to write and share a personal narrative answering the two questions from the journey line. The share-out was a rich discussion that yielded significant insight into each member's experiences with inquiry. Finally, I asked team members to reflect on the meeting activities and share one final thought regarding inquiry. At the end of the meeting, I conducted a member check by displaying notes from the session on the monitor and asked the team to review the notes for accuracy.

CLE Meeting

The CPR team chose to meet for a two-hour CLE on November 18, 2021. I used the CLE format to spend time diving deeper into the meaning of inquiry. I picked the CLE format because it allowed for the modeling of inquiry-based teaching and learning, where participants found their voice as they discovered ways to implement inquiry-learning experiences. During the CLE, team members participated in dynamic mindfulness, personal narratives, carousel brainstorming, a gallery walk, a whip around, and a closing circle. Table 7 outlines the five CLE axioms that

Table 7

Community Learning Exchange (CLE) Axioms

Axiom Number	Axiom Description
1	Learning and leadership are dynamic social processes.
2	Conversations are critical and central pedagogical processes.
3	The people closest to the issues are best situated to discover answers to local concerns.
4	Crossing boundaries enriches development and the educational processes.
5	Hopes and change are built on assets and dreams of locals and their communities.

guided the work of the meeting as the team engaged in protocols that allowed for rich data collection (Guajardo et al., 2016).

Using the axioms as a guide allowed for the CLE meeting to have a comfortable and collaborative environment. Setting the environment up this way was important because I wanted to generate uninhibited thoughts and ideas around inquiry.

During the first part of the CLE, members went to two different charts around the room to record their thoughts on inquiry questions. The first chart asked members to think about what makes students learning active versus passive in their classroom. The second chart asked team members to think about what active learning looks like. Members quietly recorded their thoughts on the chart paper for the two questions. After each member recorded their ideas, the team worked together to record the themes that emerged from the charts. I chose to conduct this activity at the beginning of the PAR process because I was interested in seeing the team members' level of understanding of inquiry as a pedagogical practice.

Next, I split the team into two groups to engage in a carousel brainstorming about inquiry. Then, the groups rotated around the room, read, discussed, and annotated four statements about inquiry from external research. During the rotations, teams commented on the annotations of other groups and the statements from the external research. The posted sections of research were guided by Chapter 2 of this dissertation. During the annotation process, teams used symbols to record the following:

1. What they agreed with from the research statements,
2. What needs more clarification from each research statement,
3. What made the team members think deeper about the subject, and
4. What stood out the most from the research statements?

I chose this activity because it was essential to give the team a basic understanding of inquiry. I used the research from Chapter 2 of my dissertation because I wanted the team to understand inquiry through various resources in the same way I developed an understanding of inquiry. In addition, I felt it was important for the team to co-collaborate to understand inquiry and begin to develop a common language for inquiry.

Next, members analyzed what inquiry looks like through a gallery walk protocol. I gave each CPR member a copy of the Inquiry Teaching and Learning Rubric from the Project I⁴ Framework (Tredway et al., 2018) and asked them to list the student and teacher attributes of inquiry on colored sticky notes. Team members spent some individual time reviewing and making notes on the rubric. Then they divided into two teams with three team members each. In these small groups, the teams discussed the rubric and analyzed the attributes of students engaging in inquiry and the attributes of teachers teaching inquiry. Members took part in a gallery walk after the team completed their posters. This activity yielded a large amount of data.

At the end of the CLE, each member had to create a thirty-second elevator speech to share their understanding of learning about inquiry during the meeting. Finally, I asked all members to write a note of gratitude for at least one person from the CLE for the closing circle.

I use the artifacts from the CPR and CLE meetings as data for the coding process. Next, I discuss the coding process I used to analyze data from the artifacts. During the analysis process, I developed emerging categories.

Coding

To understand what took place throughout the PAR Pre-cycle, I analyzed several forms of data. In addition, I wrote several reflective memos, which served as reflections and reminders from the meetings. The reflective memos allowed me to connect what I was learning through

research and coursework to my experiences in the PAR Pre-cycle. I utilized reflective memos to help me make meaning from each of the PAR Pre-cycle meetings.

I collected multiple artifacts from each CPR meeting as evidence, including journey lines, personal narratives, and personal summaries. For example, during the CLE, I collected personal narrative chalk talk posters, annotations on inquiry, inquiry gallery walk charts, and member-written elevator speeches. Figure 5 is an example of two artifacts from a CPR meeting I used to collect data.

I also gathered agendas and all documents from the meetings. I used all the collected artifacts and coded the data using Saldana's (2016) open coding. I met with my Project I⁴ coach to review my codes and make adjustments. During the coding process, I checked codes to see if I needed to adjust some codes due to them having similar meanings. After changing the codes, I started a codebook in Excel to collect a list of codes, frequencies, and categories (see Appendix H).

As I analyzed the data and noticed similar codes emerging, I placed them in the codebook. I created a column for code frequency and counted every time a code emerged from the data. After recording the data in the codebook, I analyzed the data to make meaning from the codes. I discussed the codes and codebook with my Project I⁴ coach, and we adjusted some codes to better connect to the artifacts meaning. After we analyzed the codes, we discussed possible emerging categories. The emerging categories centered on inquiry, active pedagogy, and understanding student agency. I placed these categories into the codebook. In the next section, I discuss the codes and emerging categories. I then present my codebook in the next section.

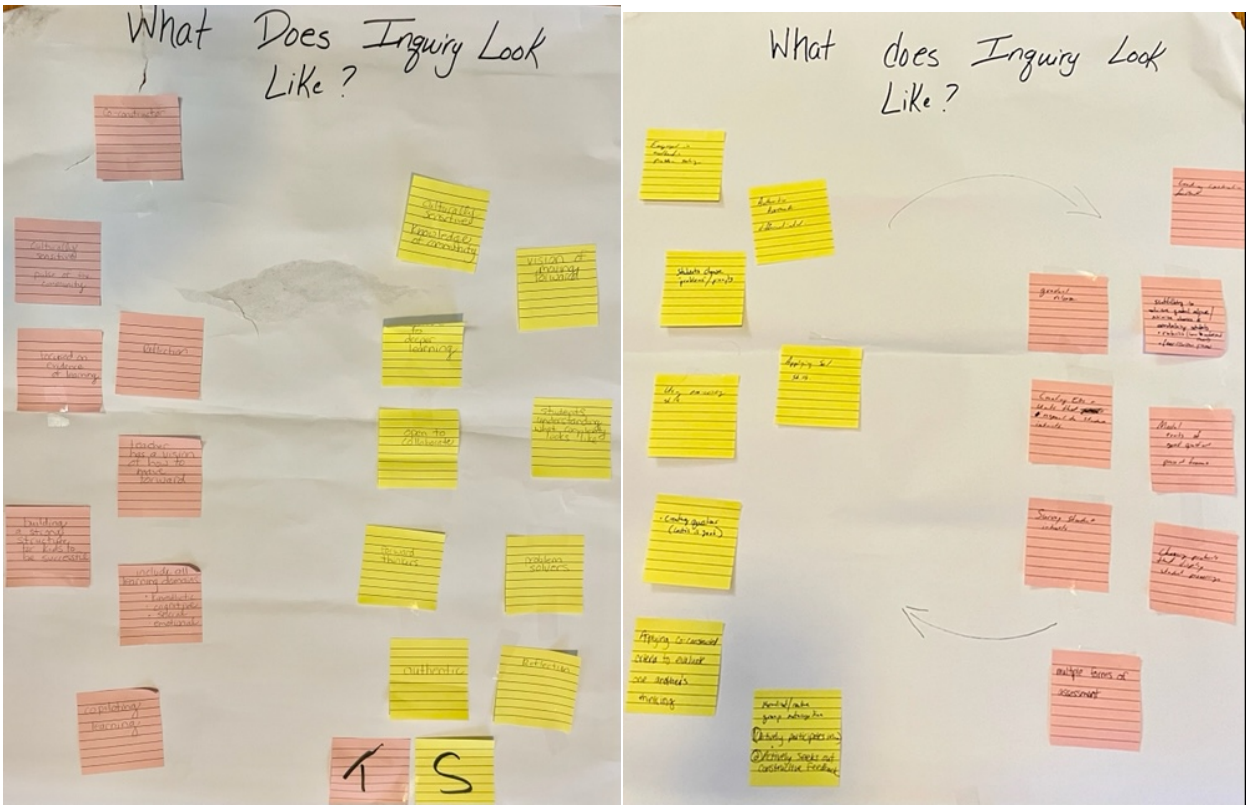


Figure 5. Inquiry gallery walk charts.

Emergent Categories

I facilitated two CPR meetings and one CLE to understand what inquiry-based teaching and learning meant to the CPR team members. During the meetings, team members were open to explaining their current understanding and eager to learn more about inquiry. In addition, several "ah-ha" moments during our sessions prompted team members to dig deep into gaining an understanding of inquiry. Initial data from journey lines, personal narratives, brainstorming charts, and gallery walk charts indicated conditions for inquiry, strategies for inquiry, and developing student agency are essential aspects of implementing inquiry-based learning experiences within a classroom. However, while these categories are essential, my initial analysis of the codes led to the creation of emerging categories that were too broad.

Conditions for Inquiry

As the CPR team met to discuss their current understanding of inquiry and developed a new understanding, the team's knowledge of several critical aspects of inquiry became apparent. The participants' understanding helped the team as we collaborated to answer the overarching PAR question: How do teachers design and implement inquiry-based learning experiences that foster student agency? During the first two CPR team meetings, I hoped that team members would understand why inquiry is important to implement in the classroom. During our CPR team meeting, members shared their knowledge of inquiry by creating an inquiry journey line. This activity allowed members to reflect on their experiences with inquiry from childhood to the current moment. Many members shared that inquiry included authenticity, active learning, metacognition, and academic discourse, as well as being student-centered and co-constructed with students. Two team members shared that they knew about inquiry but questioned why they were not currently implementing it in their classrooms. In his narrative, one CPR member stated,

"Why am I not doing that with my kids? Why am I not giving them authentic problems that they care about?" Another member shared, "I don't want my kids to be bored like I was. Why am I not doing things for my kids that would make their experience more than what mine was?" These statements point to members developing an understanding that inquiry is essential in the classroom and appears to represent a call to action. Team members know they need to do things differently from the teachers that taught them, but they are unsure how to change.

After asking members to think about their inquiry journey, I wanted them to develop a strong collective understanding of inquiry. To move the team forward toward implementing learning experiences that promote inquiry, all members must have a firm grasp of what inquiry means and can look like. At the CLE meeting, members collaborated to understand inquiry better and develop a list of attributes teachers and students would display if they embedded inquiry in the classroom. The CLE evidence indicated that top strategies for implementing conditions for inquiry include academic discourse, problem-solving and high-level questioning, and teacher praxis. CPR team members mentioned these three areas the most during the CPR and CLE meetings (n=20).

Academic discourse appeared the most, with eleven out of thirty-eight (55% of instances) during the CPR and CLE meetings (see Figure 6). However, team members did not directly name academic discourse but instead shared various ideas that captured the tenets of academic discourse. These tenants included using sentence starters, structured academic talk, tier three vocabulary, chatter, group discussions, and creating questions. For example, during the CLE, one team member shared, "Students should be building on one another's ideas, challenging claims, helping one another find quotes, or how to structure their ideas. " This quote captures many other member's ideas about how to embed academic discourse in inquiry. The quote also shows the

CATEGORY	CODE	CPR Meeting	CLE	Memos	Total
Conditions for Inquiry	Academic Discourse	1	11	3	15
	Discovery		2		2
	Questioning		5		5
	Deeper Learning		1		2
	Application of Learning		1		2
	Research	3			3
	Inquiry	2			2
	Authentic Learning	1	1		2
	SEL		1		1
	Praxis	1	3		4

Figure 6. Code frequencies for emerging theme: Condition for Inquiry.

importance of allowing students to make meaning of what they are learning through academic discourse (Bartolomé, 2012). A second insight regarding academic discourse was that the noise level in a classroom implementing inquiry is louder, messier, and more chaotic than in traditional classrooms. Therefore, team members felt there should be a different structure in a school implementing inquiry versus a conventional school. As we moved forward, the team continued to outline various strategies that embed and foster academic discourse within the classroom.

Secondly, the strategy of questioning arose in CPR meetings and the CLE five times (25% of instances). There were various ideas around questions and not one specific way to use questions within the classroom. Some ideas centered on the questions teachers ask, students asking each other questions, a good essential question, structured questions, modeling of questions, and students creating questions. One team member referenced using Costas Level of Questioning as a tool for inquiry. Another member shared, "In inquiry-based learning, teachers begin by providing driving questions that are authentic and relevant for students." The evidence suggests that more conversation will need to occur within the subsequent cycles to ensure the team can adequately outline how to use questioning as a tool for inquiry.

Finally, teacher praxis came up as evidence four times (20% of instances). The team focused on the importance of teachers knowing how and when to move forward in a lesson. During the CPR and CLE meetings, team members used words like reflection, setting a vision, self-questioning teaching style, and teacher change over time. There was also evidence that students should reflect during the learning process, informing their future progress. The team felt that the teacher and the students should reflect and adjust the teaching and learning process. This evidence indicates that members understand the importance of reflection and action as part of the learning experience.

Strategies for Inquiry

An active classroom environment through active pedagogy was a high-discussed area during the CPR meetings and CLE. I coded fifteen different codes from the evidence for the emerging category of strategies for inquiry (see Figure 7). The team felt strongly about the inquiry-based learning experience being active. During conversations, members shared that the traditional "sit and get" teaching model cannot exist within an inquiry-based learning model. Collaboration was the first key data from the evidence, with a frequency of twelve (26% of instances). Team members mention collaboration as being between teacher and student and student-to-student collaboration. There was mention of co-constructors of knowledge throughout the CLE, as team members felt that the teacher and students should both have ownership in creating an inquiry-based classroom. Members felt that students should also be co-constructors with other students through think-pair-share, group work, small groups, group discussions, and actively questioning others in the classroom setting. As the team moves forward in the PAR cycles, careful analysis will need to take place to outline various structures that facilitate collaboration within the classroom environment.

Secondly, active learning was a focus during the CPR meetings and CLE. This code arose from the data seven times, making up 15% of the coding instances for this emerging category. For example, during the November 5, 2021 CPR meeting, team members shared that active learning made their learning journey the most exciting. One member shared, "It has been a lot of sit and get, but I was happiest at points in my life when I was at the top level of inquiry, when I was not bored." Other members shared that being involved in learning and not subjected to a test prep curriculum was when they found school most interesting. Other mentions of active learning indicate the importance of using protocols, project-based learning models, and presentations. As

CATEGORY	CODE	CPR Meeting	CLE	Memos	Total
Strategies for Inquiry	Social Learning		3		3
	Classroom Climate		2		2
	Kinesthetic Learning		4		4
	Collaboration		10	2	12
	Facilitation of Learning		3		3
	Protocols		4		4
	Active Learning	3	4		7
	Writing		1		1
	Evidence of Learning		4		4
	Learning Styles		1		1
	Modeling		1		1
	Data Informed Practices		2		2
	Gradual Release		1		1
	Background Knowledge		1		1
	Community Focus		1		1

Figure 7. Code frequencies for emerging theme: Strategies for Inquiry.

well as getting students out of their seats and providing times for organized chaos. Lastly, a final top focus area for active pedagogy that arose from data was the utilization of protocols. Of the top three codes, this code occurred in 9% of instances for this emerging category. The CPR team believes structure is essential and can be implemented without sacrificing the integrity of an inquiry-based learning environment. By providing structure, students can have freedom in the learning process (Dewey, 1963).

During the CLE, members presented that collaboration and the utilization of academic discourse can be effectively structured by using protocols. Protocols can garner conversations that all students can participate in because they provide the structure to ensure equity and engagement. In addition, students can have opportunities to lead the learning. One member stated that by using protocols, students should collaboratively find and discover meaning in the content.

Student Agency

The final category emerging from the evidence was student agency. This emerging category had the least number of codes, with a frequency of twenty (19% of instances) compared to the other two emerging categories: conditions for inquiry and strategies for inquiry (see Figure 8). The CPR team understood student agency but had not fully connected the idea that inquiry can foster student agency. They knew learners should take an active role in their learning (Jääskelä et al., 2020). During the CLE, members discussed student creation and students co-constructing knowledge. Student creation appeared once in the CPR meetings and four times during the CLE. These combine for 25% of instances for codes in this category. A focus during the CLE was on students creating their ideas, questions, prompts, and connections. In one of the CPR team members' CLE summary statements, he shared, "The end goal is for students to become lifelong learners who possess skills that can solve problems in the community and the

CATEGORY	CODE	CPR Meeting	CLE	Memos	Total
Student Agency	Students Co-Constructing	3	1		4
	Student Voice		1	2	3
	Student Choice		2		2
	Student Creation	1	4		5
	Goal Setting		1		1
	Student Leadership		1		1
	Metacognition	1	2	1	4

Figure 8. Code frequencies for emerging theme: Student Agency.

world." This statement indicates the team member understands that inquiry should lead to students having agency in their own lives and using that agency to leave the world better than they found it. I hoped the team would discuss student agency more during the CLE. However, the low number of codes for student agency indicated that the CPR team needed more information about agency and how educators can help foster student agency.

The three emerging categories are a starting point in this PAR study's data collection and coding process. Team members understand that classroom conditions must be suitable for inquiry to thrive. Also, they believe that teaching strategies can be used to facilitate inquiry in a classroom. Finally, the team understands that student agency is essential. I need to collect more data to understand if and how these concepts impact the implementation of inquiry-based learning experiences that foster student agency.

Reflections and Planning

I designed the Pre-cycle to uncover what CPR members understood about inquiry-based teaching and learning. My goal was for the team to collaborate to develop their understanding instead of pushing my knowledge onto the group. In addition, I hoped to model inquiry so the team could fully experience what inquiry could look like within the classroom. During the Pre-cycle, I reflected on my leadership style and adjusted activities based on the CPR team's needs. Next, I provide a detailed reflection on my leadership and how the Pre-cycle informed planning for PAR Cycle One.

Reflections of Leadership

As I reflected on my leadership during the Pre-cycle, my efforts to model inquiry with the CPR team were effective. I made an effort to use a variety of protocols that facilitated open discussion and the generation of ideas. As a result, team members generated ideas about their

teaching without fear of repercussions. Although the flow of sharing ideas was swift and unconfined, I realized that I wish I had included more opportunities for conversations around student agency. The team understood what inquiry looks like in a classroom, but some team members failed to connect the why behind implementing inquiry in the classroom. In the next cycle, I need to solidify the connection between inquiry and student agency.

Each CPR meeting and the CLE had a positive energy and allowed members to provide insight and input into each activity. I chose to use a variety of protocols to enable team members to have a safe, trusting space to share their thoughts and ideas. The journey line, personal narrative, gallery walk, and thirty-second elevator speech provided valuable evidence for the Pre-cycle. These activities allowed members to dig deep into what they already knew about inquiry and their journeys and allowed for new learning regarding teacher and student attributes of inquiry. The team moved forward in their thinking about inquiry as they worked from personal experiences to examining a collective idea about implementing inquiry within the classroom.

Protocols were an excellent way to allow all member voices to be heard and valued in the meetings. I chose a variety of protocols. Some were done in silence, while others were collaborative and involved discussion. A goal for using the protocols was to use gracious space to promote the free flow of ideas and thoughts around inquiry. I wanted the information shared during the protocols to lead the group to the next step as they investigated inquiry. The annotation of inquiry research protocol helped members complete the "what inquiry looks like" gallery walk. Members used the research and Project I⁴ rubric information to generate teacher and student inquiry attributes. The conversation during this protocol was rich and developed a wide span of ideas on what implementing inquiry within the classroom could look like.

However, as I reflected on the coding process, I realize this is an area in which I needed more practice. Many artifacts I collected from the CPR meeting and CLE contained broad data points. The short board responses made coding more difficult because the data points were already specific and, therefore, in vivo codes. Nevertheless, I did try to code these artifacts and, through the process, lost the specificity of the data because I used too broad codes.

After coding these artifacts, I met with my Project I⁴ coach and Project I⁴ director to review the coding. During this meeting, I came to understand how I could improve the data collection and coding. In the meeting, I reflected on coding, reviewed all of the artifacts from each meeting of the Pre-cycle, and found several other artifacts I could code. I was able to dive deeper into coding by coding the CPR team member's journey line personal narrative, elevator speeches from the CLE, and my reflective memos. Coding this time seemed more straightforward, and I could generate a flow in the coding responses. After I coded the artifacts, I worked with the Project I⁴ coach to create groups of codes and emerging categories. I then created an updated codebook with the new codes and emerging categories.

The development of the emerging categories appeared to be too broad and needed to narrow as I moved forward in the PAR cycle. While conditions for inquiry, strategies for inquiry, and student agency are essential for inquiry, these categories need to be more specific. The study focused on how teachers design and implement inquiry-based learning experiences that foster student agency. I need more detailed information to understand how teachers design inquiry lessons and how they turn around and implement them.

Planning for PAR Cycle One

As I reflected on what I learned from the Pre-cycle and planned for PAR Cycle One, I realized I needed to focus on helping the team understand student agency. The data indicated

student agency had few occurrences. However, team members did not highly discuss or mention student agency during the CPR meetings or the CLE. At the time, I was unsure if team members fully understood student agency or if they did not realize inquiry could facilitate student agency. I note the CPR team must clearly understand student agency to address the FoP of teachers designing and implementing inquiry-based learning experiences that foster student agency.

My goal was to continue utilizing protocols and allowing team members to investigate student agency the same way they did inquiry. From there, I planned to have the team generate a working definition for inquiry as we see it at IECHS. This definition of inquiry will guide the CPR team's work during the rest of the PAR process. The definition of inquiry would be a guiding light and understanding student agency would be our why.

As the team built a definition of inquiry that matches the vision of IECHS, keeping the IECHS instructional framework in mind was essential. I needed members to reference this framework and use it as we built inquiry at IECHS. During the subsequent PAR cycles, I wanted to ensure the team engaged in activities that generated data points that were detailed and specific.

Conclusion

The CPR team will develop inquiry-based learning experiences that foster student agency. First, we will create and finalize an inquiry definition that embeds the IECHS instructional framework. After we construct the definition, the team will collaborate to develop a coaching tool that appropriately captures the implementation of inquiry in the classroom. It will be important that the coaching tool captures teacher and student inquiry attributes. After the tool is complete, team members will begin implementing inquiry-based learning experiences within their classrooms and I will conduct observational walk-throughs. The tool will allow members to participate in a coaching session after the observation. The CPR team will then analyze the

findings from the coaching tool and decide the next steps for moving forward to ensure teachers are effectively implementing inquiry-based learning experiences at IECHS.

CHAPTER 5: PAR CYCLE ONE

In PAR Cycle One, the CPR team and I built on the Pre-cycle work to further develop inquiry-based learning experiences to foster student agency at IECHS. The CPR team continued to deepen relational trust among its members as I collected evidence and we collectively built tools to support the project's overall goals. During the PAR Pre-cycle, the co-practitioner research (CPR) team worked together to develop a common meaning of inquiry. In the Pre-cycle meetings, we co-constructed meaning about inquiry and established a common language for discussing inquiry. In the PAR process of participatory action research, we focused on the co-practitioner research team's understanding of how student agency connects to inquiry. Using this focus, team members developed a deeper understanding how inquiry-based learning experiences connect to agency in students' lives.

As a result of our collective understanding, in PAR Cycle One, CPR members collaborated to create a method for how IECHS could implement inquiry-based learning experiences. During the process, team members had an open dialogue, reflected on essential teacher and student attributes of inquiry, and collectively designed a tool focused on capturing inquiry-based classroom learning experiences. Using this process, teachers calibrated their understanding of the inquiry-based coaching tool and shifted their teaching practices. I was hopeful that the CPR team could use the tool to facilitate teachers' use of, reflection about, and growth in inquiry-based teaching practices.

I collected and analyzed data during CPR meetings (n=3). I sorted these data into categories and then developed two emerging themes. In this chapter, first I provide the context to the types of meetings and artifacts I collected. I discuss the process used for each CPR meeting and the methods for collecting data from these meetings. Then, I outline two emerging themes

from the PAR Cycle One data, the first being *teacher shifts toward inquiry-based instruction* and the second is *conditions for inquiry-based learning*. Finally, I reflect on how my leadership and skills as a practitioner-researcher have grown through completing PAR Cycle One and share how PAR Cycle One evidence informed PAR Cycle Two.

PAR Cycle One Process

PAR Cycle One (January-March 2022) included artifact collection from three co-practitioner researcher (CPR) meetings, one community learning exchange (CLE), and three reflective memos. I used multiple protocols during the CPR and CLE meetings to support team members in sharing thoughts and opinions regarding inquiry-based learning. I selected protocols to ensure team members had opportunities to experience inquiry and see a model of how protocols can facilitate inquiry. As a result of using specific protocols, I collected meaningful data (see Table 8). The fourteen artifacts provided multiple data sources that I coded and sorted into categories and emerging themes. During the process, I met with the Project I⁴ coach to reflect on the data and the methods for developing categories and emerging themes.

The CPR team was interested in creating a coaching tool as "coaching" is a familiar term for them, and they were clear about not confusing the tool we designed with the observation and evaluation process. Because that term was familiar to the teachers, we referred to the tool as the IECHS Inquiry Coaching Tool. I was aware that inquiry-based teaching observations require more time because the observation should include all steps of an inquiry lesson: problem posing, student investigation, and hypothesis building. The classroom should include many attributes the team co-designed for the tool, which provided a framework for further discussion of inquiry-based teaching. In this chapter discussion, I refer to that tool as the IECHS Inquiry Coaching Tool (see Appendix G).

Table 8

Activities in PAR Cycle One

Activities	CPR Meeting 1/7/22	CPR Meeting 2/11/22	CLE Meeting 2/22/22	CPR Meeting 3/16/22
Elevator Speech (n=1)	●			
Personal Narratives (n=3)		●	●	●
Closing Circle (n=3)		●	●	●
Observation Tool Design (n=4)	●	●	●	●
Reflective Memo (n=3)	●	●	●	

All CPR members were present at every meeting and provided useful information. All meetings began with dynamic mindfulness, which helped create an environment where we modeled self-care. Each team member offered written statements during each session and submitted them to me as an artifact. For example, during the January 7, 2022 meeting, team members wrote an elevator speech that captured their thoughts about the connection between inquiry-based learning experiences and student agency. I set up each CPR meeting so team members could provide insight into their learning and the process used during the meetings. In addition, I structured each session to immerse team members in inquiry. As I detail the activities in the CPR and CLE meetings, I identify the useful protocols.

CPR Meetings

During the January 7 CPR meeting, I began the meeting with a personal narrative in which members listed and then shared examples of using inquiry in their personal lives. Next, members read a section of the literature review on student agency. Then, each member read and highlighted ideas of interest. Afterwards, they shared the traits and behaviors of student agency and how those related to inquiry. Finally, CPR members reflected on their previous inquiry elevator speech from the Pre-cycle and included new learning about student agency.

As part of the second meeting, held on February 11, team members described and shared a journal entry to explain how they currently implement inquiry-based learning in their classrooms. Next, two small groups examined a variety of observation tool examples. In groups, members discussed the tool format, attributes, and decided which attributes they found helpful. Next, the small groups reviewed the inquiry-based teacher and student attributes information from the Pre-cycle. Finally, one group reviewed teacher attributes of inquiry-based learning, and the other group decided to check student attributes of inquiry-based learning. During the review,

groups began discussing and creating a list of "look fors" associated with the attributes they wanted to include in the IECHS tool. Finally, team members participated in a closing circle.

In the next meeting on February 22, members wrote and shared personal narratives describing their experiences with walkthroughs and observations. Then in small groups, they reviewed and added to the teacher and student attributes for inquiry-based learning. Next, the team held a whole group discussion about the setup of the IECHS Inquiry Coaching Tool. Members discussed various ideas and then created a draft mockup of the tool. Finally, the team participated in a closing circle by creating and sharing a Tweet that represented what they expected from the journey and how the process so far made them feel.

On March 16, at the final meeting, team members reflected on a quote about inquiry from Freire and revised the IECHS Inquiry Coaching Tool. Next, the small groups worked collaboratively to assign behaviors to the teacher and student attributes. Finally, members shared their thoughts about working together to create the tool in a closing circle.

CPR Meeting Codes and Categories

All four team meetings yielded data that I coded, sorted into categories, and analyzed for emerging themes. I looked for trends and patterns that helped answer the study's overarching question: How do teachers design and implement inquiry-based learning experiences that foster student agency?

First, I identified keywords and phrases and categorized standard codes using a codebook (see Appendix H). Each artifact had codes that evolved into categories. Then, once categories were established, I analyzed them to uncover trends in developing emerging themes. The two emergent themes from data analysis in PAR Cycle One were *teacher shifts toward inquiry-based instruction* and *conditions for inquiry-based learning*.

I analyzed key categories for the first emergent theme of shifts toward inquiry-based instruction that included teacher agency, collaboration and co-construction of knowledge, and data and evidence drive growth. The second emergent theme, conditions for inquiry-based learning, resulted from the analysis of the key categories of student agency, authentic learning, and utilizing student culture and narratives. I represent the emerging theme and categories in Figure 9.

As teachers design and implement inquiry-based learning experiences that foster student agency, they derive direction from the evidence. The overarching conditions necessary for inquiry are apparent in the emergent themes, and the systems that help bring the themes to life. The codes and categories I analyzed to develop the emergent themes pointed to the importance of a systems approach to appropriately implementing inquiry-based learning experiences. One CPR team member summarized the CPR team's understanding of inquiry-based learning by stating:

> Our primary takeaways include that inquiry-based learning (IBL) for students means that their interests, lives, and capabilities are centered in the classroom, that the texts they engage with are used as a means for students to create, question, discuss, debate, and appreciate; IBL is constructivist, so students co-construct the questions and responses, and use the skills of the specific domains to create new texts or solutions to student-generated questions. For teachers, IBL demands inventorying student interests and prior skills and knowledge, creating good EQs, and it requires flexibility with units to respond to and challenge students.

By a systems approach, the CPR members mean that they needed common understandings of inquiry as a teaching method and common tools and processes.

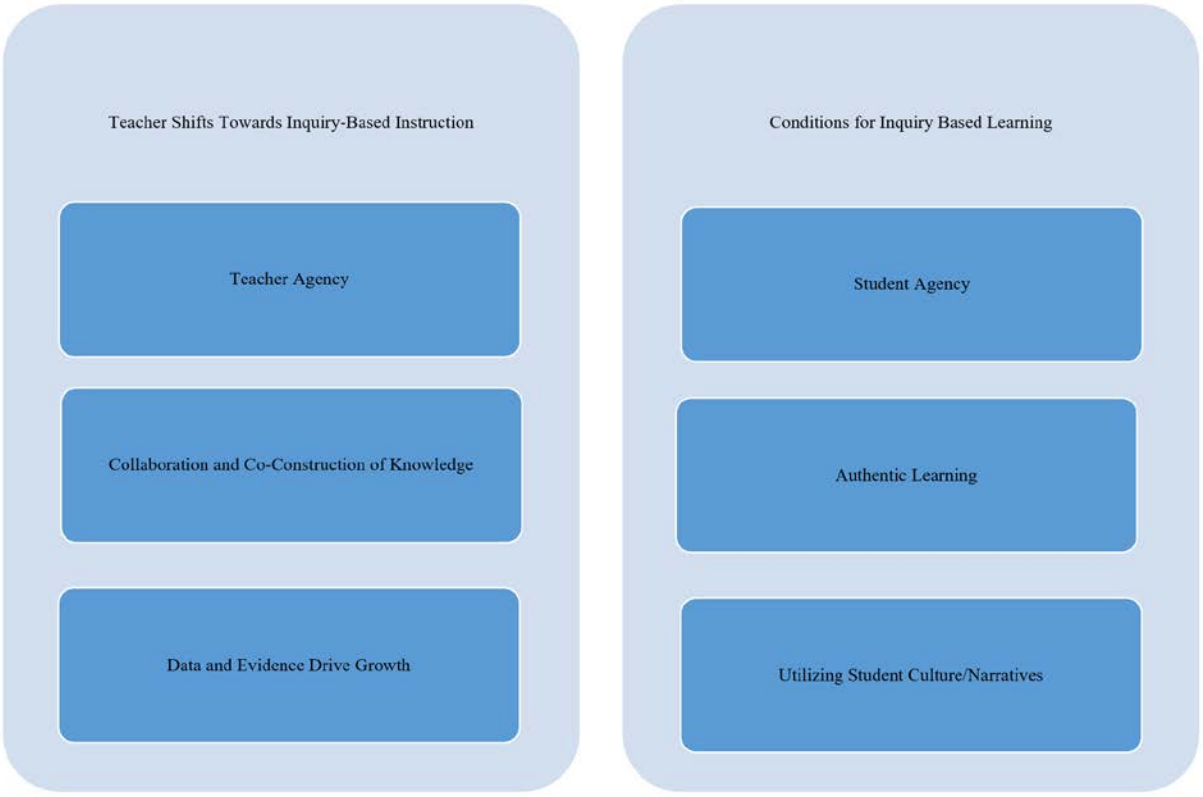


Figure 9. Emerging themes and categories.

IECHS Inquiry Coaching Tool

During each meeting, CPR team members engaged in dialogue about key elements of student and teacher attributes that inquiry-based learning experiences should require. As teachers had this dialogue, they grew in their capacity to articulate inquiry-based learning experiences. For example, team member number two stated, "I noticed that I did not possess the same common language as everyone else, which slowed me down. I had to do outside research." This statement indicates his willingness to be vulnerable, grow, and engage in research to expand his understanding of inquiry-based teaching and learning.

As teachers gained confidence in their understanding of inquiry, they formulated an essential list of teacher and student attributes demonstrating inquiry in the classroom. Then the team placed these attributes into the IECHS Inquiry Coaching Tool (see Appendix G). The tool includes a section for collecting data using selective verbatim; these data provide evidence of inquiry. In the second section of the tool the observer can check all attributes of inquiry that were present during the observation and then list the specific evidence that aligns with the attributes. In the last section of the tool, the observer and observed person reflect on the data. The team hopes the tool will support teachers to see what is happening in their classrooms and have reflective conversations after the walkthrough. As team member two stated, "I then want to spend time with the observer afterward so that they can unpack the data they collected. At this point, I don't want solutions; I want the ability to reflect." The coding indicated team members felt a sense of accomplishment, advancement, empowerment, reflection, excitement, and appreciation as they collaborated to develop the coaching tool.

Establishing and Promoting Inquiry-Based Learning Experiences

I developed two emergent themes based on the data analysis of codes and categories in PAR Cycle One. The two themes point to climate elements the CPR team determined were necessary to promote inquiry-based learning: (1) teacher shifts toward inquiry-based instruction, and (2) conditions for inquiry-based learning. I represent the emerging themes, categories for the themes, and the overall frequency of categories for each theme in Table 9. Then, I describe each emergent theme and outline the categories and codes I analyzed to generate the themes and share specific details from team members that helped shape the emerging themes.

Teacher Shifts Toward Inquiry-Based Instruction

Teachers shifted toward inquiry-based instruction by experiencing teacher agency, collaboration and co-construction of knowledge, and utilizing data and evidence to drive growth. Figure 10 illustrates the theme, categories, and codes. In the past, some team members relied on teacher-guided instruction; however, since being part of the CPR team, they have adjusted teaching and learning within the classroom. For example, team member two stated, "My inquiry-based learning experiences are heavily teacher-guided, but there are some major changes. For example, I am now using the content to provide students with structures like agency in developing rubrics, opportunities for trying, failing, revising, and real-life examples."

Teacher Agency

As the principal, my responsibility is to encourage teacher agency to try new teaching practices and embed inquiry in their instructional practices. Based on the data, teacher agency emerged as an essential component for developing inquiry-based learning experiences in the classroom. The category of teacher agency (52 instances or 62% of the data) to support the theme of teachers shifting to inquiry-based instruction during PAR Cycle One.

Table 9

Emerging Themes and Categories

Emerging Themes	Categories	Frequency of Categories
Teacher shifts toward inquiry-based instruction (n=84)	Teacher Agency	(n= 52 /62%)
	Collaboration and Co-construction of Knowledge	(n= 25 /30%)
	Data and Evidence of Growth	(n= 7 /8%)
Conditions for inquiry-based learning (n=48)	Student Agency	(n= 24 /50%)
	Authentic Learning	(n= 15 /31%)
	Utilize Student Culture and Narratives	(n= 9 /19%)

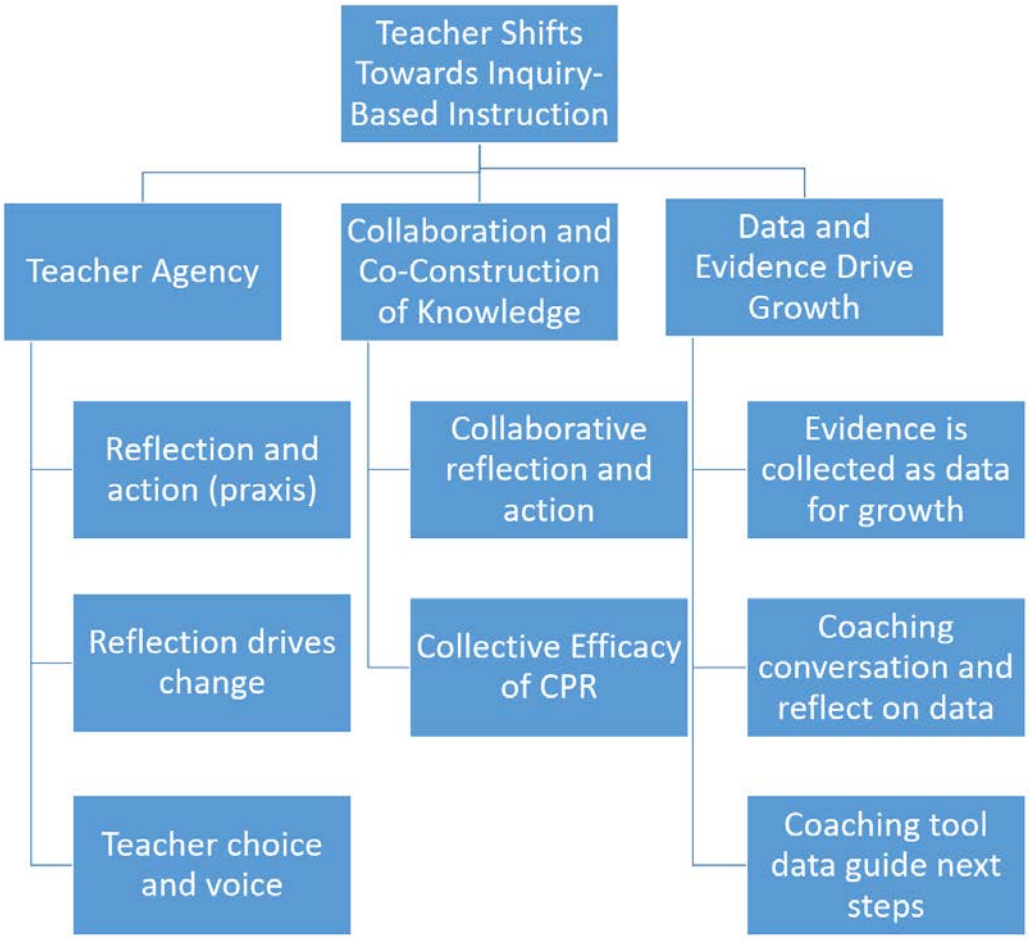


Figure 10. Emerging theme: Teacher shifts toward inquiry-based instruction.

The CPR team agreed that teaching practices are more likely to shift when teachers feel empowered to experiment with new approaches and techniques. Team member five shared, "Humans have a thirst for knowledge, and it can emerge through invention and re-invention. Teachers must try different methods that create a better understanding of the world around them." As teachers learned new methods, this member's comments reflected a common perception of teachers–they tried different approaches and discussed how they were working until they developed learning environments that better matched the needs of their students. As the CPR team engaged in inquiry during the CPR meetings and CLE, they reflected on their current teaching practices. The process of reflection bolstered the team to build confidence and share what they observed about gaps in their understanding and abilities to describe and create inquiry-based lessons. This level of reflection and flexibility resulted in increased teacher agency in shaping lessons.

The CPR team discussed the concept of reflection as a means for making shifts in teaching practice. As members wrote personal narratives and closing journals during the CPR meetings and CLE, they referenced the importance of intentional reflection and how reflection drives change, the heart of what Freire (1970) terms praxis. Members reflected individually and collectively and shared that they experienced growth by seeing and reflecting on how others value and use inquiry. "The feeling of the journey is reflective. It makes me feel like we are moving forward to have our instructional model make big moves," was the sentiment of team member three during the CLE meeting.

Participants shared that they felt refreshed as teachers because I was clear and consistent about modeling an inquiry-based approach and including teacher voices during PAR Cycle One to build the IECHS Inquiry Coaching Tool. Team members used words like excitement,

reflection, invigoration, empowerment, and a feeling of advancement. In addition, members developed a sense of pride because of their choices; they worked together to create something new, the exact experience that we promote for students in inquiry-based instruction. Through the process, teachers had experiences that mirrored what a classroom should look like and they developed agency in developing the tool; therefore, they felt empowered to experiment with inquiry in their classroom.

Collaboration and Co-Construction of Knowledge

Teachers need to personally experience inquiry-based learning in a safe environment to fully embrace inquiry within their classroom. In the past, some team members felt the "fear of [the] lesson not aligning to the norm of teaching." Instead of adopting inquiry teaching, new teachers tended to mirror veteran teaching styles as the norm for their instruction. Shifting from traditional modes of teaching to inquiry-based teaching requires support during the change process. This support should include creating a safe environment where teachers can collaborate and co-construct knowledge; in this environment, they can explore inquiry through immersion in the inquiry process. As I coded data from artifacts, I collected twenty-five instances (30% of the data) that I categorized as collaborating and co-constructing knowledge.

The team shared that the collaborative structures and processes used to develop an understanding of inquiry-based learning and co-creating the tool were powerful. I provided team members multiple opportunities to co-construct knowledge throughout the CPR and CLE meetings. I used at least three collaborative and equity-focused protocols during each session. I selected or designed protocols to solicit team members' thoughts, ideas, and opinions, thus providing each member with a voice. Throughout the process, team members supported each other and used coaching conversations as they developed an understanding of inquiry-based

learning. Team members accepted others' ideas, and discussed, built upon, and utilized these ideas to create a deep and collective understanding of inquiry-based learning. A culture of open dialogue, creating and discussing deep driving questions, and seeking clarity on points of confusion allowed the team to build a safe space. Team member three stated that they were "appreciative of creating something they believe in with other professionals."

As the CPR team worked together, they became aware of the collective efficacy of team members. Team member two shared during the March 16, 2022, CPR meeting:

> I realized that the people I am working with have a wealth of academic knowledge that they were able to bring to the table. On top of that, there were skills that team members possessed that contributed to the overall success of the group.

The collective team opinion about the process of collaborating and co-constructing knowledge was that the process was helpful and valuable. Members shared that valuing different opinions and others' expressions of expertise is essential.

Implementing new practices is sustainable when we empower the people we work with. Providing teachers with agency is a means of empowerment. Through praxis, reflection to drive change, and providing teachers with voice and choice changes that positively impact students can occur.

Data and Evidence Drive Growth

Team members discussed which evidence and data were most helpful to move their instruction forward and guide them in their next growth steps. During the meetings, team members mentioned this category only seven instances (8% of data), but the conversations were deep and impactful. This category had significance for moving the PAR project forward because utilizing evidence during coaching conversations is essential. The CPR team shared that for

teachers to make shifts in teaching practices, they need data and evidence. Therefore, evidence is a key component of the IECHS Inquiry Coaching Tool.

Not only are the evidence and data necessary for growth but reflecting on the data was equally important. Team members shared that they desired observational information they can reflect on with someone else. CPR members wanted to use the coaching tool to have reflective conversations to review the data after their observations and to collaborate with a peer observer to learn about positives and areas of improvement. The consensus from the team was that intentional reflection on one area of improvement at a time would facilitate change in teaching practices. The members shared a desire to learn and grow but implementing too many changes at once can become overwhelming and ineffective. Members wanted to reflect on their area of improvement with the observer, and they wanted the observer to provide resources that could drive change for the area of improvement.

As a result of the first two meetings in PAR Cycle One, the team felt it was essential to develop a tool to help teachers collect evidence, discuss evidence with the observer, and reflect on the evidence to grow their teaching practice as they attempted to embed inquiry in their classroom. This discussion resulted in the CPR team collaborating and co-constructing the IECHS Inquiry Coaching Tool (see Appendix G). As team members developed the coaching tool, they decided a key usage of the tool should be to collect evidence in order for them to drive growth in teaching. During the CLE meeting, members shared they respond best to specific evidence used as data for development. These data helped them be more open to "blind spots." During the meetings in PAR Cycle One, a member shared that teachers are more likely to shift their instruction as they are provided with specific observational data, evidence, and reflective questions that drive coaching conversations.

The CPR team felt teachers could make adjustments best when given specific evidence to guide the reflective conversation of growth. They reported they wanted to collaborate in a safe environment where open dialogue to make meaning of newly learned information is the norm of teacher development. Members desired the use of specific evidence from the tool during the reflective conversation. Both the observer and the observed would discuss these data. They felt it was important that both members had a common understanding of inquiry and the key attributes of inquiry-based learning experiences. These actions could ensure data and evidence drive teacher growth. During the February 11, 2022, CPR meeting, one small group shared their feelings regarding how many walkthroughs seem to be more evaluative than reflective; "…we want to avoid evaluative language. We think teachers respond to specific look-fors, evidence, and third-point data. Abstract interpretations or evaluations can also hurt the relational capacity."

Being intentional in implementing conditions and experiences to facilitate teacher shifts in teaching practices is essential. Providing opportunities for data collection through a coaching tool, analysis of data from a coaching tool, and opportunities for deep conversations around the collected data help to move teachers forward in their growth toward implementing new teaching practices.

Conditions for Inquiry-Based Learning

For inquiry-based learning experiences to take root in a classroom, the CPR team felt that an inquiry classroom culture was the foundation of creating the conditions for inquiry-based learning. Team members stated the classroom culture should be positive, encourage student efforts, and allow feedback, reflection, and revisions. Members shared a classroom culture that includes student agency, authentic learning, and student cultures and personal narratives should be drivers of inquiry-based learning experiences. The teacher's role is to implement these

conditions to provide a setting where inquiry-based learning will flourish. Figure 11 illustrates the connection between this theme, categories, and codes.

Student Agency

Team members believe student agency is highly connected to inquiry-based learning and part of inquiry-based classroom culture. Student agency was mentioned in twenty-four instances (50%) throughout all artifacts in PAR Cycle One. Team members listed these key "self" skills as related to student agency: self-organization, self-efficacy, self-regulation, and self-reflection. Because they had experienced these in the CPR group, they had more confidence in their ability to orient students to the skills. Team members made critical points about teaching student agency traits to students. These traits included the importance of reflection and feedback, student voice and choice, and student goal setting.

The student reflection and feedback cycle is continuous throughout the school year. This cycle connects to asset language and a growth mindset. For example, as students reflected on learning, "setbacks do not stop the learning process;" setbacks can help guide the learning process. Team members felt teachers should help students see their mistakes, reflect on them, and make plans to move forward based on the feedback from the error. This process of reflection and feedback can help students move past mistakes. Establishing this condition will help to facilitate a growth mindset. Team members agreed reflection and feedback needed to be in place for inquiry-based learning that fostered student agency to flourish. Since this was an area of importance, the CPR team wanted to embed in the IECHS Inquiry Coaching Tool various attributes that attempt to capture the reflection and feedback cycle. Some of the specific attributes are:

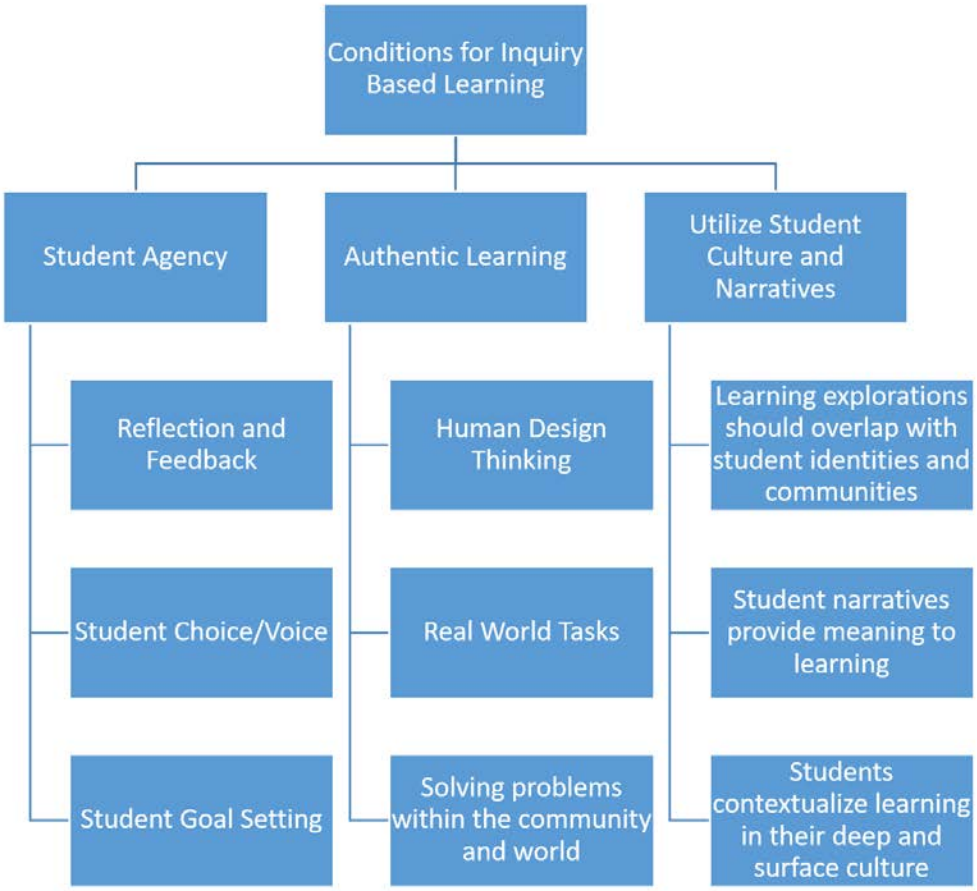


Figure 11. Emerging theme: Conditions for inquiry-based learning.

- Providing student opportunities to receive feedback about their work and learning
- Encouraging student self-assessment and self-correction
- Coaching students in their thinking, reasoning, and responses to feedback
- Coaching students to use feedback to make changes to their work (Innovation Early College High School, 2022).

The power of student agency is in providing students with a voice and choice in their learning. Team member three shared that agency can be fostered by "allowing students to give input and choice into the direction of learning." Providing students with ownership of their learning through the development of driving questions, development of rubrics, design and management of learning teams, and the formulation of their own opinions are ways team members feel student voice and choice are achieved in the classroom (Jääskelä et al., 2020; Zeiser et al., 2018).

Four CPR team members mentioned goal setting as an essential part of student agency during the CPR and CLE meetings. Goal setting allows students to keep their learning focused and visible. Members expressed students should be able to set both personal and academic goals. As students set goals, they must identify available resources to help them reach their goals. Team members expressed students should track written goals, and teachers should discuss the goals with students to ensure students are on the right path to reach their personal and academic goals.

A focus on student agency results in students owning their learning and becoming self-directed. Embedding various opportunities for students to have agency over their learning increases inquiry within the classroom. As teachers provide students with reflection and feedback, opportunities for voice, choice, and goal setting will increase students' agency.

Authentic Learning

In every meeting held in PAR Cycle One, participants used words like authentic audience, real-life application, real-world tasks, human-centered design thinking, and student leadership to describe authentic learning. Codes for this category were human design thinking, real-world tasks, and solving problems within the community and world. The category of authentic learning appeared fifteen times (31% of data for this emerging theme).

Team members connected that authentic inquiry-based learning involves real-world experiences, examples, and tasks. For instance, during the February CPR meeting, team member five stated she recently used engaging real-world examples and fostered critical thinking and real-world applications by aligning the Math content to tsunamis and their potential impact on the United States. As indicated by team members, the co-construction of knowledge using real-world problems is a valuable component of inquiry-based learning. As students inquire and solve problems about the world around them, empathy and compassion became a focus for learning. Human design thinking provides students the opportunity to practice empathy and compassion. One team member shared that belief in human capacity is essential and that bridging content with real-world application answers many basic human needs.

CPR members said real-world experiences would be most beneficial if linked to the local community. The team agreed on the importance of remembering the voices of the people who will use the outcomes of class projects and assignments. During the meetings, team members discussed the importance of using community members as authentic audiences for students to highlight their learning. The team felt the voices of the local community matter and exposure to these voices can be influencing student learning. Team members agreed that student-learning experiences could and should influence the world through connection with the local community.

Utilizing Student Culture/Narratives

The final category from the data was establishing a classroom culture that utilizes student culture and narratives (*n*=7, 18% of data for the emerging theme). Teachers can use student culture and narratives by overlapping learning with student identities and communities, encouraging student narratives to provide meaning, and having students contextualize their learning in both their deep and surface cultures. Students want to see themselves in their learning. The CPR team believes learning experiences should overlap with student identities because this is an authentic way for learning to be relevant. The learning process becomes more meaningful by blending learning and student cultures.

Team members shared that integrating personal narratives into lessons gave students meaning making in learning. As a CPR team member stated during the January 7 CPR meeting:

> Our goal is that learning explorations always bleed into the identities and communities of the students because that is the only way they can truly be accurate or meaningful. As our staff book study suggests, we are not filling empty pails. Those narratives provide meaning to complex skills and concepts in service to both academic and overarching personal questions. Without context, we will never surpass a state of ambiguity or approximation in answering those questions.

Connections to personal narratives provide students with the opportunity to make learning personal and relevant. The team felt as students see themselves in the learning process, they work toward being lifelong learners that desire to solve problems with the community and world.

The notion of students contextualizing learning in their deep and surface cultures is critical to inquiry learning. While this did not emerge in the data as a critical point for teachers,

during team conversations about utilizing student culture and narratives, I determined that it was essential for the study. As the lead researcher, I noted a sighting that provided a necessary observation that I needed to further examine (McDonald, 1996). Members discussed the importance of students understanding the difference between different types of culture and how culture can influence learning. I needed to collect more data to understand how student culture can affect learning in an inquiry-based classroom setting. As I moved forward with PAR Cycle Two, I planned to explore this concept further with the CPR team.

A classroom culture that embeds student agency, authentic learning, and student cultures and personal narratives help to provide opportunities for inquiry. These opportunities allow students to thrive in a culture that intentionally focuses on a student-centered approach.

Leadership Reflection and Action Steps for PAR Cycle Two

Appropriate data collection for each PAR cycle is essential to successful research. As I reflected on being a practitioner-researcher, I realized I have room to grow in the areas of data collection and analysis methods. I collected small data bits during the Pre-cycle, making coding challenging. As a result, the coding in the Pre-cycle was shallow and did not generate deep and meaningful codes. I reviewed the data collection process with the Project I⁴ coach and realized I needed to adjust what data I was collecting for PAR Cycle One. As I began collecting data for PAR Cycle One, I collected more significant artifacts to provide better data collection. I think I was successful in this process and therefore had better data to utilize in the coding process for this cycle.

As I reflected on my leadership skills after this cycle, I understood how vital it is to model practices, processes, and structures. When I first began working with the CPR team, I was concerned about how I would teach them about inquiry. I reviewed various teaching methods

and decided the best approach allowed the team to co-construct their meaning and understanding of inquiry. By utilizing a variety of protocols in every meeting, I was able to solicit members' input, thoughts, and ideas. If team members did not fully understand the information others were discussing, I provided time and a safe space for them to ask questions. Through this process, team member reflections were able to unfold and action was taken to move forward in the learning process. By establishing this safe space, we opened the door for all members to provide honest and valuable feedback and input. This input gave all team members a voice and shaped the IECHS Inquiry Coaching Tool.

During the last two meetings of this cycle, I noticed a team member struggling with some ideas and concepts compared with the rest of the team. This participant needed extra time to process information, ask clarifying questions, and ponder over thoughts. Initially, this frustrated me because of how long this member took to understand the same concept that others easily grasped. I then realized that, as the facilitator, my role was to differentiate facilitation practices so this member could move forward with deeper understanding. To do this, I asked probing questions of the small group, allowed the group to change directions of task completion, and reassigned group members to ensure the member heard information in various ways. I later spoke to this member during a summative meeting and shared that I appreciated their deep thought in learning about inquiry. During our conversation, they shared it took longer for them to process information and that they were impressed with the knowledge base other team members brought to the discussion. This interaction caused me to reflect on how frustrated I got during the first few meetings when the team member seemingly could not understand and process information. As a result, I learned the importance of patience and being strategic as I make decisions on moving the team forward through the inquiry process during PAR Cycle One.

During the coding and categorizing of data, I began to notice a trend in some of the data. The CPR team mentioned how intentional classroom practices could support student inquiry. During meetings, members brought up critical thinking, questioning strategies, collaboration/co-construction of knowledge, and metacognition as important components of inquiry. The team added these instructional practices to the IECHS Inquiry Coaching Tool. I initially felt instructional practices that support student inquiry was an emerging theme in the PAR Cycle One data. However, as I analyzed the data, I realized I did not have enough data to designate this as an emerging theme. The CPR team made efforts to include instructional practices that supported student inquiry on the tool. They felt these practices are essential for supporting students as they move to learning through inquiry. At the end of PAR Cycle One, I had yet to use the tool to observe inquiry in the classroom. Therefore, I had not collected data to determine if there is an alignment between critical thinking, questioning strategies, collaboration/co-construction of knowledge, and metacognition as essential instructional practices to support student inquiry. I felt this theme may continue to emerge as I move to PAR Cycle Two.

As I moved forward in PAR Cycle Two, I planned to collect data using the IECHS Inquiry Coaching Tool to see if classroom practices that support student inquiry is an emerging theme. I planned to conduct a walkthrough of each team member's class and then meet with the team member to collaborate on the reflection of the data from the tool. After I had completed one full round with each team member, I wanted to present all data to the CPR team. At that time, the team will decide what steps to take to move forward. Again, I made sure to remember to model an inquiry process during all upcoming meetings and not tell the team what the data says. Instead, I needed to allow the team to understand the data and develop the proper steps for moving forward.

Conclusion

As I moved into PAR Cycle Two, I continued to model inquiry-based learning for the CPR team in all meetings. The cornerstone of their growth as teachers seems solidified because they have experiences in the meetings that support them to experiment in the classroom; this level of continuity, interaction, and reciprocity is what Dewey (1963) names as critical components of experiences. In addition, I planned to augment my understanding of how the teachers are transferring their knowledge and skill to classrooms by collecting specific data from every team member by utilizing the IECHS Inquiry Coaching Tool and then using these data to have conversations with individuals and the team. As the team analyzed this information, we developed an action plan for moving forward. The action plan included what steps to take next to grow the team members in implementing inquiry-based learning experiences. These data collected from PAR Cycle Two will clarify the emerging themes. In addition, findings from this cycle will indicate if the categories and themes listed in PAR Cycle One are conditions that promote inquiry-based learning experiences.

CHAPTER 6: PAR CYCLE TWO AND FINDINGS

In PAR Cycle Two, the co-practitioner researcher (CPR) team and I built on PAR Cycle One work to further develop learning experiences that support inquiry-based learning at Imagination Early College High School (IECHS). During PAR Cycle One, the CPR team deepened relational trust as they co-designed the IECHS Inquiry Coaching Tool. During the process of co-constructing the observation tool, team members began using inquiry-based strategies in their classrooms. In the participatory action research process, the team shared how they implemented inquiry instruction and collaborated to improve classroom practices.

PAR Cycle Two Process

PAR Cycle Two (April-October 2022) included three CPR meetings, three post-observation coaching conversations with individual teachers, and three reflective memos (see Table 10). In PAR Cycle Two, the CPR team and I used our experiences from the Pre-cycle and PAR Cycle One to increase inquiry-based learning that created the conditions for student agency in classrooms. During CPR team meetings in this cycle, team members reviewed and edited the IECHS Inquiry Coaching Tool, participated in a member check, selected a focus area for the inquiry-based coaching observation, participated in a coaching cycle, and reflected on the entire process of participating in the CPR team for the past year.

I modeled protocols for inquiry during all meetings in PAR Cycle Two. As a result, I collected and coded sixteen artifacts. I coded and sorted the data into categories and emerging themes and analyzed for findings. During PAR Cycle Two, I met with my coach to reflect on data and discuss categories, emerging themes, and findings. All members were present for the CPR team meetings on April 8 and September 16, 2022. The October meetings had one fewer member, as she resigned from IECHS on October 5, 2022.

Table 10

Activities: PAR Cycle Two

Activities	CPR Meeting 4/8/22	CPR Meeting 9/16/22	Coaching Conversation 10/5/22	Coaching Conversation 10/5/22	Coaching Conversation 10/6/22	CPR Meeting 10/11/22
Personal Narrative (n=2)		●				●
Closing Circle (n=3)	●	●				●
Gallery Walk (n=2)		●				●
Observation Tool Design (n=2)	●	●				
Reflection Questions (n=3)			●	●	●	
Member Check (n=1)		●				
Reflective Memo (n=3)		●	●			●

We began each meeting with dynamic mindfulness to center ourselves to be fully present and prepare us for the work ahead. Team members offered input through written personal narratives and closing journals. In addition, during the September and October 2022 meetings, team members participated in a gallery walk to share their thoughts and opinions about the PAR process.

CPR Meetings

During the first meeting (April 8, 2022) of PAR Cycle Two, the CPR team reviewed the IECHS Inquiry Coaching Tool to ensure the tool was useful for collecting evidence to support inquiry-based teaching and learning. Team members adjusted the tool by adjusting language in the evidence section and streamlining the format. During the CPR meeting, members discussed the best practices for conducting the observation. Concentrating on what is taking place in the classroom was a priority; therefore, we decided the observer would use selective verbatim to capture inquiry-based approaches and use the evidence to check which attributes were present during the lesson. In particular, team members did not want observers to focus on placing check marks in the attribute column and potentially missing evidence of critical inquiry-based practices in the classroom. This process, co-developed and revised with teachers, not only ensured that the observer collected accurate data to determine attributes; their participation in the process and agreements were critical factors in using the tool successfully. In addition, team members shared in a closing circle a summary of what they were looking forward to as the team moved forward with inquiry.

In the second CPR meeting (September 16, 2022), team members reflected on their growth with inquiry teaching practices. Additionally, I conducted a member check to discuss the

two emerging themes (PAR Cycle One), and teachers selected an area of focus for the first inquiry-based coaching observation.

I had the third set of meetings (October 5 and 6, 2022) with individual teachers–the post-observation coaching conversations meetings. I facilitated the thirty-minute meetings, asking the teacher specific coaching questions that required them to reflect on their intentions for inquiry, the data from observations to document inquiry-based practices, future plans for implementing inquiry, and changes in their thinking that occurred during the entire process of using the tool. I recorded each coaching meeting and coded the transcript from the discussions.

On October 11, 2022, I held the final CPR meeting with four team members to reflect on the yearlong PAR process. In a personal narrative, team members shared the instructional practices that they used during their first observation, rated the PAR process using a four-point scale, wrote about the process of using the coaching tool and coaching conversations, and completed Flipgrid videos detailing their journeys during the PAR process.

PAR Cycle Codes and Categories

All meetings from PAR Cycle Two generated data that I coded, categorized, and analyzed for emerging themes. I looked for trends and patterns that offered evidence for the PAR research questions. The overarching question was: How do teachers design and implement inquiry-based learning experiences that foster student agency? The sub-questions were:

1. To what extent do teachers collaborate to design learning experiences that embed inquiry-based instruction?
2. To what extent do teachers implement learning experiences that promote inquiry?
3. How does the process of collaborating with teachers affect my development as an instructional leader?

I reviewed all artifacts to code keywords, ideas, and phrases. I found that the data closely matched the two emerging themes from PAR Cycle One: teacher shifts toward inquiry-based instruction and conditions for inquiry-based learning. I fortified the first theme to include practices to teach students inquiry.

Teacher Shifts Toward Inquiry-Based Instruction

Shifting people's thinking can be a challenging process because shifting practices is incremental (Gawande, 2011). Teachers had often become comfortable with particular teaching methods and relied on them for many years (Mehta & Fine, 2019); they had expressed some anxiety about changing. However, through two cycles of inquiry, we had, to a large extent overcome the issues that Cuban (2021) says confound teacher change: teachers do not agree with each other about the needed changes and they do not believe the changes actually reflect what they face in the classroom. Team members shared they knew they needed to move past direct instruction to inquiry-based instruction but were unsure how to make the shift. Team member two reported that he felt scared to allow students to take control of the learning in the classroom through inquiry. He knew inquiry-based learning was productive and beneficial to students, but he stated, "it was a scary process." Shifting from a traditional teaching approach to teaching through inquiry requires teacher agency, opportunities for co-construction, and authentic learning experiences. The CPR team acknowledged during PAR Cycle One that these conditions were essential for them to grow in learning how to implement inquiry in their classrooms.

Teachers need to experience what we expect in classroom instruction before they can feel confident to implement change; if teachers experience inquiry, they are more likely to use inquiry (Machado, 2021; Simon, 2019). As we collaborated among CPR members to create the inquiry-based coaching tool in PAR Cycle One, team members engaged in dialogue that helped

to increase agency and sense of possibility. Dialogue is essential for all learning, and tools can act as material mediators that increase the possibility of social interaction and accelerate learning (Wise & Jacobo, 2010; Wong et al., 2021). As a result, during PAR Cycle Two, team members aligned their teaching with the coaching tool. Team member four stated, "I'm excited to receive and provide feedback on implementing inquiry." Every team member mentioned they expected to grow due to utilizing the coaching tool and engaging in a coaching conversation. Some of the statements from the team during team meetings in PAR Cycle Two included, "my thinking has definitely evolved," and "I need time to think through a debrief, so this process is helpful."

The CPR team continued to shift their thinking about teaching practices as they engaged in the inquiry-based coaching observation tool and coaching conversation. As a result of the analysis of the evidence from our work, these categories emerged: teacher agency, collaboration, co-construction of knowledge, and authentic learning (see Figure 12). I reviewed these categories with the three categories from PAR Cycle One; teacher agency, collaboration and co-constructing knowledge, and data and evidence drive growth. As a result, I recoded the category of data and evidence drive growth to authentic learning. These three codes offered processes and opportunities for teachers to reflect and learn. In other words, each of the processes was an opportunity for authentic learning. Therefore, I changed the data and evidence drive growth category to authentic learning.

By engaging teachers in inquiry-based learning experiences throughout PAR Cycle Two, teachers developed agency, collaborated and co-constructed knowledge, and were engaged in authentic learning experiences. In addition, this modeling led to a shift in their teaching practices toward inquiry.

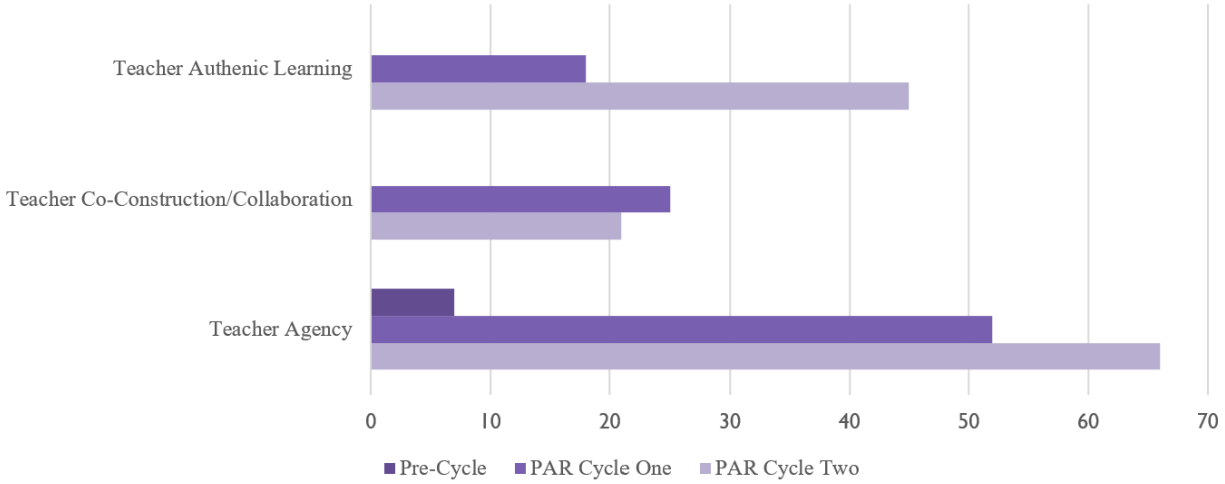


Figure 12. Coding data for emerging theme: Teacher shifts toward inquiry-based instruction.

Conditions for Inquiry-Based Learning

Setting appropriate conditions for inquiry-based instruction in the classroom is essential; teachers need to be intentional about choosing and implementing classroom practices that foster student inquiry. The initial coding for this category had the code student agency, authentic learning, and utilizing student culture/narratives. During PAR Cycle One, I included the four conditions for teaching practices that support teaching inquiry: academic discourse, asset and growth mindset, collaboration and co-construction of knowledge, and questioning strategies. Although codes for this category did not emerge early on, I felt these data were essential to retain for PAR Cycle Two. After I coded the data from PAR Cycle Two, these codes reappeared (n=45); 41% of the category.

As I analyzed data from PAR Cycle One and PAR Cycle Two, I changed the category utilizing student culture/narratives to teacher practices. I reflected on the code utilizing student cultures and narratives as authentic learning. The category had nine instances in PAR Cycle One, the lowest instance of codes in this emerging theme. Hence, I moved this category to a code under authentic learning. In Figure 13, I illustrate the new categories and codes for the emerging theme.

Academic Discourse. During PAR Cycle One, team members described academic discourse as students discussing their learning, working in teams, explaining their knowledge, building on the ideas of others, and explaining the significance of the content. In PAR Cycle Two, teachers discussed methods for academic discourse, including intentionally teaching all vocabulary tiers, utilizing sentence frames, and integrating accountable talk. In addition, members discussed the importance of students communicating with peers by using academic discourse that included these key elements. The CPR members then included these elements in

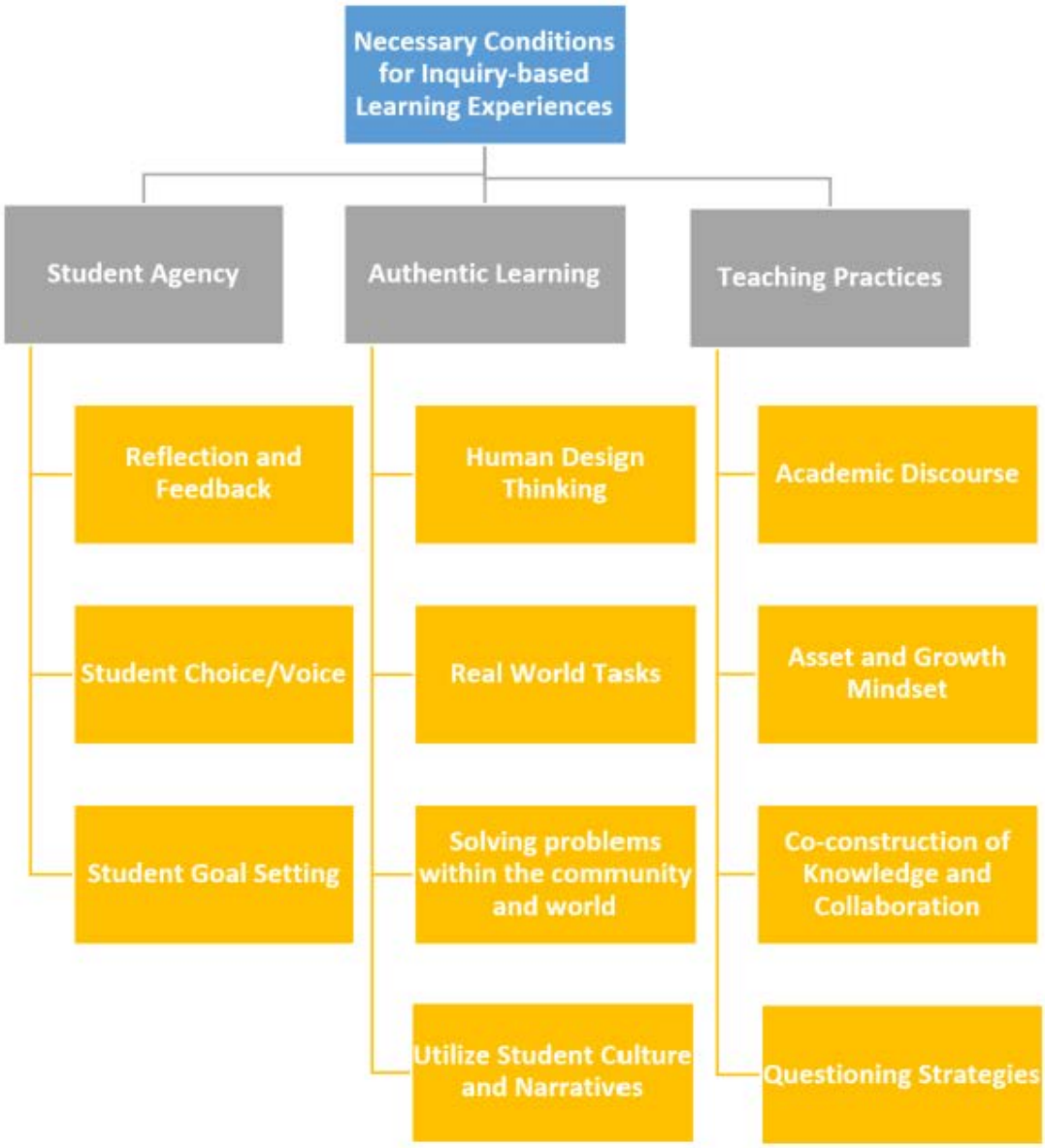


Figure 13. Necessary conditions for teachers to implement inquiry-based learning experiences.

the IECHS Inquiry Coaching Tool language. For example, they decided that the observation tool should indicate that "students can use a variety of sentence frames to build on the ideas of others, hold the floor, disagree respectfully, and pose questions to the group" as well as "students can use academic and content vocabulary to describe their learning when asked and explain what they are learning and its significance in relation to their essential questions/learning targets" (Innovation Early College High School, 2022).

All teachers on the CPR team teach academic vocabulary by using tier one, two, and three vocabulary words. However, how students use the tiered vocabulary was an essential focus for academic discourse. During PAR Cycle Two meetings, team members connected the importance of teachers building student language structures so the students can fully access the content. Member 2 shared, "I don't often provide opportunities for the students to teach others and try to use language." During this member's coaching conversation, he recognized he had not built language structures in the class and that this was an essential step for inquiry to flourish in the classroom. Another teacher member shared that he had seen growth in his student's use of academic discourse. He stated that "people who do not want to talk out loud for the whole class were definitely learning and thinking about language and justice and equity issues." These two examples demonstrate that team members were analyzing the importance of the teaching practice of academic discourse in an inquiry-based classroom.

Asset and Growth Mindset. Teachers who model an asset and growth mindset are crucial to implementing inquiry in the classroom. We discussed asset and growth mindsets five times in PAR Cycle One and eight times in PAR Cycle Two. For teachers to shift toward inquiry-based instruction, integrating asset language is vital for establishing growth mindsets (Fitzgerald, 1976). Teachers improve student confidence using asset language (Taccogna, 2003).

The team agreed that teachers could implement this process by offering students opportunities to give and receive feedback to improve their abilities to complete learning tasks accurately. Members shared in the CLE meeting that teachers can coach students on how to think through and positively respond to feedback during the feedback process. Members felt that students should try, perhaps fail, and revise their work in a safe environment.

During PAR Cycle Two, team member 5 focused on asset and growth mindset for her coaching observation. During the coaching conversation meeting, she shared, "I think that I've been focusing on myself, which is important, and I definitely have to model and be a leader in that way." Through the teacher's intentional modeling of asset language, students can learn how to use positive language (Taccogna, 2003). This modeling can occur throughout each lesson and should be a focal point during reflection and feedback, creating conditions for metacognition (Olivier et al., 2019). Team members felt this process was necessary, so we embedded it in the IECHS Inquiry Coaching Tool.

Collaboration and Co-Constructing Knowledge. The collaboration and co-construction of knowledge was a key part of our work in PAR Cycle One (26%) and PAR Cycle Two (27%). Student collaboration included discussions with peers, teachers, and groups of peers. One member pointed out collaborative classroom conversations with total class participation techniques as critical to student inquiry. She shared that teachers provide an equitable environment in speaking and sharing thoughts and ideas by intentionally using protocols. For example, teachers who use equitable calling on strategies like equity sticks can change the student discourse expectations and patterns.

As students collaborate, inquiry-based teachers use questioning strategies–question forms and question levels that help students focus their discussion and consider more rigorous ideas

and concepts. As a result, teachers and students ask and answer questions at the analysis, evaluative, and synthesis levels. We centered on questioning practices during CPR meetings in PAR Cycle One (47%) and PAR Cycle Two (33%). During the February 11, 2022, CLE meeting, team members discussed that students must be able to create and ask thought-provoking questions. Member four reflected on how he designed lessons so “students collaborate to develop their point of view based on texts and to co-create criteria to evaluate sources."

Questioning Strategies. As one participant said, "Inquiry is the continual asking of questions and refining of answers to make sense of the world." At CPR team meetings, we discussed how students should drive the questioning in the classroom and how this process could be challenging for educators. The team agreed the process takes time, and teachers may not have concrete answers and solutions about how students ask questions. In addition, the team discussed how teachers could provide students with activities that empower them to shape their learning through open-ended responses, student-generated questions, and student-generated learning targets.

Setting the right conditions in the classroom for inquiry to thrive is crucial, as one CPR member pointed out that "Inquiry is driven by learner questions." As students learned to develop and answer questions, they began to understand their thinking. Team members discussed metacognition seven times (18% of codes for category) during conversations in PAR Cycle One and twice (4% of codes for category) in PAR Cycle Two. Intentionally planned and implemented teaching practices that privilege students’ agency throughout activities and engaging students in authentic learning tasks are conditions that lead to inquiry-based learning. By setting the right conditions for inquiry-based learning, students can "take ownership in their learning."

The two updated emerging themes (see Figure 14) provided data to confirm the findings for this study. In the next section, I discuss first how teachers shifted their thinking about inquiry-based teaching practices by experiencing inquiry as learners and second, how shifting teacher thinking leads to implementing inquiry-based learning experiences.

Findings

As I engaged in the research for the PAR study, I realized that teachers needed to be immersed in new learning to rethink their teaching practices. The act of simply telling teachers what to do and expecting them to change their teaching is a false narrative that permeates education (Mehta & Fine, 2019). Teacher practices only change once they have personally experienced and engaged in new learning using the strategies for their learning that we expect them to use in the classroom–in sum, once they have had an opportunity to co-design what to do (Woo & Henriksen, 2023). In the findings section, I outline why learning and rethinking teaching matter and how teachers use the process of learning and rethinking teaching to change teaching practices.

Shifting Teacher Thinking

If principals expect teachers to shift teaching practices, they must have opportunities to engage in the new practices as learners. Member 2 stated during the April 8, 2022, CPR meeting that he needed to personally experience inquiry before leading inquiry in the classroom. Immersing teachers in inquiry as they developed their knowledge of inquiry-based teaching practices supported them to grow in their individual and collective abilities to implement inquiry in their classrooms. As a result, teachers better understood inquiry as a teaching practice and began to analyze how to change their teaching practices. This understanding reshaped the way they viewed their teaching practices. However, even though I modeled inquiry in all meetings,

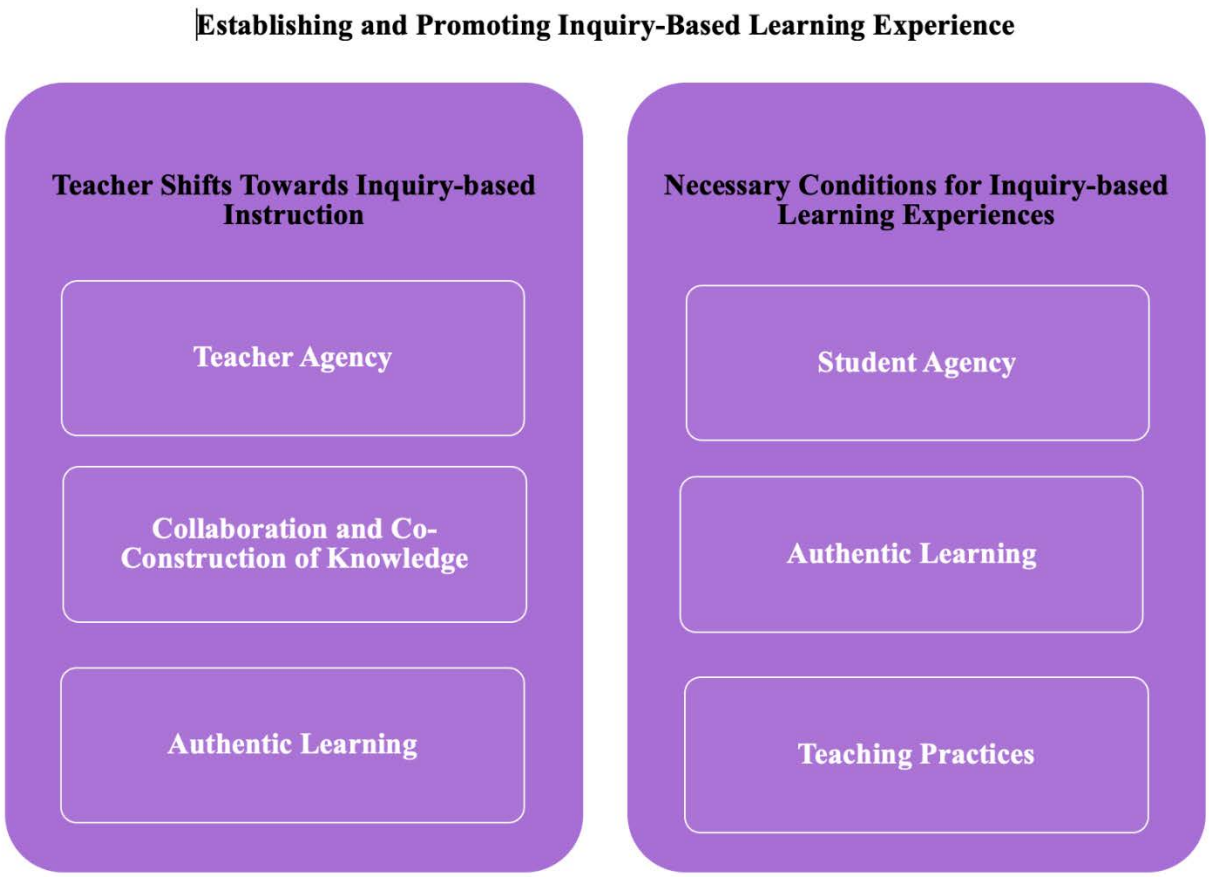


Figure 14. Updated emerging themes and categories.

the members did not fully realize until the end of the PAR process that they had engaged in inquiry as learners. During the PAR process, CPR team members gained agency as they:

- collaborated and agreed upon the definition of inquiry and the inquiry-based coaching tool;
- participated in authentic learning through the inquiry-based coaching observation and coaching conversation; and
- co-developed the inquiry-based coaching tool.

As a result, they decided which practices to implement in their classrooms.

The conditions for inquiry-based learning for teachers who are learning to be inquiry teachers and for the students they teach are the same: agency, co-construction of knowledge, and authentic learning. Each condition had high frequencies in both emerging themes in data collection throughout the PAR process, indicating they are essential in ensuring a balance in inquiry-based instruction. Figure 15 outlines the three conditions and the percentage of occurrences during coding of data.

Teacher Agency

Agency for teachers means ensuring that teachers have autonomy in their learning and recognize how students need the same assurance of autonomy of ideas in theirs (Kundu, 2020). "I want to authentically empower our students the same way that we were authentically empowered by creating the rubric," was a comment made during a CPR meeting. In other words, teachers develop efficacy or the ability to produce a desired result by engaging in experiences that support their learning. During the PAR process, I intentionally embedded multiple opportunities for team members to increase their agency as they collaborated to define inquiry, to create a common language, and refine the inquiry-based coaching tool. By creating conditions

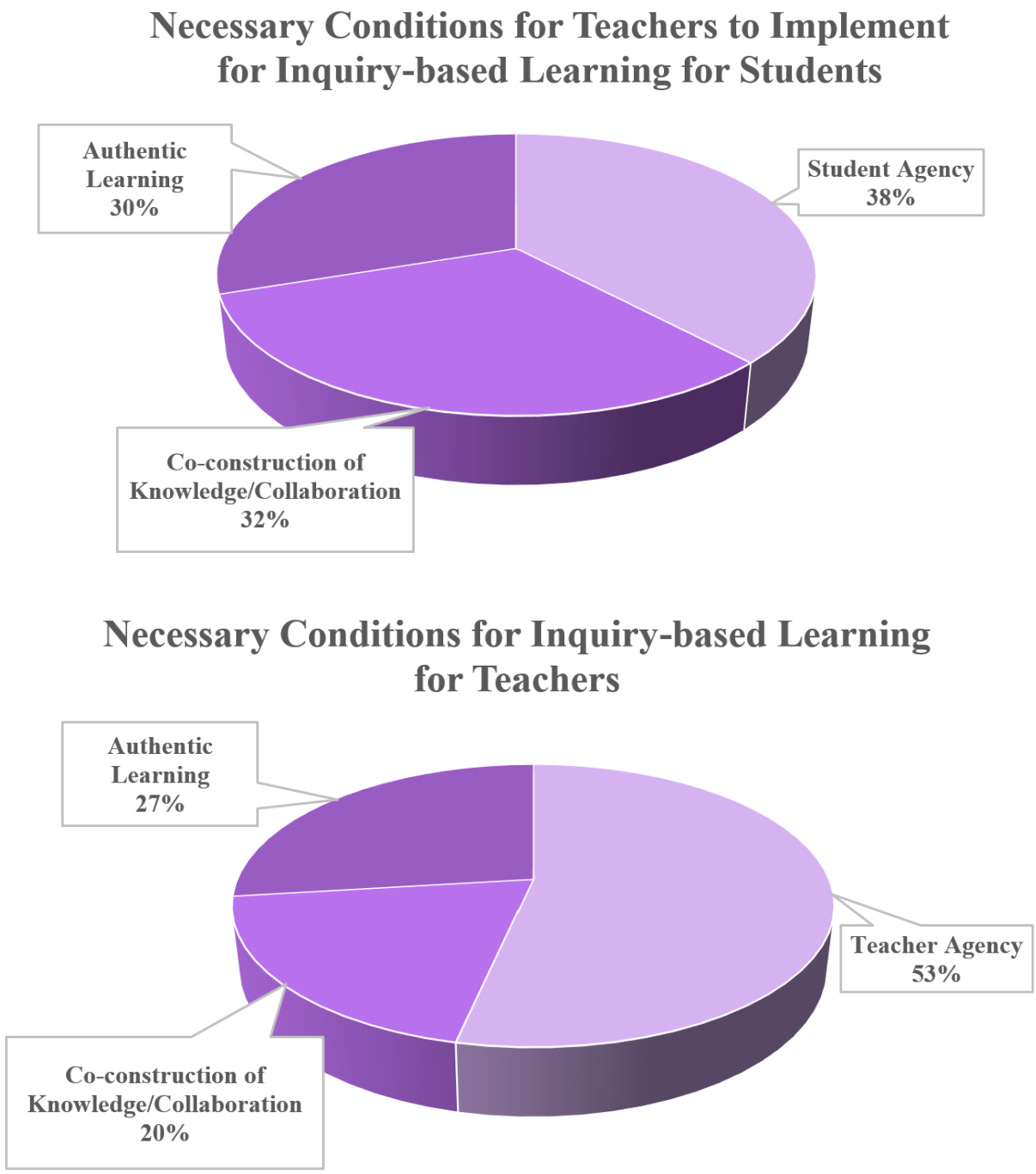


Figure 15. Frequency of responses for inquiry for teachers and implementation of inquiry-based practices.

for fostering teacher agency, I communicated to teachers that we would have a safe space to have consistent and deep reflection on teaching practices. Team members shared they were able to grow through engaging in praxis, deep reflection about equitable conditions for dialogue learning that lead to changing the classroom from heretical and teacher-controlled to communal with high degrees of student autonomy (Freire, 1970). The team agreed that the PAR process provided a safe space for them to "reflect and make changes to the way they teach." Some areas where members grew were:

- changing how they asked students questions in the classroom,
- how they approached essential questions and performance tasks,
- becoming more intentional with lesson design,
- providing students with autonomy,
- changing language structures, and
- setting up routines that foster inquiry.

Teacher reflection supported changes in teaching practices. Therefore, enacting a cycle of praxis.

Data from the Pre-cycle, Cycle One, and Cycle Two indicated that teacher agency is essential to facilitate teacher shifts toward inquiry-based teaching (see Figure 16). I collected one hundred twenty-five instances of data from the three PAR cycles and coded the data into the category of teacher agency. With 53% of the evidence, the instances of agency increased from each PAR cycle, which indicated the CPR team became more aware of the impact their autonomy to make decisions had on teachers making shifts toward inquiry-based instruction. Not only did the team become more mindful of the importance of their decisions and voices, but as a result, they became more aware of the importance of and how they could increase a sense of student agency. As the team increased their individual and collective sense of autonomy and thus

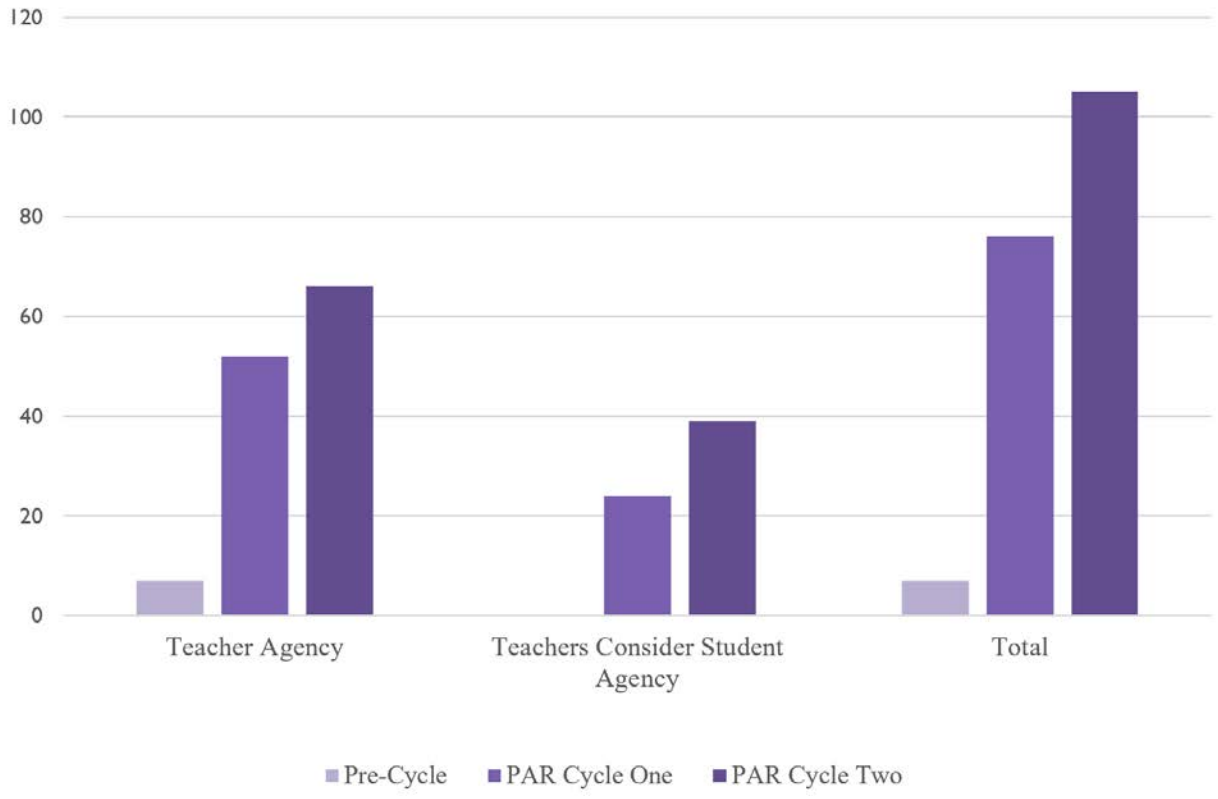


Figure 16. Agency across PAR cycles.

feelings of increased teacher agency, they began to see that their experiences could translate into creating parallel experiences for students. In Figure 16, I illustrate teacher agency and teacher considering possibilities for student agency across the PAR Pre-cycle, Cycle One, and Cycle Two. As the team collaborated to learn about inquiry, they grew in understanding how vital agency is to create an environment where inquiry can thrive.

Collaboration and Co-Constructing of Knowledge

Teachers need support as they shift their teaching practices from traditional models to inquiry-based models. Other educators' support provided the CPR team with opportunities to self-reflect and adjust their teaching practices. The team saw value in discussing inquiry with their colleagues and felt these conversations provided them with various ways to think about inquiry-based teaching and learning. Each team member saw themselves as a teacher and learner while developing the inquiry-based coaching tool. The connection to being both a teacher and learner helped team members appreciate the value of collaboration and co-constructing knowledge.

During data collection, I coded ninety-nine codes within the category of collaboration and co-constructing of knowledge. Of those codes, 46 (20% of codes for the overall emerging theme teachers shifted their thinking about inquiry-based teaching practices) related to teacher collaboration. Fifty-three (32% of codes for the overall theme of shifting teacher thinking leads to implementing inquiry-based teaching practices) related to teacher-designed possibilities for student collaboration. In these data trends, I observed an increase in the number of instances as the PAR process progressed (see Figure 17). Through the process, team members clearly understood that collaboration leads to stronger teacher voice. The CPR team experienced a high level of growth and understanding of inquiry through collaboration and co-construction of

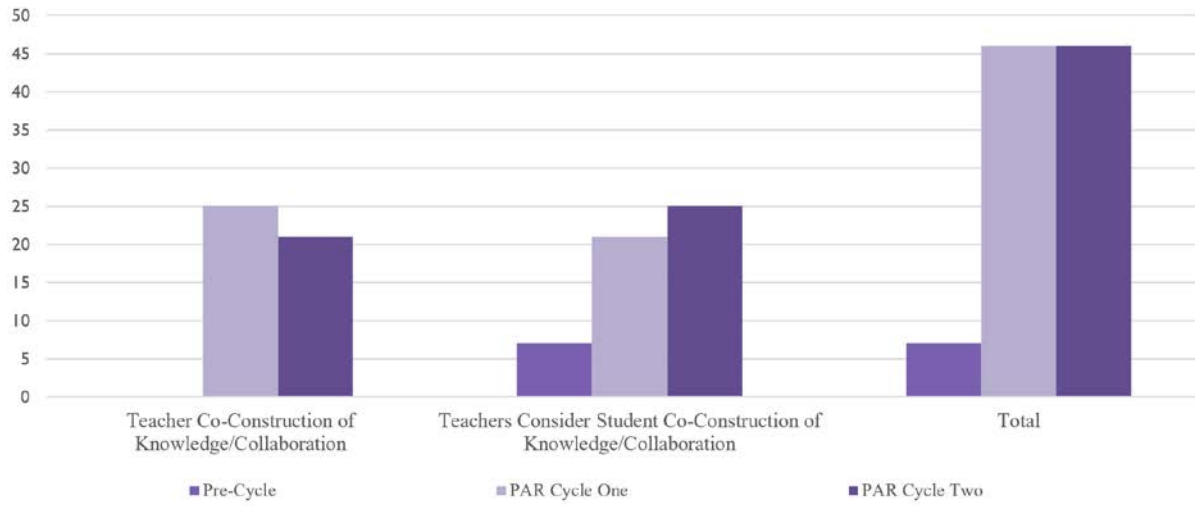


Figure 17. Collaboration and co-construction of knowledge across PAR cycles.

knowledge. The team was able to review various definitions of inquiry, develop attributes of what inquiry looked like at Imagination Early College High School (IECHS), and create an inquiry-based coaching tool.

During the PAR process, members shared that collaborating was an invaluable experience. Collaborating to develop a common language about inquiry appeared as 25% of the evidence for the collaboration and co-constructing knowledge category in PAR Cycle Two. Members shared during the October 11, 2022 gallery walk that drawing from the experiences and interpretations of others was valuable; they developed more confidence as they collaborated with other educators during the PAR process. The social process of discussion accelerated their learning and their decisions to change their practices. Wong et al. (2021) termed this process creative collaboration and it relies on teachers who work productively outside the classroom to investigate and change the practices they use inside the classroom. Team member 2 specifically shared in his final closing circle of PAR Cycle Two:

> There were moments when we were working as a team when I felt ill-equipped to be a part of this team. It always takes me a little bit longer to process and think through. I appreciate the opportunity to develop and co-construct definitions with other educators. I'm also thankful for the learning that took place so that I can improve in my classroom.

This statement indicates that as this member learned through social activity, “actual relations between humans” he gained a higher sense of understanding about inquiry (Vygotsky, 1978). Other team members shared throughout the PAR process that they appreciated working together to create something they believe in with other professionals.

Authentic Learning

I facilitated learning opportunities in authentic learning throughout the PAR process. Creating the IECHS Inquiry Coaching Tool and participating in coaching conversations profoundly impacted teacher learning and growth. As the team co-designed the coaching tool, they desired to create a tool that would support collaborative reflection and action. The goal was to create a tool that focused on growth through data collection and allowed for deep consideration of how the observed teacher implemented inquiry in the classroom. Team members wanted to create a tool that was non-evaluative and provided teachers with a trusting environment where they could deeply reflect on implementing inquiry. At the end of the process during the October 11, 2022 meeting, team members shared they were proud of the tool they created and were excited to share the inquiry-based coaching process with all of the other teachers at IECHS.

Teachers began shifting their mindsets about providing students with authentic learning opportunities after I immersed them in authentic learning opportunities during the CPR meetings. Figure 18 shows growth in codes for teacher authentic learning and teachers considering student authentic learning from the Pre-cycle to PAR Cycle One. Team member 2 shared in the September 16, 2022 CPR team meeting that his next steps for implementing inquiry with students included creating authentic products and bringing in authentic audiences to view student products. Other team members shared they desired students to create a meaningful learning product just as they were able to create something meaningful with the inquiry-based coaching tool. The learning process through inquiry provided teachers with an authentic experience that reshaped their thinking about teaching and learning in their classrooms. In other words, teachers transferred their learning into changes in their instructional practices.

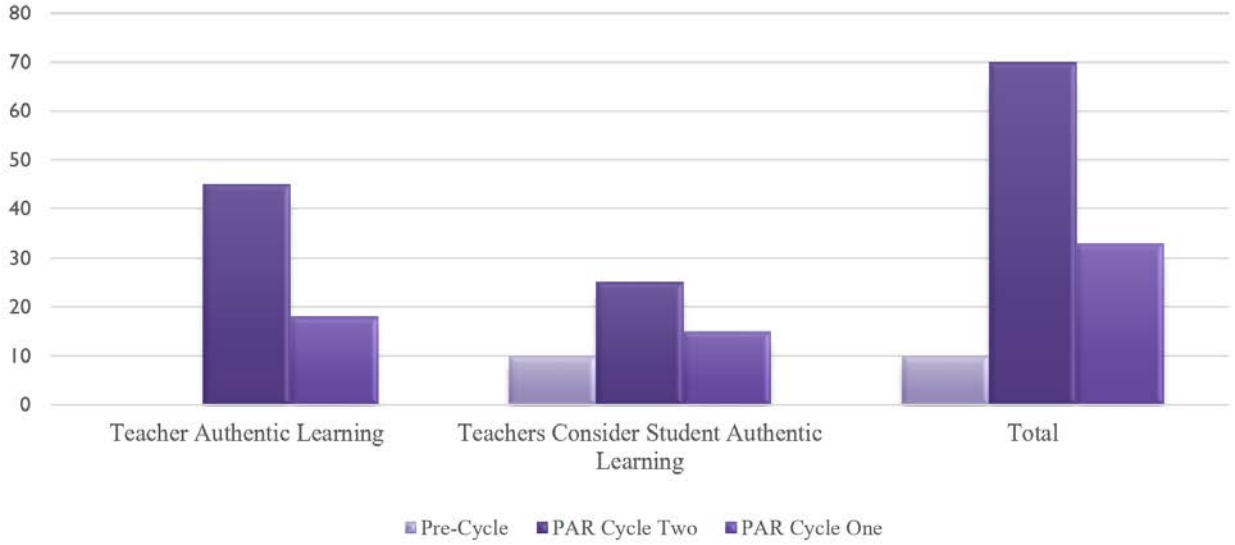


Figure 18. Authentic learning across PAR cycles.

The process of creating the inquiry-based coaching tool was a valuable activity for the team. During the last CPR meeting, team members rated the creation of the tool as having the third highest impact (3.75 on a scale of 1.00 to 4.00) on their growth in gaining a better understanding of inquiry. In addition, creating the tool allowed the team to engage in work that would directly affect their growth in implementing inquiry into their classroom. Team members described the process of creating the tool as beneficial, engaging, empowering, and valuable. In a discussion of multiple studies of teacher co-design, Woo and Henriksen (2023) reported that the process "improved their confidence and renewed their enthusiasm for collaboration, which had a lasting positive impact on their school cultures" (p. 3).

The highest level of learning for team members was through coaching conservations. Team members rated participating in the coaching conversation as having the highest impact (4.00 on a scale of 1.00 to 4.00) on gaining a better understanding of inquiry. The coaching conversations promoted teacher reflection in a trusting space. Members shared that the reflection process helped them to verify goal attainment, to understand areas for improvement, and to engage in asking reflective questions they would not have otherwise asked about their teaching and student learning. During the final CPR meeting, members agreed that value came from the coaching conversation, not just the tool. Team member 4 shared, "the process of talking through the observation turned suspicions into learning next steps, which products I needed to refine, and how strategies can become routines."

Once team members experienced teacher agency, collaboration and co-construction of knowledge, and authentic learning, they modeled these practices in their classrooms. Team members shifted their perspectives and actions from a traditional teaching model to an inquiry-based instructional model. Member 1 shared that after the experience of participating in the PAR

process, they felt "advanced and empowered to coach our students into highly effective behaviors and thinking." The feelings of empowerment led to a renewed sense of agency in the classroom and the ability to overcome any latent fears or anxiety about changing. Then the teachers, with a new vision of themselves as learners, were ready to use the process of learning and rethinking teaching to change their teaching practices.

Shifting Teacher Thinking Leads to Implementation

Teachers' practices shifted as they increased their knowledge about and had personal experiences of inquiry teaching; these shifts occurred before I observed teachers using the IECHS Inquiry-based Coaching Tool. Because of empowering teachers and treating them as designers through the PAR process, they adjusted their mindsets and began treating students as capable designers in their classrooms (Mehta & Fine, 2019). As teachers reflected on their current teaching practices, they began making adjustments. As I modeled inquiry in CPR team meetings, teachers increased their capacity to understand, plan for, and implement inquiry in their classrooms, which involved planning and implementing the same experiences for students that they had experienced: agency, co-construction and collaboration, and authentic learning. As member two indicated in the September 16, 2022, CPR Meeting, "I have reflected on the way I teach and began to revamp my instruction so that it is less of me giving students the answer and more about them finding the answer." After teachers engaged in inquiry as a learner they then began to consider how to implement inquiry into their classrooms.

Growth Mindset

Based on their personal growth as teachers, team members cultivated a growth mindset, which changed their sense of themselves as co-learners and opened up possibilities to make shifts in teaching practices; they developed a newly informed vision of themselves as learners

and teachers and transferred that to changing practice (Gomoll et al., 2022). Based on coding, the focus on personal growth increased from PAR Pre-cycle to PAR Cycle Two, from minimal instances (*n*=7) in the Pre-cycle and to a slight increase (*n*=11) in PAR Cycle One to stronger emphasis (*n*=32) in PAR Cycle Two (see Figure 19). Member one shared, "I feel more confident in my ability to describe and create inquiry-based lessons now that we have fleshed out the observation tool." Even though self-confidence increased in the teachers' abilities to understand and begin to implement inquiry, they still had fears of giving up control of their classrooms. This fear did not keep them from moving forward as members shared they were excited about giving student ownership of their learning. One of the instructional support team members shared, "The teachers seem more confident pursuing this change, even though there is less control for the teacher in an inquiry-based lesson."

Teacher Planning

Teachers became intentional about planning for and implementing classroom practices based on their personal growth as teachers. Through experiencing the positive impacts of collaboration during the PAR process, teachers in the group shared that they had planned and implemented more collaborative activities in classrooms. In addition, after engaging in inquiry, the teachers strongly desired to implement inquiry and provide students with agency in their learning. This aligns with the idea that professional development should mirror what teachers want for students and that adults need to parallel profound learning experiences, so they understand the value of this kind of learning for students (Watkins et al., 2018). As teachers reflected on their experiences with inquiry they began to consider what inquiry could look like the classroom. The areas teachers began to consider were student agency, inquiry-based teaching practices, and

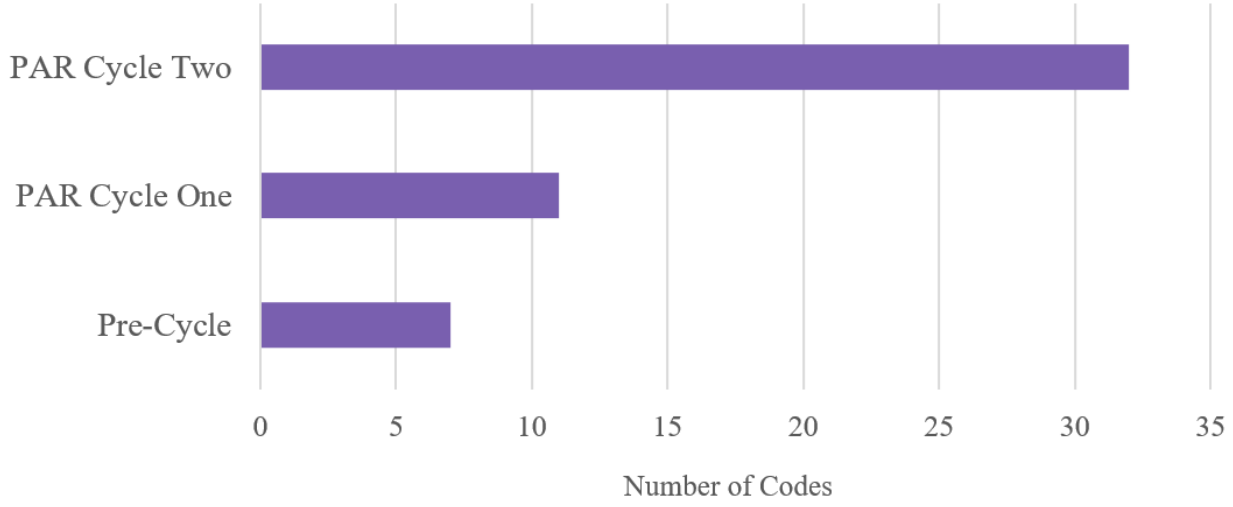


Figure 19. Teacher focus on personal growth across PAR cycles.

student authentic learning. In Figure 20, I outline the growth in teachers considering each of these areas as they began to implement inquiry-based learning experiences.

CPR team members experienced voice and choice during the PAR process; because members had control of their learning, they better understood how to provide students with possibilities for making choices in their learning. As indicated previously, as teacher agency increased through the PAR process, they designed and implemented curriculum that supported student agency. In addition, as the teachers engaged in having agency in their learning through creating the observation tool, they began providing students with the opportunity to develop their own rubrics.

CPR team members worked to embed inquiry into their classrooms and discovered that inquiry and student agency are highly connected. When teachers allowed students to develop questions, use academic discourse to discuss topics of interest to them, collaborate to solve real-world tasks, and use feedback for reflection they saw students' willingness to engage and provide their thoughts and opinions increase. The teacher's desire to give students voice and choice also increased. Teachers referenced providing students with voice and choice in selecting texts for the class, creating rubrics for assignments, deciding on grading practices for the class, creating authentic projects, and choosing authentic audiences.

Teacher Implementation

All three teachers on the CPR team provided opportunities for their students to create rubrics that assessed their learning. Similarly, the teachers supported students to develop questions about the content. By providing these experiences to the students, the teachers saw a higher level of engagement in the classroom. These processes led to more student buy-in and authentic discussions in the class. For example, team member 2 asked students to design

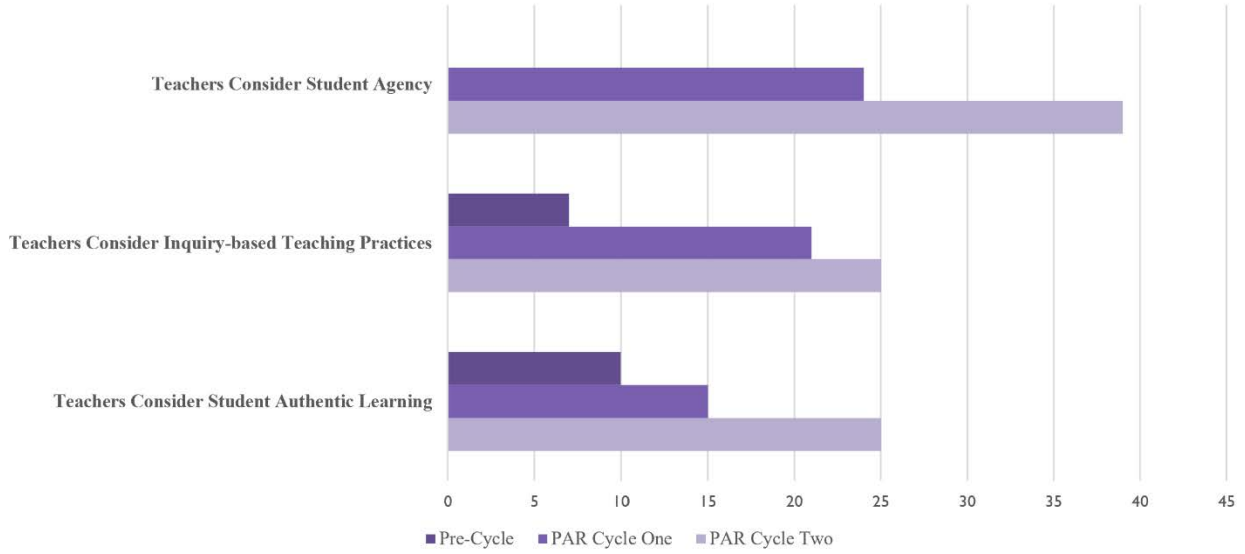


Figure 20. Shifting teacher thinking across PAR cycles.

questions to conduct research about civil rights. The students worked in groups to create questions that were meaningful to them and then researched the answers. The teacher did not provide any support unless the group asked for assistance. During this project, students were highly engaged in the research and in the presentation of the research to an authentic audience.

Collaboration and co-constructing of knowledge was another area where teachers were intentional in their instructional design for implementing inquiry. For example, one team member used data to group students together in small groups for a discovery lesson on functions. During this lesson, students co-constructed their own rules for how functions operate. The teacher felt this process was more meaningful to students because they collaborated to uncover function rules. Other CPR members, who are teachers, used collaboration to help students understand content vocabulary, create rubrics, and design projects to answer critical questions of lessons. For example, team member 4 shared he was intentional with his lesson design by building in opportunities for student groups to use Costa's questioning and Jamboard to collaborate because of our discussions and creation of the rubric.

Teachers changed their teaching practice as they learned about and engaged in authentic learning during the CPR meetings. Team member 2 reflected on his journey by sharing, “Our process has changed the way I approach essential questions and performance tasks in my classroom (as well as rubrics, prompts, etc.)." The team agreed they wanted to authentically empower their students just as the CPR team was authentically empowered to create the IECHS Inquiry Coaching Tool. Some other ways members empowered their students in authentic learning included creating rubrics, engaging in relevant and authentic discussions with peers, creating authentic products, and presenting to an authentic audience for projects. Team member 5 shared:

> The things that I have changed since last year is that I am giving students more opportunities to provide and receive feedback about their learning. This week students helped create their rubric for an upcoming essay they have to write in math. I think when students do these types of things; it helps give them ownership in their learning.

Allowing teachers to engage in the inquiry process as they learned to rethink teaching facilitated a change in how teachers implemented teaching in the classroom. The process of teachers engaging in the act of inquiry changed their thinking (Gomoll et al., 2022). As teachers considered ways to implement inquiry in the classroom, they provided students opportunities to engage in inquiry. The connection between the process for teachers to experience inquiry and the learning conditions for students to experience inquiry are the same: agency, co-construction and collaboration, and authentic learning. During the PAR process, the CPR team members engaged in praxis by learning new inquiry methodologies and implementing them in their classrooms.

Conclusion

Creating a classroom culture of inquiry to foster student agency has not been an easy task for the CPR team members. They shared that the process is hard and incremental (Gawande, 2011). Team member 4 shared:

> I'm growing as a teacher, but also, I'm super stressed out. Part of that is because I'm trying to tinker with inquiry. We've had these explosive conversations about what inquiry can look like, so I can't be where I was. I want to emphasize student choice and build in authentic products.

Although the process seems stressful, teachers were eager to continue building inquiry into their classrooms because they could observe how students were growing and learning more now than they have in the past. The CPR team members have grown in their confidence to

implement inquiry in the classroom; that confidence supported them to think about changing practices, and they used their new learning to drive the direction of learning for learning.

CHAPTER 7: DISCUSSION AND IMPLICATIONS

As I concluded the PAR study, I reflected on how I have grown over the past 28 years. I left high school feeling empty, disengaged, and confused. The emptiness, lack of fulfillment, and feeling of ignorance drive my desire to change the educational experience for students at Imagination Early College High School (IECHS). My mission to provide a different way of thinking and being for my teachers, which will ultimately impact students, drove the PAR study. I leave this study feeling full, empowered, and knowledgeable.

The participatory action research (PAR) study aimed to examine how I worked with three teachers and two instructional support personnel as co-practitioner-researchers (CPR) at Imagination Early College High School (IECHS) to co-design and implement inquiry-based learning experiences that foster student agency. The IECHS faculty realized we needed to provide our students with opportunities to develop their ideas and questions as they explore the content and the world around them. Therefore, I based the PAR study on this theory of action: *If* teachers collaborated to design inquiry-based learning experiences that support student agency, *then* the teachers would have the knowledge and skills to implement an inquiry-based pedagogy.

I conducted this research study at an early college high school with 16 staff members and 210 students. The majority of IECHS students are first-generation students who are considered at-risk; 64% of the students belong to a minority racial group. Concurrently, they are students who have the desire to accelerate their learning. During the fourteen months of the study, COVID's impact left a strain on staff and students. Five of the sixteen IECHS staff members, including myself, experienced significant health issues that affected our work performance. Even though staff members experienced a difficult time during COVID, the CPR team members were committed to making changes in their teaching practices, and this project and study is an

example of the determination and persistence to improve our practices as educators so that our students have experiences that thoroughly prepare them for college. We intended to make our school a place that is better than when we found it.

IECHS is a small early college high school in Greenville, North Carolina, with a big heart for empowering teachers and students to become the best version of themselves. The founding staff at IECHS built the instructional framework based on the belief that students needed opportunities to learn through a meaningful educational experience. A primary goal of the IECHS instructional framework is to teach students how to leave the world better than they found it. The co-practitioner researcher (CPR) team, consisting of English, Math, and Social Studies teachers, an Instructional Coach, and a Project Based Learning and Community Coordinator, understood that utilizing an inquiry-based approach to teaching and learning provides students with opportunities to make sense of the world. When teachers immerse students in inquiry, they give them opportunities to interrogate issues, engage in critical thinking, and build a sense of agency and belief (Riordan et al., 2019). The members of the PAR study wanted to grow and change their teaching practices to provide students with rich and meaningful learning.

Over fourteen months of participatory action research, the CPR team and I engaged in a Pre-cycle and two cycles of inquiry to change teaching practices. I used a networked improvement community (NIC) structure throughout the PAR process for the CPR group (Bryk et al., 2015; Russell et al., 2017). The NIC structure embedded the community learning exchange (CLE) axioms, in which the team members were the organizational actors closest to the work. They learned, collaborated, and co-constructed through a dynamic social process that capitalized on the hopes and dreams of the IECHS community (Guajardo et al., 2016).

During the three cycles of inquiry, the team engaged in multiple activities (see Table 11) for the purpose of improving their teaching and for data collection purposes. I intentionally structured these activities to model inquiry-based teaching and learning because I wanted to immerse team members in personally experiencing what inquiry sounded, looked, and felt like. During the three cycles of inquiry, I used CPR team meetings, CLEs, observations, and coaching conversations. I analyzed data throughout the three cycles to determine these two findings:

1. Teachers shifted their thinking about inquiry-based teaching practices by experiencing inquiry as learners.
2. Shifting teacher thinking led to implementing inquiry-based teaching practices.

By thinking, I mean that the teachers made their thinking visible due to their participation in the PAR study. I documented how their knowledge, skills, and dispositions shifted. Teachers needed time to think and reflect as they experienced inquiry before applying it in their teaching practices. Then, due to their shifts in thinking – new knowledge, new skills, and reflection on their learning – they could co-design and implement inquiry lessons in classrooms.

In summarizing the two findings, I make connections to the extant literature and examine the research questions for the PAR study. Then I review the implications for policy, practice, and research. Finally, I conclude the chapter by reflecting on how the PAR process influenced my leadership development over the fourteen months.

Discussion

The PAR study focused on how teachers collaborate to design and implement inquiry-based learning experiences that foster student agency. However, to fully engage students, first, I had to fully engage teachers and ensure they experienced authentic agency to make decisions and implement inquiry instruction. As teachers participated in three cycles of inquiry during CPR and

Table 11

Key Activities During PAR Process of Inquiry

	Pre-cycle (Sept.-Nov. 2021)			PAR Cycle One (Jan.-March 2022)				PAR Cycle Two (April-Oct. 2022)			
Activities	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	Aug.	Sept.	Oct.
CPR Team Meetings		X	X		X	X	X	X		X	X
Community Learning Exchange			X			X					
Inquiry-Based Observation											XXX
Coaching Conversation											XXX

CLE team meetings, they gained an understanding of inquiry through the lenses of learners. Placing teachers at the center of learning and providing opportunities for deep learning through inquiry facilitated a change in teacher thinking and practices. As team members experienced inquiry as learners -- co-construction and collaboration, agency, and authentic learning -- they designed and implemented inquiry pedagogy to provide their students with the same experiences. To analyze the PAR findings, I reviewed the literature review and recent studies and discuss three key factors that support the findings of the PAR study: Principal actions, teacher professional learning, and teacher agency.

Principal Actions

The principal occupies the central role of the head learner and, as the school leader, must engage in, display, and model the behaviors expected by teachers and students (Barth, 1990). Grissom et al. (2021a, 2021b) confirmed what Barth contended in the 1990s. In their meta-study of studies of 22,000 principals in six states, "the impact of the principal has likely been *understated,* with impacts being both broader and greater than previously believed" (Grissom et al., 2021a, p. ix). The principal influences student learning, teacher satisfaction and retention, student attendance, and discipline. As such, the authors recommend these four actions for principals to undertake to achieve better outcomes: engage in instructionally focused interactions with teachers, build a productive school climate, facilitate productive collaboration and professional learning communities, and manage personnel and resources strategically. In this PAR study, we particularly focused on inquiry instructional practices and did so in a learning community that was useful to the participants. Hale (2008) states that a standard of validity of activist research is its usefulness to the participants. In this study, the four participants found our work dynamic, practical, beneficial, valuable, and empowering. In a word – productive.

Using the CLE axioms, I intentionally structured each CPR team meeting and CLE to learn how the persons closest to the work could participate in diagnosing and designing how to teach inquiry. By using inquiry processes in our meetings, teachers as learners could reflect on their learning experiences. Using protocols for collaboration made the work collaborative and increased the teams' effectiveness because tools and protocols act as material and social mediators of learning (Ahn et al., 2021; Gomoll et al., 2022; Saunders et al., 2009; Wise & Jacobo, 2010).

Gomoll et al. (2022) studied teachers implementing problem-based learning, and their findings confirmed that teachers need to see their teaching and learning *in situ* – meaning they need to examine their classroom practices with guidance from the instructional leader to develop a professional vision of what they could and should do. I intentionally organized members' learning in ways that model what I expect them to teach students (Mehta & Fine, 2019). As I modeled behaviors, teachers began to transfer their learning to implementation in the classroom. We also co-developed an observation tool, and I observed classes and had coaching conversations based on the data from their classrooms, termed street data (Safir & Dugan, 2021) or pragmatic data (Cobb et al., 2011). Teachers used information from the CPR meetings and the observations and made decisions about what and how to implement inquiry in their classrooms.

In schools, "where administrators empowered teachers and treated them as designers, teachers treated students as capable and thoughtful human beings" (Mehta & Fine, 2019, p. 376). When teachers and an instructional leader diagnose and design together and trust collaborative decision-making, they can make substantive changes in classroom pedagogy (Spillane, 2013). Collaborating and engaging in inquiry and authentic learning by creating the IECHS Inquiry-based Coaching Tool helped teachers shift their thinking about inquiry to teaching inquiry-based

lessons in their classrooms. Because teacher collaboration leads to more significant teacher efficacy, principals must provide time, space, and support for collaborative efforts (Goddard et al., 2017). "Through getting involved in design processes, teachers reported increasing their teaching confidence and renewing their enthusiasm for collaboration" (Woo & Henriksen, 2023, p. 3).

In addition, through this process of authentic learning during our meetings, each team member gained a sense of ownership. Developing the coaching tool was a significant part of authentic learning for the CPR team. Collaborating to achieve a vision for inquiry-based teaching and learning provided deeper learning for team members (Mehta & Fine, 2019). I knew that teacher participation in the design of creating the coaching tool was essential to influence their teaching and the learning of their students. Woo and Henriksen (2023) state that "co-design is an inherently democratic process that values each participant's voice and is built on long-term personal commitments to change throughout conflicts, tough decisions, risks, and failure" (p. 2). Not only did they co-design, but we participated in the design precisely as teachers should engage students in inquiry classrooms to operate with student-generated questions (Simon, 2019; Tredway et al., 2019).

Highly effective principals implement structures that move teachers to greater independence and professional autonomy (Bredeson, 2000). In other words, through collaborative work in a professional learning community, we unpacked the black box of teaching that confounds education reform (Cuban, 2016); when we opened it up, we found that we had the knowledge and skills to tackle the work of inquiry learning together, repackage the way we teach, and design useful tools for implementing inquiry in classrooms.

Teacher Professional Learning

One of the highest impacts on students in terms of "skills development, self-confidence, and classroom behavior is that of the personal and professional growth of teachers" (Barth & Guest, 1990, p. 49). In observing and analyzing how a group of teachers worked together over three cycles of inquiry, we learned about effective inquiry practices and implemented inquiry-based learning experiences within the classroom. I observed how CPR members thinking about teaching changed; as the teachers reflected, they co-developed the skills and knowledge to implement an inquiry-based pedagogy designed to cultivate student agency at IECHS.

In their research on deeper learning, Watkins et al. (2018) indicated that adult learning must mirror what we want for students. Adults need to parallel deep learning experiences themselves so they understand the value and processes of this kind of learning for students. The teachers in this study changed how they approached teaching because they experienced the inquiry process as learners in our CPR group work. They collaborated, co-constructed knowledge, and engaged in authentic learning. As a result, they developed stronger teacher agency. The experiences changed how the teachers approached their planning, facilitation, and implementation of learning. The coaching conversations provided opportunities for change to take place (Drago-Severson, 2009, 2012). As teachers engaged in the coaching conversations, they began to ask questions about their teaching, and they asked each other questions. They viewed their teaching from new perspectives, reflected on the classroom data, and decided on changes they needed to implement (Tredway & Militello, 2023).

Many educator development programs do not place a focus on developing mindsets and essential skills to implement inquiry-based learning (Mehta & Fine, 2019). However, inquiry-based instruction can be a powerful model when there is an alignment of teacher beliefs and

teacher practice (Song et al., 2012). In the PAR process, I observed changes in teacher thinking that facilitated changes in teacher practice. These changes occurred because I immersed teachers in learning experiences through protocols and processes that modeled inquiry. These learning experiences gave teachers agency through co-constructing knowledge and developing the IECHS Inquiry-based Coaching Tool. The teachers took ownership of their learning as they engaged in a relational and rich learning co-practitioner research (CPR) team (Drago-Severson, 2009). When teachers had input in their planning and enacting practices as a result of their new knowledge and evidence from their classrooms, they experienced deeper learning and built their capacity to implement inquiry-based learning experiences within their classrooms (Riordan et al., 2019).

"True transformation occurs through the common efforts of all rather than the efforts of the individual" (Wise & Jacobo, 2010, p. 161). In every CPR meeting, I engaged teachers in collaboration and co-construction of knowledge, which is essential to all learning of adults and students (Driscoll, 1994; McKeown & Beck, 2015). The process of working together was beneficial; teachers enjoyed learning from one another, and co-learning accelerated the process for all, even when their learning rates were different and even when success in classrooms was not immediate.

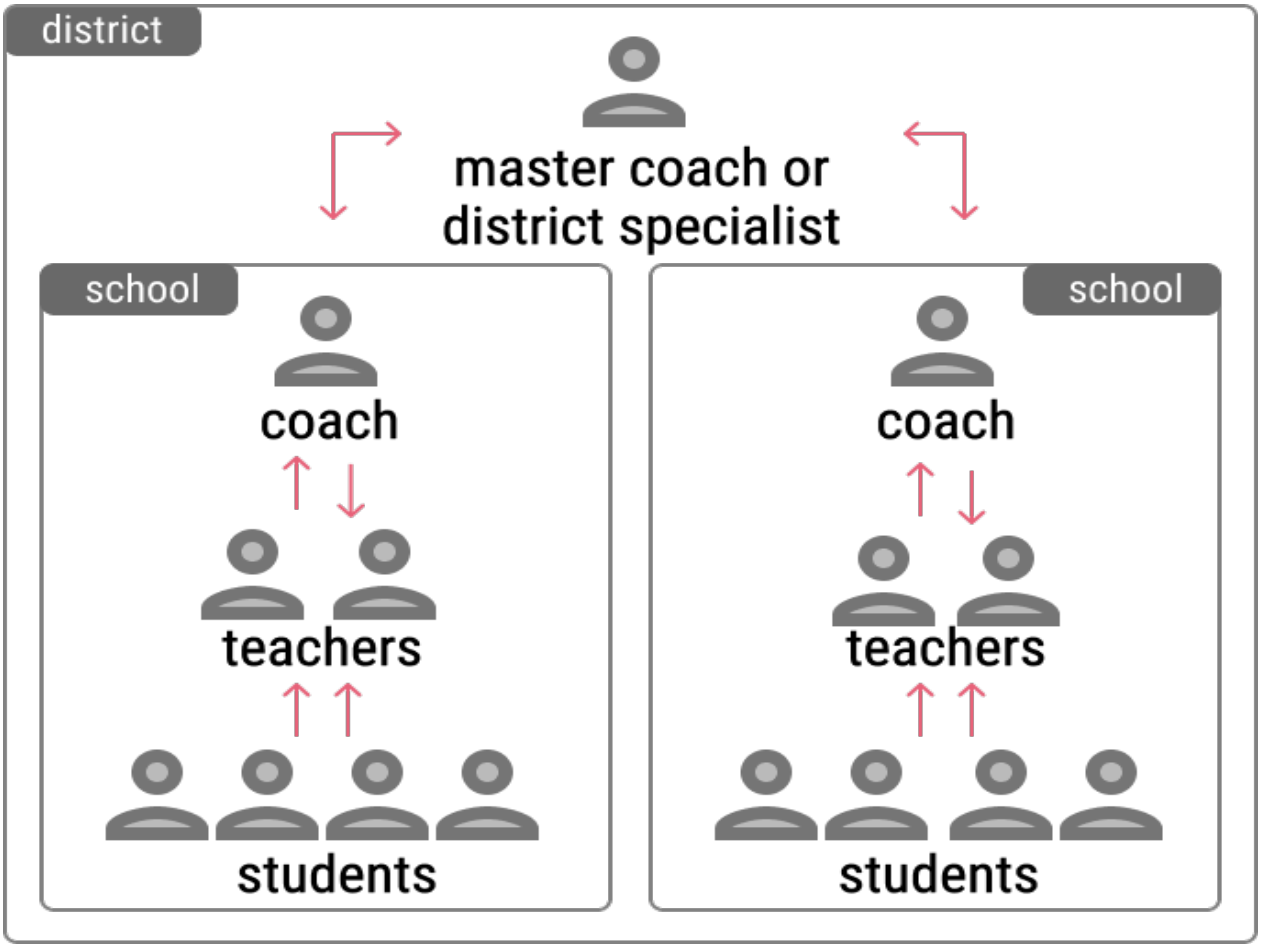
Teacher Agency

One area of concern for school development in changing instructional practices is a lack of teacher agency, especially regarding teachers' collective responsibility for learning (Bakkenes et al., 2010). Generating new thoughts and ideas from peers, reflecting on practices, and experimenting with change are effective ways to promote change in teaching practices and the field of education (Mansvelder-Longayroux et al., 2007; Olson & Craig, 2001; Woo & Henriksen, 2023). In the PAR study, the high level of collaboration of CPR members helped to

build teacher agency. As the team worked together, they were more willing to discuss their current practices, rethink teaching and learning, think about ways to change their practices, and actually change their teaching. “Every experience was a moving force” in the growth of the team (Dewey, 1963). Therefore, the experience was an iterative, not a linear, process. In the Ahn et al. (2021) study of co-designing and using digital tools, as participants gained trust, they were more transparent and de-privatized their practices. By using "in the moment" data – street or pragmatic data, we circumvented the issues of data use associated with accountability in school reform efforts.

> Data use in schools, as a fundamentally social process, influences relationships and dynamics among educators (e.g., teachers, instructional coaches, principals, etc.). Key factors such as information ownership, hierarchy, and purpose of data use might make or break systems for data-driven decision-making in a K-12 school. A culture of compliance – where data is collected at the school but used at the district or state level – might damage trust between teachers and other stakeholders, hamper schools' ability to change instructional delivery, and even shape the focus teachers have when approaching learning data. (Ahn et al., 2021, p. 56)

Our data was our data and used for our purposes to share, analyze, and collaborate to improve learning for students. More use of these kinds of data in school reform efforts could enhance teacher willingness to engage in more authentic data conversations that lead to their choices about pedagogical practices. We could and should change the typical district data flow from a top-down study to bottom up and use *in situ* data that can inform practice (as represented by the graphic in Figure 21 from Ahn et al., 2021). As principal, I operated as the coach in these conversations, listening to teachers first and then using the classroom data and interactions with



Note. (Ahn et al., 2021, p. 57).

Figure 21. Data flow among districts, schools, teachers, and students.

students to have conversations about shifts in practice, and we kept our data internal to our school so that we could use data for our purposes to improve instruction.

In the CPR, the members used pedagogically productive talk focused on the problem of practice and pedagogical reasoning to anchor conversations to rich representations of practice, share multiple perspectives, and provide support and feedback (Lefstein & Snell, 2011). Using the same processes we expected in the classroom, they practiced accountable talk in the CPR group (McKeown & Beck, 2015). The process of collaborating to co-construct knowledge and tools provided teachers with a chance to learn from their colleagues and provided a way for them to co-generate data for making changes that were useful to them (Hale, 2008).

Teacher agency is "constructed, re-constructed, and realized in dynamic interactions between teachers and their working environments" (Pyhältö et al., 2015). During the PAR process, members had a voice in how the team moved forward in each meeting and with each activity. As members shared their thoughts and ideas, I analyzed evidence from each meeting and then classroom observations, using that information to plan the next steps. The team members' input heavily influenced what transpired at the next meeting. Teacher empowerment gave members the autonomy to reflect on their current teaching practices and enact change. To have dynamic interaction, we relied on the CLE axioms during the participatory action research project to underscore how to rely on those closest to the situation to collaborate to learn and then act.

Based on the importance of principal actions to foster a productive learning environment for teachers, teachers as co-learners assumed increasing responsibility for their actions and supported each other to change. As I engaged them in instructionally focused interactions and facilitated productive collaboration and networked improvement communities, we co-

constructed a productive classroom experience for students, and teachers shifted their pedagogical practices.

Framework for Influencing Teacher Shifts

The PAR study focused on how teachers changed, and I produced a framework that outlines our research journey and findings (see Figure 22). The framework places equal emphasis on both findings as they are interrelated and interconnected. As teachers shifted their thinking about inquiry-based learning through experiencing inquiry as learners, they changed their teaching practices. By creating a cycle of praxis, the teachers engaged in critical reflection to act on their values of equitable classroom practices. They used pedagogically productive talk or accountable talk (McKeown & Beck, 2015), were involved in pedagogical reasoning, anchored conversations to rich representations of practice, shared multiple perspectives, and provided support and feedback (Lefstein & Snell, 2011). As IECHS teachers experienced learning as inquiry learners, they transferred learning to classroom practice, reflected on implementation, and made decisions to implement inquiry with greater skill. In doing so, teachers increased self-confidence and capacity to implement inquiry-based learning experiences.

Research Questions

In the research study, we examined this overarching question: How do teachers design and implement inquiry-based learning experiences that foster student agency? I explored the following sub-questions:

1. To what extent do teachers collaborate to design learning experiences that embed inquiry-based instruction?
2. To what extent do teachers implement learning experiences that promote inquiry?

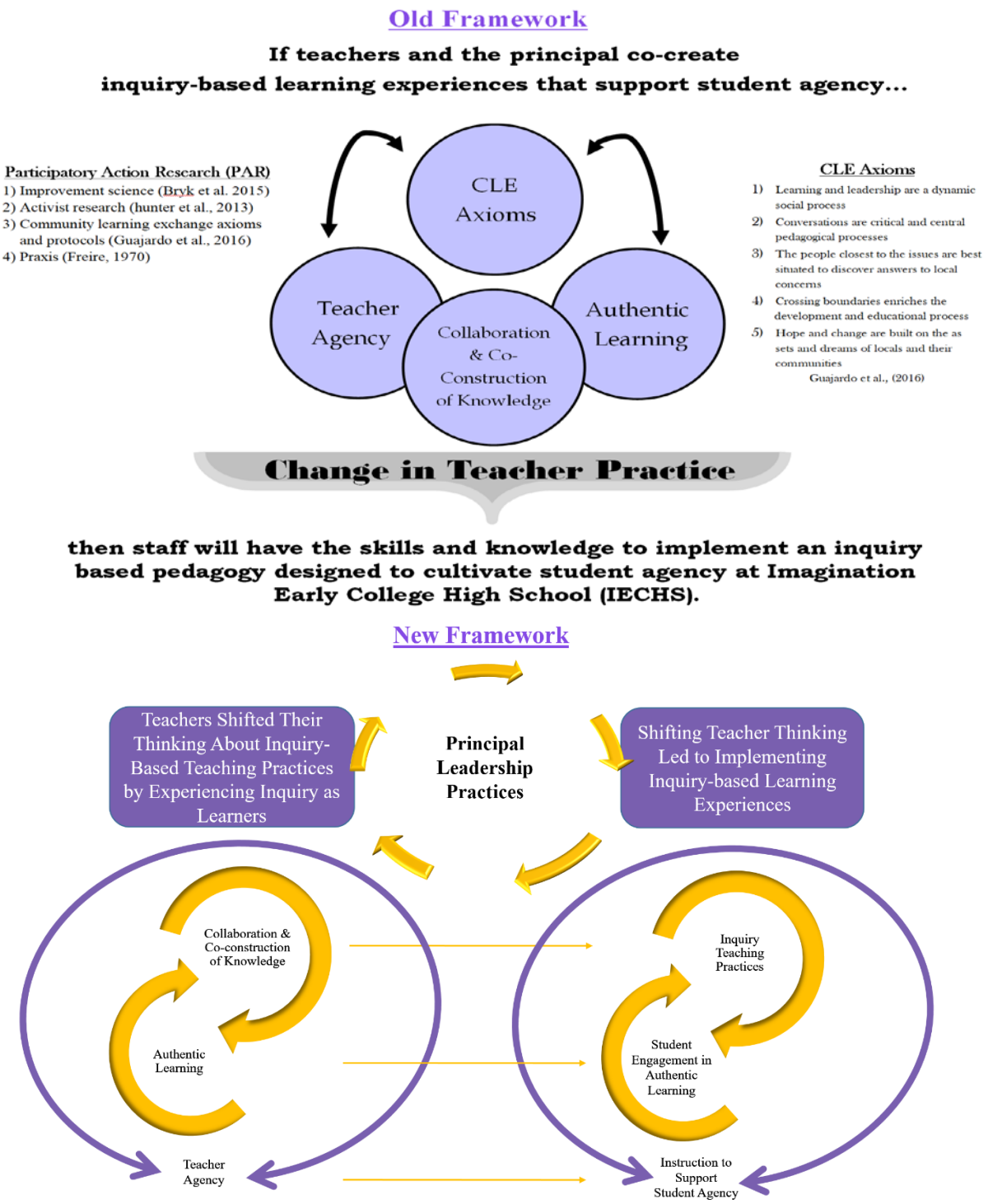


Figure 22. The original framework was a linear design and the revised framework indicates the complex intersection of learning and acting that the CPR experienced.

3. How does the process of collaborating with teachers affect my development as an instructional leader?

Overarching Question

The overarching question for the PAR study was: How do teachers design and implement inquiry-based learning experiences that foster student agency? In responding to the question, I reviewed the CPR and coaching meetings design, team members' engagement in meetings, inquiry-based observations and coaching conversation meetings, and transfer of practices to the classrooms.

All CPR team meetings and CLEs included dynamic mindfulness, a personal narrative, inquiry-based protocols, and a closing circle. These structures provided members with opportunities to center themselves on the work, time to learn about one another, opportunities to discuss their thinking, and time for reflection. My goal was to provide members with greater independence and autonomy levels in their learning (Bredeson, 2000). As I facilitated the first CPR meeting, I modeled the inquiry process for team members. I felt team members needed to hear, see, and feel the inquiry process.

One of the tasks during the first meeting was for team members to co-construct working agreements. The team had autonomy as they created the agreements, which guided them for the next fourteen months. At the end of the meeting, team members shared they enjoyed the meeting and being able to create the working agreements. Reflecting on the positive outcome after the meeting, I decided to model inquiry for every CPR, CLE, and coaching meeting during the PAR process. In my reflective memo from November 5, 2022, I stated, "My hope is to use a variety of protocols to capture teacher's voice regarding the given topic of each meeting." This decision proved valuable as team members shared in the last CPR meeting by rating what influenced their

learning the most; their highest levels of learning occurred through modeling inquiry in the coaching conversations.

Sub-Research Questions

The sub-research questions addressed how the CPR team members collaborated, co-designed inquiry-based learning experiences, and implemented learning experiences that promoted inquiry. The team members described the experiences of collaborating to design the coaching tool as exciting and empowering. Each CPR meeting provided the team with multiple opportunities to collaborate. Examples of collaboration included designing the team's working agreements, creating a standard definition of inquiry, developing student and teacher attributes for inquiry, and creating the coaching tool. I frequently coded the category of collaboration and co-constructing of knowledge from the artifacts. Team members mention this category forty-six times throughout the PAR process.

During the PAR cycles, the team developed a strong sense of efficacy. Teacher efficacy fostered a high level of motivation and developed an intrinsic interest in inquiry (Bandura & Schunk, 1981). Team members took away strategies from the CPR meetings and CLEs and began implementing them in their classrooms early in the school year. The teachers shared they implemented Jamboards, gallery walks, students generating their own questions, mindfulness, and students creating rubrics. One team member stated in a personal narrative on September 16, 2022, "my teaching has grown because I am constantly thinking about the language that we have discussed while creating the coaching tool."

The responses to the research questions and the findings inform the implications. If teachers have experiences in inquiry-based instruction and principals conduct observations and

use data to coach teachers, then teachers implement inquiry-based lessons in their classrooms. That critical process informs the implications for practice, policy, and research.

Implications

The results of this study support current research that recognizes the importance of the principal collaborating with teachers to change instruction (Grissom et al., 2021a). As a result, the study, although small, has implications for practice, policy, and future research. As teachers experience new routines and teaching practices, they "experience greater success and efficacy than they did in the past" (Yurkofsky et al., 2020) and are willing to engage in cycles of inquiry and continuous and incremental improvement. My decision to use participatory action research (PAR) to collaborate with the CPR team as a mechanism for change was effective. In the PAR process of collaborating with a co-practitioner research group, team members approached educational changes creatively (Wong et al., 2021). As the team members experienced inquiry, they shifted their thinking about teaching and learning for their students. The team members developed a sense of efficacy in making changes in their teaching practices, and ultimately they changed their practices. The results of this study could have implications for ways to change teaching practices in other settings by using an iterative inquiry process built on teacher understanding and experience in the intended classroom outcomes, a step we often omit in professional learning for teachers.

Practice

Every member of the CPR team indicated at the end of the study that they had grown because they participated in the study. Through the study, team members became motivated to implement inquiry-based teaching practices, and as they reflected on their work, they became more familiar with a different way of thinking (Yurkofsky et al., 2020). As a result, each team

member increased his or her individual capacity to implement inquiry in their classrooms. For example, team member 2 shared during the closing circle in the last CPR meeting that they felt fortunate to be part of the team because they had time to think through inquiry, to restructure teaching to offer more opportunities for students to lead their learning, and to grow in their ability to implement new teaching practices. This member's growth was the most significant because at the beginning of the study, the member did not feel like an equal team member due to others being able to process information faster than they could. The member shared that the longer they participated in the meetings, the better they felt about providing value through the process.

Teacher learning and implementation of inquiry did not stop with the study. For example, team member 4 recently engaged students in an inquiry lesson in which they generated research questions after reading the novel *Knight*. Students created these questions:

- How do people maintain their faith in situations of oppression? Do they maintain this based on their deep culture?
- How do authors adapt rhetoric to hostile audiences?
- Why do some groups “other”? How easy is it to internalize “othering”?
- How would survivors respond to monuments being mistreated?
- What was going on in Hitler’s mind while doing these actions?
- How do we keep faith in times of oppression?
- How has the Holocaust reconstructed the identity of the Jews?
- How might someone who is not religious have reacted during the Holocaust? Would they become religious or move future away from faith?

The level of questions were deep and meaningful to the students. As a result, the students had a high level of engagement in the writing process because they had discussed important ideas that they generated.

The CPR meetings and CLEs provided the team with a focused space to collaborate in authentic learning experiences to grow their understanding of inquiry-based teaching and learning. The process of engaging in inquiry during these meetings empowered members to change roles from teacher to learner. I purposefully engaged team members in the continuous process of learning and discovering – the parallel processes that are useful for classrooms that foster inquiry (Terehoff, 2002). I utilized the same experiences for teachers that students need in an inquiry-based classroom. As a learner, each member engaged in learning about inquiry, developing an understanding of how inquiry facilitates a higher level of learning and engagement than traditional teaching methods. As I collected data from the first CPR meeting, I saw the team grow through engaging in inquiry. During the first CPR team meeting, I realized that authentic learning was taking place. Therefore, I structured all CPR and CLE meetings to use protocols that provided opportunities for equitable participation.

The PAR project and study affected teacher practice at our high school, and other teachers in other schools could use the same processes. However, this essential step in the teacher learning process cannot be shortened or overlooked: Teachers need experiences in the same kind of learning that we expect them to use with students (Dewey, 1963). Before this study, we focused professional development at IECHS on getting as much information to teachers as possible with limited teachers engagement. Now, the instructional coach and I reflect on implementing professional development to ensure teachers fully engage in the learning process. Team members shared they were more likely to implement inquiry in their classrooms because

they felt empowered to learn through inquiry. This realization from the team indicates that being immersed in the learning process supports growth and change in practice. From the study, I learned that participating in inquiry led to teachers implementing inquiry in the classroom.

Policy

As the study finding indicates, teachers change practices by first experiencing learning in the same ways that we want teachers to use in the classroom. Too often, state and district leaders lace teacher professional development with sit-and-get lecture-style teaching that has little impact on the outcomes in the classroom. Similarly, in our professional learning environments, we have historically used presentation and banking methods (Freire, 1970). Instead of budgeting large sums of money to outside facilitators, we need to allocate resources to preparing school leaders to work more systematically with teachers in their buildings (Schneider & Berkshire, 2020). As the Grissom et al. (2021b) recommendations indicate, principals need to recruit, develop, support, and retain a talented teaching staff and create conditions for them to deliver strong instruction. That means local professional learning based on evidence from teachers' classrooms in the school; that is rarely a structure that districts consider for the policy decisions about professional development.

Hence, districts need to rethink differentiated professional learning to meet the needs of individual teachers and schools. The observation and coaching tool allowed for differentiated conversations with teachers (Tredway & Militello, 2023; Tredway et al., 2019). Therefore, providing a different approach to professional learning by reallocating resources for professional development decisions to the local level is a policy decision for school districts that could change how teachers learn and how principals lead. The results of this study could inform decisions

about professional learning within the district, other Early Colleges in the Cooperative Innovative High School Network in NC, and other schools across the nation.

As principals set the vision for good instruction, they "establish learning as the core of their practice, and they set the tone, direction, and expectations for learning in the school" (Bredeson, 2000, p. 392). If school leaders want to change how teachers teach, they must provide teachers with opportunities to become learners. As school leaders implement professional development, they should create opportunities for teacher learning that allows teachers to take responsibility for carrying out their learning (Terehoff, 2002). This can be done through developing professional development that includes protocols, the axioms from community learning exchanges, and opportunities for teachers to be engaged learners of the new content contained within the professional development.

District, state, and national leaders can use this research to move schools away from a one size fits all approach to teaching and learning. The results from this study provide evidence that collaboration and co-construction of inquiry-based learning experiences change teacher practices.

Future Research

The PAR study provides data for understanding a crucial strategy for shifting teacher thinking about inquiry-based teaching practices and changing teachers' ability and determination to implement inquiry-based teaching practices in the classroom. Participatory action research is not only for academic researchers but is a tool for researchers collaborating deeply with the persons fully engaged in practice (hunter et al., 2013; Kemmis et al., 2014). As a result, the participants of any research project engaged in critical reflection can provide substantial data to make changes in schooling. While this study yielded a change in teacher practice, there may not

be changes in teacher practice in other contexts. Researchers interested in changing teacher practice should conduct further research to understand how teachers change practices through their professional learning experiences. To understand if shifting teacher thinking in other areas influences their classroom implementation, researchers should conduct research specific to the areas of change desired. The proposed research question is: How does shifting teacher thinking through modeling impact their classroom implementation?

Limitations

As I conducted the study, I realized the two specific limitations of the study. The first limitation is the number of observations I conducted, and the second limitation is the size of the study.

The CPR team developed the IECHS Inquiry-based Coaching Tool over several months. During that time, I could not conduct as many observations as I had planned. Therefore, the number of inquiry-based observations was relatively low. I needed to conduct more observations to truly analyze the impact of implementing classroom practices. I saw changes in the classrooms with the number of observations conducted, but with additional observations, the data could lead to a more robust measure of change.

The PAR study included a small number of participants (n=5). Due to the study size, other educators may not generalize the results in their settings. However, in any school, thinking about changing practices, starting with a small group of teachers who are invested in the process and can become ambassadors for change, is useful. What others can generalize is the PAR study form of research and how educational leaders can apply the process in other schools. Participatory action research (PAR) is a style of research other educational leaders can conduct in any educational setting. Educational leaders can work with internal staff to make

improvements because this staff has a stake in teaching and learning. During the research process, educational leaders can ensure participants have a high level of participation (Herr & Anderson, 2015). This level of involvement between educational leaders and staff can allow change to take place.

While this research study was small, we developed key insights into how teachers shift thinking and teaching practice. Principals look for new methods for providing teachers with professional development that will positively affect teaching practices. Engaging teachers to collaborate, experience agency in decision-making, and engage in authentic learning produced positive results for IECHS. Some of the strategies from this study may provide other educators with ideas on how to transform teaching and learning. Finally, I discuss how I changed as a leader by providing compassion in action, supporting teacher agency, and harnessing my agency.

Impact on My Leadership

As I engaged in the PAR study over the past fourteen months, I recognized that I had become a more decisive leader who listens to the staff by focusing on their thoughts and ideas to drive the direction of our reform efforts. I have become more compassionate toward the team, increased teacher agency at IECHS, and had personal growth over time.

Compassion in Action

Not all teachers learn the same; changing their teaching practices takes time. Just like students need a teacher who is understanding, compassionate, and flexible, teachers need a leader who has the same qualities. As I started this journey with the CPR team, one team member frustrated me because the member could not engage in the learning process as quickly as the other members. In several meetings, this member struggled to understand inquiry and the attributes associated with inquiry. Other team members understood quickly, which increased my

frustration. I created a timeline for learning in my mind and became frustrated when that teacher's timeline did not match mine.

I recognized my frustration and took time to reflect on why I felt that way and what steps I needed to take to be more understanding, compassionate, and flexible. As I reflected, I knew I could not allow my frustrations to take over. By relating the team member's learning to that of students, I changed my paradigm. Teachers, like students, have a zone of proximal development (Vygotsky, 1978); they have different readiness because of their prior knowledge and lived experiences as well as the different ways that brains work in the learning process (Hammond, 2015). By shifting my paradigm from thinking of this team member as a teacher to thinking of them as a learner, I had more compassion for this team member's learning pace, style, and preference. During the middle of PAR Cycle One, I reflected on how I supported this team member to help with their understanding of inquiry. In a reflective memo I wrote:

> Team member two struggled to understand what should be put into the student attribute section. The member's partner was very patient with him, but I could tell they wanted to move forward, and team member two was stuck on developing a complete understanding of every aspect of each student attribute on the tool. The information did not seem to come naturally. They asked many questions and needed constant clarification. In watching this process unfold, I decided to have one of the other team members help the student attribute team. I felt the member's partner needed support to get member two to move forward. Team member two might have needed someone else to explain the information differently. I asked another team member if they could help. This seemed to provide the necessary support for the team to move forward.

Instead of being frustrated, I differentiated the learning experiences for this member and provided alternate ways for this team member to learn and grow. I slowed down so this member could have sufficient time to process and participate – in other words, sufficient time to learn. I became more patient and constructed strategies for learning in public. In time, the team member acknowledged the slower learning pace but gained an understanding of inquiry. The member reflected at the end of the PAR study on October 11, 2022:

> There were moments when we were working as a team that I felt ill-equipped to be a part of this team because it always takes me a little longer to process and think through. But I think what I can provide as we move forward is more concrete ideas.

As a result of the experience of facilitating, I was a bridge in the team members learning. I saw a need for support, provided appropriate strategies to facilitate growth, and ensured that learning transpired. By modeling differentiated learning for teacher learning, I learned compassion in action.

What is most interesting about the situation with this team member is that it directly mirrors my learning in the doctoral program. When I started the doctoral journey, I felt ill-equipped to participate in the program. I was surrounded by people I believed to be more intelligent educators who could articulate their learning eloquently. On the other hand, I needed more time to process the information. However, by the end of my study, I felt equally intelligent and able to articulate my learning. That took a deep level of learning, a supportive environment, and time to gain confidence in my ability to contribute to the doctoral program productively. The things that frustrated me about the team member who struggled were the same things that I was simultaneously experiencing; I just failed to realize that until later. The support of other doctoral candidates and my Project I⁴ coach helped me see myself as an equal in the learning process. The

level of support educators receive can make or break their education journey. I am glad I had support and that I could translate my support into support for my team.

By leading my team during COVID-19, all educators had to rethink education due to moving to teach online. However, this was not the only challenge. Many of my staff, including myself, got COVID or suffered challenges due to COVID. In May 2021, I suffered from burnout, which resulted in migraine-associated vertigo. For six months, I struggled with cognition issues like decreased mental processing, slow speech, and delayed work speed. This change in my ability to work was very hard for me as I am a "type A" leader who is always looking for the next task. During this time, I reflected on the demands of education and how these demands lead to burnout. I became more compassionate and sensitive to the stress placed on my teachers and took measures to minimize stress. For example, I slowed down the pace with the CPR team. Instead of trying to work hard and go fast to complete the IECHS Inquiry-based Coaching Tool, I watched and listened to my team. I used their input and moved at a pace that worked for them.

Fostering Teacher Agency

Initially, I thought I would spend most of my time observing the CPR team and participating in coaching conversations. However, as I watched the team collaborate to create the IECHS Inquiry-based Coaching Tool, I understood the importance of slowing down and allowing the team to work at its own pace. One of the proudest moments I had during the PAR study was watching the CPR team create the IECHS Inquiry-based Coaching Tool. The level of collaboration was high, and the team members were engaged and excited while creating the tool. The team knew they owned the process and were creating something meaningful for the students and staff at IECHS. As I utilized the PAR process, I stepped back from being the leader, instead fostering teacher agency and giving team members ownership.

As I created agendas for each CPR meeting and CLE, I took time to ensure multiple opportunities for members to ensure participant voice and choice throughout the meeting. I wanted the team to own their work and take pride in what they were creating. The process of providing teachers agency meant I had to release control. Because I trusted the team members and understood the participatory action research process, I was comfortable with sharing the power of decisions (Suarez & Toro, 2018). I decided not to follow a set course but to determine where we were going iteratively by paying attention to sightings (McDonald, 1996) to let team readiness and interest drive the meetings and learning. The ability to facilitate opportunities for teachers to build agency proved to be valuable in being able to enact change.

Once I began using the IECHS Inquiry-based Coaching Tool, I became nervous. I was worried because I did not create the tool and was not entirely sure of the exact way to use the tool. I had questions like:

1. How would I use the tool to meet the team's needs?
2. Did I capture enough data and evidence during the observation?
3. Am I asking the right questions for the coaching conversations?

The uncertainty of the answers to these questions caused anxiety. I typically want to have all the answers and be able to provide staff with accurate information promptly. However, I was unsure in this situation and needed to rely on the team members for clarity. I spoke to one team member about the tool and reviewed what I thought the team desired. During our meeting, we examined the coaching questions to ensure I would ask the right questions that would allow the teachers to drive the discussion. The meeting with the team member allowed me to step back and let the staff lead. The questions we created proved helpful for the teachers as each teacher shared that the coaching conversation enabled them to reflect on their lesson.

Personal Growth

As I have worked through the PAR process, I have seen my agency and personal growth as a leader fluctuate and then deepen. I value working at IECHS and being able to have the freedom to make decisions about how we plan and implement. The work we do is different from other schools in the district.

In the doctoral journey, I gained confidence in myself as a leader. This confidence has garnered a high level of agency over my decisions at IECHS. I do not think about education the same way I did before; I now think about education more globally. I see education as a tool to provide both teachers and students with agency in their lives. Therefore, I structure decisions for the school not just based on what the district tells me to do but on what is best for our context. My increased confidence was a factor in making impactful decisions that empowered staff and students. I am confident that my team and I have made and will continue to make the right decisions.

I have gained confidence in myself. I see myself as someone with big ideas and a passion for driving those ideas to life. Growing up, I often heard the word stupid, which stuck with me most of my life. My self-confidence has always been lacking until now. The doctoral journey gave me a new word, confidence. I now have the confidence to express myself, share my thoughts and ideas, and be in a group without fear of the word stupid arising. The guidance and support from my Project I⁴ coach have empowered me to think about myself confidently as a change agent. The words we heard in the past do not always have to be what we hear now!

Conclusion

My doctoral journey has been invigorating for the school and myself. I am passionate about leaving this world better than I found it and teaching others to do the same. This

dissertation provided the foundation to enact change at IECHS – a change that will help teachers and, hopefully, students leave the world better than they found it. Education cannot be about the memorization of facts and passing tests. Instead, authentic education experiences must be coupled with the necessary tools support teachers and student growth. As a result, they can all be the best versions of themselves.

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APPENDIX A: IRB APPROVAL

PITT COUNTY SCHOOLS

James, Jennifer <jamesj@pitt.k12.nc.us>

RX: Your Exempt study has been approved

1 message

umcirb@ecu.edu <umcirb@ecu.edu> Tue, Sep 21, 2021 at 7:04 AM
Reply-To: umcirb@ecu.edu
To: jamesj@pitt.k12.nc.us

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 · rede.ecu.edu/umcirb/

Notification of Exempt Certification

From:	Social/Behavioral IRB
To:	Jennifer James
CC:	Matthew Militello
Date:	9/21/2021
Re:	UMCIRB 21-001648 Leave this place better than you found it

I am pleased to inform you that your research submission has been certified as exempt on 9/20/2021. This study is eligible for Exempt Certification under category # 1 & 2ab.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

Document	Description
CALL Survey Protocol (0.01)	Surveys and Questionnaires

For research studies where a waiver or alteration of HIPAA Authorization has been approved, the IRB states that each of the waiver criteria in 45 CFR 164.512(i)(1)(i)(A) and (2)(i) through (v) have been met. Additionally, the elements of PHI to be collected as described in Items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

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

IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418
IRB00003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000418

—

Study.PI Name:
Study.Co-Investigators:

APPENDIX B: CITI TRAINING CERTIFICATE

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Jennifer James (ID: 9719714)
- **Institution Affiliation:** East Carolina University (ID: 316)
- **Institution Email:** jamesj94@students.ecu.edu
- **Institution Unit:** Educational Leadership
- **Phone:** 252.737.3860

- **Curriculum Group:** Human Research
- **Course Learner Group:** Group 2.Social / Behavioral Research Investigators and Key Personnel
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 40069217
- **Completion Date:** 07-Jan-2021
- **Expiration Date:** 07-Jan-2024
- **Minimum Passing:** 70
- **Reported Score*:** 97

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Belmont Report and Its Principles (ID: 1127)	21-Dec-2020	3/3 (100%)
History and Ethical Principles - SBE (ID: 490)	05-Jan-2021	4/5 (80%)
Defining Research with Human Subjects - SBE (ID: 491)	05-Jan-2021	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	05-Jan-2021	5/5 (100%)
Assessing Risk - SBE (ID: 503)	06-Jan-2021	5/5 (100%)
Informed Consent - SBE (ID: 504)	06-Jan-2021	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	06-Jan-2021	5/5 (100%)
Research with Prisoners - SBE (ID: 506)	06-Jan-2021	5/5 (100%)
Research with Children - SBE (ID: 507)	06-Jan-2021	4/5 (80%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	07-Jan-2021	5/5 (100%)
International Research - SBE (ID: 509)	07-Jan-2021	5/5 (100%)
Internet-Based Research - SBE (ID: 510)	07-Jan-2021	5/5 (100%)
Vulnerable Subjects - Research Involving Workers/Employees (ID: 483)	07-Jan-2021	4/4 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?k637d3437-2700-4836-a093-dd989e082a10-40069217

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

** NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Jennifer James (ID: 9719714)
- **Institution Affiliation:** East Carolina University (ID: 316)
- **Institution Email:** jamesj94@students.ecu.edu
- **Institution Unit:** Educational Leadership
- **Phone:** 252.737.3860

- **Curriculum Group:** Human Research
- **Course Learner Group:** Group 2.Social / Behavioral Research Investigators and Key Personnel
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 40069217
- **Report Date:** 07-Jan-2021
- **Current Score**:** 97

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Defining Research with Human Subjects - SBE (ID: 491)	05-Jan-2021	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	05-Jan-2021	5/5 (100%)
Belmont Report and Its Principles (ID: 1127)	21-Dec-2020	3/3 (100%)
Assessing Risk - SBE (ID: 503)	06-Jan-2021	5/5 (100%)
Informed Consent - SBE (ID: 504)	06-Jan-2021	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	06-Jan-2021	5/5 (100%)
Research with Prisoners - SBE (ID: 506)	06-Jan-2021	5/5 (100%)
Research with Children - SBE (ID: 507)	06-Jan-2021	4/5 (80%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	07-Jan-2021	5/5 (100%)
International Research - SBE (ID: 509)	07-Jan-2021	5/5 (100%)
Internet-Based Research - SBE (ID: 510)	07-Jan-2021	5/5 (100%)
History and Ethical Principles - SBE (ID: 490)	05-Jan-2021	4/5 (80%)
Vulnerable Subjects - Research Involving Workers/Employees (ID: 483)	07-Jan-2021	4/4 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?k637d3437-2700-4836-a093-dd989e082a10-40069217

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

APPENDIX C: SCHOOL AND DISTRICT PERMISSION

Pitt County Schools

Dr. Ethan Lenker, Ed.D., Superintendent
1717 West Fifth Street
Greenville, North Carolina 27834
http://www.pitt.k12.nc.us

June 9, 2021

To Whom It May Concern:

Pitt County Schools recognizes the benefits of participating in relevant, well-designed research studies proposed by qualified individuals. Approval for conducting such studies is based primarily on the extent to which substantial benefits can be shown for Pitt County Schools and its mission of educating students. The purpose of this letter is to notify you of the approval to conduct your dissertation research with participants in your school on the inquiry: How can teachers and a principal collaborate to fully incorporate inquiry-based learning experiences that foster student agency? We also give permission to utilize spaces at Innovation Early College High School to collect data and conduct interviews for this dissertation project.

The project meets all of our school/district guidelines, procedures, and safeguards for conducting research on our campus. Moreover, there is ample space for Jennifer James to conduct her study and her project will not interfere with any functions of Innovation Early College High School. Finally, the following conditions must be met, as agreed upon by the researchers and Pitt County Schools:

- Participant data only includes information captured from the state data collection strategies.
- Participation is voluntary.
- Participants can choose to leave the study without penalty at any time.
- Any issues with participation in the study are reported to the school administration in a timely manner.
- An executive summary of your findings is shared with the school administration once the study is complete.

In addition to these conditions, the study must follow all of the East Carolina University IRB guidelines.

We are excited to support this important work.

Respectfully,

Dr. Ethan Lenker
Superintendent, Pitt County Schools

APPENDIX D: CONSENT FORM - ADULTS

Informed Consent to Participate in Research

Information to consider before taking part in research that has no more than minimal risk.

Title of Research Study: Inquiry-based instruction increasing student agency for students at

Innovation Early College High School

Principal Investigator: Jennifer L. James
Institution, Department or Division: East Carolina University, Department of Educational Leadership
Address: 402 West Washington Street, PO Box 1227, Bethel, NC 27812
Telephone #: 1.252.341.5813
Study Coordinator: Dr. Matthew Militello
Telephone #: 252-328-6131

Researchers at East Carolina University (ECU) study issues related to society, health problems, environmental problems, behavior problems and the human condition. To do this, we need the help of volunteers who are willing to take part in research.

Why am I being invited to take part in this research?

The purpose of this participatory action research (PAR) project is to develop inquiry-based instruction learning experiences that will increase student agency for students at Imagination Early College High School (IECHS). You are being invited to take part in this research because you are a teacher at IECHS who is knowledgeable of inquiry-based instruction. The decision to take part in this research is yours to make. By doing this research, we hope to develop inquiry-based learning experiences that foster student agency and to provide professional development for other IECHS staff.

Are there reasons I should not take part in this research?

There are no known reasons for why you should not participate in this research study.

What other choices do I have if I do not take part in this research?

You can choose not to participate.

Where is the research going to take place and how long will it last?

The research will be conducted at Imagination Early College High School in Greenville, North Carolina. The total amount of time you will be asked to volunteer for this study is approximately twelve-hours over the next eighteen months

What will I be asked to do?

If you agree to participate in this study, you may be asked to 1) participate in meetings/interviews to develop inquiry-based instructional practices, 2) participate in observations while implementing inquiry-based instructional practices, 3) participate in creating and providing professional development to other IECHS staff members, 4) participate in the Project I⁴ CALL Survey (Comprehensive Assessment of Leadership). The interviews or observation may be recorded in addition to handwritten notes to be taken by the research team members. All of the interview questions will focus on the development and implementation of inquiry-based instructional practices and learning experiences. The CALL Survey is an anonymous survey, so your identity will not be known.

What might I experience if I take part in the research?

We don't know of any risks (the chance of harm) associated with this research. Any risks that may occur with this research are no more than what you would experience in everyday life. We don't know if you will benefit from taking part in this study. There may not be any personal benefit to you, but the information gained by doing this research may help others in the future.

Will I be paid for taking part in this research?

We will not be able to pay you for the time you volunteer while being in this study

Will it cost me to take part in this research?

It will not cost you any money to be part of the research.

Who will know that I took part in this research and learn personal information about me?

ECU and the people and organizations listed below may know that you took part in this research and may see information about you that is normally kept private. With your permission, these people may use your private information to do this research:

- Any agency of the federal, state, or local government that regulates human research. This includes the Department of Health and Human Services (DHHS), the North Carolina Department of Health, and the Office for Human Research Protections.

- The University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your welfare during this research and may need to see research records that identify you.

How will you keep the information you collect about me secure? How long will you keep it?

The information in the study will be kept confidential to the full extent allowed by law. Confidentiality will be maintained throughout the data collection and data analysis process. Consent forms and data from surveys, interviews, and focus groups will be maintained in a secure, locked office and will be stored for a minimum of three years after completion of the study. Video tapes will be transcribed, coded, and then erased. All electronic data sources will be stored on a secure Pirate Drive. No reference will be made in oral or written reports that could link you to the study.

What if I decide I don't want to continue in this research?

You can stop at any time after it has already started. There will be no consequences if you stop and you will not be criticized. You will not lose any benefits that you normally receive.

Who should I contact if I have questions?

The people conducting this study will be able to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator at phone number 252.737.3860 (weekdays, 9:00 am – 4:00 pm) or email jamesj94@students.ecu.edu.

If you have questions about your rights as someone taking part in research, you may call the University & Medical Center Institutional Review Board (UMCIRB) at phone number 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director for Human Research Protections, at 252-744-2914.

I have decided I want to take part in this research. What should I do now?

The person obtaining informed consent will ask you to read the following and if you agree, you should sign this form:

- I have read (or had read to me) all of the above information.
- I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.
- I know that I can stop taking part in this study at any time.
- By signing this informed consent form, I am not giving up any of my rights.
- I have been given a copy of this consent document, and it is mine to keep.

_____

Participant's Name (PRINT) Signature Date

Person Obtaining Informed Consent: I have conducted the initial informed consent process. I have orally reviewed the contents of the consent document with the person who has signed above and answered all of the person's questions about the research.

_____

Person Obtaining Consent (PRINT) Signature Date

APPENDIX E: DATA COLLECTION INSTRUMENT: PROTOCOL FOR COMMUNITY LEARNING EXCHANGE (CLE) ARTIFACTS

Each semester for the duration of the participatory action research study, the researcher will host a Community Learning Exchange on a topic related to the research questions in the participatory action research (PAR) project. At the CLE, the researcher will collect and analyze artifacts that respond to the specific questions listed below. The researcher will collect qualitative data based on the activities in which the participants engage at the CLE. The data will be in the form of posters and notes that participants write and drawings that participants make in response to prompts related to the research questions.

Participants will include the Co-Practitioner Researchers who sign consent forms and other members of the school or district community. All information will be collected, analyzed, and reported in aggregate form without attributing responses to any individual. All responses will be anonymous and no names will be attached to individual written or visual responses.

Date of CLE

Number of Participants

Purpose of CLE

Questions for Data Collection

1. How has the IECHS Instructional Framework changed your thinking of teaching and learning?
2. How has the IECHS Instructional Framework supported your implementation of inquiry-based instruction?
3. What things are you currently doing to facilitate inquiry in your classroom?
4. How have the strategies you have learned helped you implement inquiry?
5. How do you know students are learning through an inquiry approach?

APPENDIX F: DATA COLLECTION INSTRUMENT: INTERVIEW PROTOCOL

Leave this place better than you found it: facilitating inquiry-based learning experiences

Interview Protocol

Introduction

Thank you for taking time from your busy schedules to meet with me today. I appreciate your willingness to participate in this focus group interview and will limit the time to one hour.

My name is Jennifer James. I will serve as the moderator for the interview with assistance from the school secretary who will record notes.

Disclosures:

- Your participation in the study is voluntary. It is your decision whether or not to participate and you may elect to stop participating in the interview at any time.
- The interview will be digitally recorded in order to capture a comprehensive record of our conversation. All information collected will be kept confidential. Any information collected during the session that may identify any participant will only be disclosed with your prior permission. A coding system will be used in the management and analysis of the focus group data with no names or school identifiers associated with any of the recorded discussion.
- The interview will be conducted using a semi-structured and informal format. Several questions will be asked about both the individual knowledge and skills gained and the organization practices used. It is our hope that everyone will contribute to the conversation.
- The interview will last approximately one hour.

Interview Questions

TURN RECORDER ON AND STATE THE FOLLOWING:
"This is Jennifer James, interviewing IECHS Teachers on (Date) for the Leave this place better than you found it: implementing inquiry-based learning experiences that foster student agency study.

1. What was your intended level of inquiry (versus the observed)?
2. What phase of inquiry was the class actually in?
3. What considerations did you make in planning to achieve that phase of inquiry?
4. What did you notice about the focus section you choose and the data from the rubric?
5. Do you feel you achieved what you set out to achieve? Why or why not?
6. What might it take for you to apply these strategies in the future?
7. What roadblock might get in the way?
8. What next steps do you have?
9. Where are you now in your thinking compared to where you were when you started?

APPENDIX G: DATA COLLECTION INSTRUMENT: IECHS INQUIRY COACHING TOOL

Teacher: _____ **Instructional Team Member:** _____ **Date:** _____

Disclaimer: Not every lesson should display all of the attributes of inquiry. If teachers effectively scaffold and coach student behavior, they should progress through levels of inquiry throughout the semester/year.

Please circle the phase(s) of inquiry you believe the teacher is operating under for this lesson. The lesson may utilize multiple phases of inquiry.

Levels of Inquiry: (As quoted and modified from Edutopia: Bringing Inquiry-Based Learning Into Your Class)			
Phase 1: Structured Inquiry	**Phase 2: Controlled Inquiry**	**Phase 3: Guided Inquiry**	**Phase 4: Free Inquiry**
Students follow the lead of the teacher as the entire class engages in one inquiry together	Teacher chooses topics and identifies the resources students will use to answer questions	Teacher chooses topics/questions and students design product or solution	Students choose their topics without references to any prescribed products

Selective Verbatim Notes (time-stamped descriptions of in-class events):

Categories	Role	Descriptors	Attributes	Evidence
Structures that Support Inquiry	**Teacher**	**Environment** There are routines (types of activities, class sequencing, thinking processes) that support students as they inquire.	☐ Gives students opportunities to provide and receive feedback about their work and learning ☐ Provides a variety of activities that empower students to shape their learning (including open-ended responses, student-generated questions, student-generated learning targets) ☐ Evidence of prior procedural knowledge that fosters inquiry ☐ Room-may be described as chaotic or loud, but there are clearly student-generated working agreements present. ☐ Using equitable questions strategies (structures require majority of the class to participate in discourse)	
	Student	**Environment** Students and groups can explain where they are going with project, but may be at different stages	☐ Engaged in collaborative conversations (includes total participation techniques) ☐ Participates in peer to teacher, peer to peer, or group to group feedback ☐ Learning Targets are present, and students are able to connect their findings to the learning goal/target/essential question ☐ Students construct or co-construct the overarching lesson learning targets/essential questions ☐ Journaling, rating scales, +/Delta	
	Teacher	**Language Structures** There are routines that cultivate shared academic vocabulary for all students in the classroom	☐ Provides appropriate use of sentence stems and academic and content vocabulary ☐ Model & Display ☐ Redirection via questioning ☐ Uses Growth Mindset language/asset langauge versus deficit langauge	
	Student	**Language Structures** There are routines that cultivate shared academic vocabulary for all students in the classroom	☐ Students utilize Growth Mindset language/asset rather than Fixed Mindset language/deficit ☐ Students are able to use a variety of sentence frames to build on the ideas of others, hold the floor, disagree respectfully, and pose questions to the group ☐ Students can use academic and content vocabulary to describe their own learning when asked, and explain what they are learning, and its significance in relation to their essential question/learning target ☐ Students redirect one another to encourage use of language structures	

Categories	Role	Descriptors	Attributes	Evidence
	Teacher	**Metacognition** Uses strategies and coaching to cultivate progressively more student-directed critical thinking	☐ Fosters student self-assessing and self-correcting ☐ Uses think-alouds to model how the process of feedback and reflection work ☐ Uses and reflects on student work (or mentor texts) to show different thought processes ☐ Coaches students in their thinking, reasoning, and responses to feedback	
	Student	**Metacognition** Students are taking on progressively more responsibilities by moving from teacher-led tasks to independent tasks	☐ Students can evaluate and compare strategies used by themselves and others ☐ Checkpoints, self-pacing, project planning are used to identify next steps ☐ Students are utilizing feedback	
Activities that Support Inquiry	**Teacher**	**Facilitation** In their interactions with students, the teacher assists students holistically so that students can shape the conversations and creations in the class.	☐ Empowers students through open questions and follow-up questions about their learning and thinking ☐ Teacher questioning goes beyond Remembering and Understanding ☐ Utilizes and models peer-to-peer coaching ☐ Reacts effectively in the moment to student needs by creating time to respond to whole class and individual needs ☐ Emphasize real-life connections throughout ☐ I do, We do, You do (pairs before individual, etc.)	
	Student	**Questioning/ Enhancement of Responses** Students are able to identify points of confusion and begin to craft questions to seek out clarification or support from other peers or the teacher.	☐ Students identify specific sources of confusion ☐ Students select effective responses to points of confusion ☐ Students are able to identify multiple strategies to apply to their guiding questions	

Categories	Role	Descriptors	Attributes	Evidence
Activities that Support Inquiry	**Student**	**Task Analysis** Students are able to explain and justify their reasoning for a claim or solution.	☐ Human Designed Thinking: Students can identify both assets and challenges of a given group they are trying to serve or communicate with (no "fix them" mentality) ☐ Students are creating connections between content and their own experiences, prior knowledge, and interest; students are creating text-to-world connections ☐ Students can identify the appropriate audience ☐ Students are able to evaluate multiple sources for bias, content, and reliability	
Assessments/ Results that support Inquiry	**Teacher**	**Formative** Monitor student learning to provide ongoing feedback	☐ Multiple opportunities for revision and growth ☐ Providing opportunities for peer/self-feedback (create/ apply/revise) ☐ Fosters the development of student leadership and teamwork skills to be used beyond the classroom. *Rubric for Evaluating North Carolina Teachers (all members participating)	
Assessments/ Results that support Inquiry	**Teacher**	**Summative** Evaluate student learning at the end of an activity	☐ Facilitates work such that it synthesizes the application of the academic discipline and student individual interests, beliefs, and values ☐ Observable student choice and voice in the rubric, skill acquisition, and demonstrates learning ☐ Multiple metrics (project stages are graded individually; multiple components comprise the assessment)	
	Student	**Demonstrating Mastery**	☐ Students are creating a variety of products or responses that have real-life application ☐ Products require students to explain and/or justify their reasoning ☐ Products show an understanding of given audience	

Observer: Ask About: (What is **One** area of focus in response to the data)	**Observed:** Leading To: (Post-Observation Conversation/Teacher Reflection) What was your intended level of inquiry (versus the observed)? What next steps do you have:

APPENDIX H: PAR PRE-CYCLE CODEBOOK

CATEGORY	CODE	CPR Meeting	CLE	Memos	Total
Conditions for Inquiry	Academic Discourse	1	11	3	15
	Discovery		2		2
	Questioning		5		5
	Deeper Learning		1		2
	Application of Learning		1		2
	Research	3			3
	Inquiry	2			2
	Authentic Learning	1	1		2
	SEL		1		1
	Praxis	1	3		4
Strategies for Inquiry	Social Learning		3		3
	Classroom Climate		2		2
	Kinesthetic Learning		4		4
	Collaboration		10	2	12
	Facilitation of Learning		3		3
	Protocols		4		4
	Active Learning	3	4		7
	Writing		1		1
	Evidence of Learning		4		4
	Learning Styles		1		1
	Modeling		1		1

	Data Informed Practices		2		2
	Gradual Release		1		1
	Background Knowledge		1		1
	Community Focus		1		1
Student Agency	Students Co-Constructing	3	1		4
	Student Voice		1	2	3
	Student Choice		2		2
	Student Creation	1	4		5
	Goal Setting		1		1
	Student Leadership		1		1
	Metacognition	1	2	1	4