CULTIVATING COMMUNITY TO SUPPORT NEW TEACHERS:

NAVIGATING COMPLEXITY IN A SCHOOL-UNIVERSITY PARTNERSHIP

by

ERICA LYNN GILBERTSON

(Under the Direction of Aliki I. Nicolaides)

ABSTRACT

New teachers are leaving the profession at an alarming rate. To retain them, school systems need comprehensive supports and collaborative school cultures that help teachers navigate the complexity of learning to teach. This action research study investigated the problem of new teacher turnover within a school-university partnership context. The research was guided by one overarching question: *What is learned at individual, group, and system levels that advances theory and practice in the induction phase of teacher development in a school-university partnership context?*

The purpose of the action research project was to design, implement, and evaluate programming that enhanced the school district's induction (new teacher) support program. A diverse action research team, including university faculty and school district administrators, led the study. Guided by complex adaptive system (CAS) theory and social network theory, the team collaborated with other educators to design two major interventions that were responsive to new teachers' needs during the Covid-19 pandemic. Interventions included a three-day virtual New Teacher Orientation (NTO) that built learning communities among new teachers and monthly professional learning sessions that built mentor teachers' capacity to help novices navigate the

challenges of their first year of teaching. Both interventions prioritized relationship-building among educators and provided educators with instructional and emotional support.

The study's findings show that new teachers benefited from opportunities to collaborate within group learning communities with educators who had a wide range of experiences. The study also found that school district and university partners built group social capital that resulted in innovative and impactful induction programming. Conclusions from this study suggest that educator collaboration within dense social networks must be placed at the forefront of P-12 education systems design. Social network theory-informed design can accelerate teachers' learning and growth and build their capacity to navigate systemic complexity.

The study also concluded that school-university partnerships can be powerful tools for responding to the complex challenges P-12 school systems face, including new teacher retention. Partnerships bring multiple perspectives to common problems and create joint ownership for reimagining and transforming education systems into organizations where educators and students can grow and thrive.

Keywords: action research, school-university partnership, new teachers, induction, learning community, social network theory, social capital, complexity theory, complex adaptive systems, collaboration, boundary spanning leadership, inquiry

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DEDICATION

This dissertation is dedicated to my family, friends, and professional colleagues who have supported and encouraged me throughout this incredible learning journey. I also dedicate this to all the new teachers in the world who bravely entered the teaching profession to help young people learn and grow.

To my husband, Matt, I could not have done this without you. You have always believed in me, and your unwavering support made it possible for me to follow my passion to become a researcher and change agent. Thank you for cheering me on through the highs and lows and helping me persist in reaching my goal.

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To all the mentors and colleagues who have been a part of my educational and professional journey, thank you for inspiring me be a change agent in the field of education. I especially want to thank my mentor and friend Dr. Janna Dresden for teaching me the power of collaboration and for encouraging me to pursue my doctorate.

Finally, this dissertation is dedicated to all educators who believe in the power of learning to transform lives.

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Framing the Problem

New teachers often struggle significantly during their first few years of teaching. They are commonly isolated within their own classrooms and left to "sink or swim" (Ingersoll, 2012, p. 47). They are frequently given the most challenging assignments and must learn to adjust to new school cultures, to manage their classrooms, to develop engaging lessons, to differentiate instruction, and to assess students using a variety of measures. Teachers are also underpaid compared to other professionals, while under increasing pressure to improve student outcomes on high-stakes standardized tests. In the face of these challenges, teachers are leaving the profession at alarming rates—between 40 and 50% of new teachers quit within the first five years of entry into teaching (Ingersoll, 2012, p. 47).

This concerning trend has only been exacerbated due to the impact of the Covid-19 pandemic. Although the attrition rates for novice teachers may not be known for several years, a recent RAND Corporation survey (Steiner & Woo, 2021) showed that nearly one in four teachers were expecting to leave their jobs at the end of 2020-21 as compared with one in six, which was typical before the pandemic. The survey also showed a much higher percentage of teachers reported frequent job-related stress and symptoms of depression, and the study suggested that "job-related stress poses immediate and long-term threats to teacher supply" (Steiner & Woo, 2021, p. 2). Many 2021 and 2022 news articles reported severe teacher shortages among school districts around the United States, which are correlated with the additional instructional demands

placed on teachers and Covid-19 related anxiety. Though districts have federal pandemic relief funding to hire additional staff, open positions often have no applicants (Gecker, 2021, p. 4).

At the time this dissertation is being published, many news sources are reporting that the entire U.S. public education is experiencing a crisis of epic proportions. According to Meckler (2022), "Test scores are down, and violence is up…the numbers are all going in the wrong direction. Enrollment is down. Absenteeism is up…Each phase of the pandemic brings new logistics to manage…Political battles are now a central feature of education…" (p. 1). Education systems are not designed to effectively manage multiple complex challenges, and school administrators and teachers are frequently taking the brunt of the blame. Thus, it is no surprise that educators are fleeing the profession now more than ever, which will have a major effect on the quality of education American students receive. According to Perna (2022), the fallout from teachers' burnout is predicted to include a drop in the quality of instruction with more untrained teachers filling vacancies and a drop in graduation rates as students become increasingly unengaged with school. With teachers in "survival mode" (Perna, 2022, p. 4) due to being overworked, they lose meaningful connections with their student as they "simply have no time to show students that they see, hear, and care about them" (p. 4).

High teacher turnover also contributes to the vast inequities in education for students of color in low-income communities. According to a research-based report by Carver-Thomas and Darling-Hammond (2017), turnover rates are 50% higher for teachers in Title 1 schools that serve more low-income students. For schools serving the largest concentrations of students of color, teacher turnover is 70% higher. Students of color are most likely to have teachers with the fewest years of teaching experience, the fewest years at their school sites, and the highest turnover rates at their schools. Thus, students of color who are from low-income families are the

least likely students to have access to high quality teaching. As the Alliance for Excellent Education (2014) reported, “inequities in the distribution of quality teaching lay waste to historic promises of equal education opportunity” (p. 2).

Chapter 1 Overview

The first chapter in this dissertation further frames the problem described above, describes new teacher induction programs as a response to teacher turnover, and situates the study in the relevant research literature. The first section of the literature review includes a description of the two theories informing this study, including complex adaptive systems theory (CAS) and social network theory. Empirical studies that used social network theory to examine various issues in P-12 teaching, including induction, are reviewed, and theory of change used in this study is described. The second section of the literature review includes empirical studies related to induction support in school-university partnership contexts. The chapter concludes with how this study addresses gaps in the literature, the purpose of the study and the project, and the research question.

Teacher Induction

While many new teachers leave the profession due to factors such as statewide mandates low salaries, and now the stress caused by Covid-19, many district and school-based issues also contribute to teachers’ dissatisfaction. These include lack of administrative support, isolated classrooms, student discipline problems, negative school climate, and lack of teacher influence over schoolwide decisions (Alliance for Excellent Education, 2014). Though individual districts can do little to mitigate the effects of mandated test pressures, administrators are increasingly aware that they must pay attention to the types of supports new teachers need to be successful. One result is the exponential growth of district-based teacher induction programs.

The first three years of teaching is known as the induction phase. The nation's leading researcher on the topic of induction, Richard Ingersoll, found that the number of new teachers who participate in induction programs has steadily increased from 51% in 1990-91 to 91% percent in 2007-08 (Ingersoll, 2012, p. 49). Induction programs commonly include a district-wide new teacher orientation, assigned teacher mentors who serve as coaches for one to three years, and ongoing professional learning to address common challenges among first year teachers, such as classroom management. Ingersoll (2012) examined 15 empirical studies that evaluated the effects of induction and concluded that induction has a "positive effect" (p. 51) on job satisfaction and retention. Further, his research shows that the more comprehensive the support, the better the outcomes (Ingersoll, 2012, p. 50). Teachers who participated in some kind of induction performed better at various aspects of teaching, such as maintaining a positive classroom atmosphere, and some studies showed that student achievement was higher for the students of teachers who participated in induction programs (Ingersoll, 2012, p. 51).

In his 2004 study, Ingersoll, along with his co-researcher Thomas Smith, found a strong connection between participation in induction programs and reduced rates of turnover (Smith & Ingersoll, 2004). Furthermore, they found that some induction activities were more effective than others in reducing turnover. The most important factors were "having a mentor from the same field, having common planning time with other teachers in the same subject or collaboration with other teachers on instruction, and being part of an external network of teachers" (Smith & Ingersoll, 2004, p. 706). Teachers who participated in "packages" (Smith & Ingersoll, 2004, p. 706) of mentoring and group induction activities were less likely to migrate to other schools or to leave teaching at the end of their first year. Unfortunately, Ingersoll (2012) later found that only

5% of new teachers experienced comprehensive induction in 2007-08, as many districts lack the resources to develop robust induction programming.

Further supporting Ingersoll's findings related to attrition, in a recent meta-analysis that synthesized findings from 120 studies on the factors of teacher attrition and retention, Nguyen, et al. (2019) found that beginning teachers who experience induction and/or mentoring are less likely to leave than those who do not have those opportunities. Comprehensive induction programs include opportunities for teachers to collaborate, and this meta-analysis urges educators and policy-makers to consider "creating school environments where strong administrative support, consistent teacher collaborations, and regular and meaningful professional development" (Nguyen, et al., 2019, p. 34) help keep teachers in the profession.

Teacher Turnover in Study's Context

The school district in this study, referred to with the pseudonym Atlantic County School District (ACSD) and described in detail in Chapter 3, is situated within the Southeastern United States and was grappling with how to design effective new teacher induction that prevents teacher turnover at the time of this study. Teacher turnover was increasing, and a new induction program was being developed to address the growing problem.

Less than a mile away from the district's central office is a public university, referred to with the pseudonym University of the Atlantic (UA), which has a large School of Education (SOE) that had partnered with the school district for the past decade. The partnership centered around teacher preparation with university pre-service teachers gaining clinical experience in school settings throughout their preparation, much like medical residents learn in hospital settings. According to a recent survey, 38% of first through third year teachers in the school

district received their preparation at university; however, the university did not offer systematic support to these new teachers as they transition into the profession.

The Role of Higher Education in Induction

Despite the fact that colleges and universities offer 88% of the teacher preparation programs in the United States, higher education has not traditionally been involved in new teacher induction (American Association of Colleges for Teacher Education, 2018; Hunt, 2014). This has been changing since the early 2000s, as extending university support into the first years of teaching is increasingly being called for, especially given that most districts are unable to offer comprehensive induction that can have a more impactful effect on teacher retention. Though teacher education programs are recognizing that more clinically-based experiences are needed to prepare pre-service teachers for the realities of teaching, preparation programs cannot address everything needed to become a successful teacher. As renowned induction researcher Sharon Feiman-Nemser (2001) explained, "New teachers have two jobs—they have to teach and they have to learn to teach. No matter how good a preservice program may be, there are some things that can only be learned on the job" (p. 1026).

Feiman-Nemser (2001) emphasized that learning to teach should be seen as a continuum that extends after college into the first few years of teaching and that schools and universities need to "coordinate their efforts" (p. 1037) to induct beginning teachers. She argued that building induction programs that both extend and enrich initial preparation and address the real-world experiences of teaching would "provide a forum for school and university educators to think together about the learning needs of teachers and P-12 students…(and) provide a basis for designing more powerful and coherent forms of ongoing professional development" (Feiman-Nemser, 2001, p. 1038).

At the national level, researchers and policy makers also continue to call for higher education's involvement in induction support. The New Teacher Center encourages higher education and P-12 to view teacher development as a continuum where induction is "not a stand-alone program or a unique event, but a process that is woven into the fabric of a teacher's career and a district's overall approach to supporting teaching and learning" (Goldrick, 2009, p. 6). They recommend that universities develop courses, seminars, and field experience that teacher candidates and new teachers can take advantage of from pre-service teaching through the induction period. Higher education institutions could also provide technical assistance to districts who are designing induction programs and offer an opportunity for alignment with pre-service preparation programs, among other ideas. One example of technical assistance is a comprehensive tool that schools can use to improve critical components of effective teacher induction, which Birkeland and Feiman-Nemser (2012) developed within a school-university partnership.

Other recommendations from researchers include recognizing and rewarding faculty who work with novice teachers in P-12 schools, studying the experience of new teachers in order to improve the quality of teacher preparation, and linking teachers with university resources that enhance their personal/professional learning and the learning of their students, among many others (Fulton, et al., 2005).

Many state's Departments of Education (DOE) also consider higher education institutions to be a stakeholder in induction support. For example, Georgia's DOE induction guidance says that higher education should "collaborate with school districts to design, support, and enhance the induction process" (Georgia Department of Education, 2018, p. 5). The recommendations specifically ask for higher education's involvement in the ongoing performance assessment

component of new teacher induction, including adding higher education representatives to new teachers' Induction Phase Support Teams that help new teachers develop professional learning goals. Though this is just one recommendation, higher education institutions are encouraged to become involved in the many aspects of induction programs, including mentoring, orientation, professional learning, and evaluation.

School-university partnerships called Professional Development Schools (PDS), which are described in Chapter 3, are increasingly playing a role in intensive induction support (Hunt, 2014). The PDS model is the model was used by the school-university partnership in this study, so school-university partnerships will benefit from research such as this study as induction collaborations continue to grow.

Literature Review: Complex Adaptive Systems and Social Network Theories

Theoretical frameworks are essential to action research studies because they guide the entire research process. The two theories informing this study are complex adaptive systems (CAS) theory and social network theory. Over the past decade, a growing number of education researchers use these theories to study teachers and the teaching profession. Descriptions and applications of these theories in the field of P-12 education-related research, including discussion of empirical studies, are included in the following section.

Complex Adaptive Systems (CAS) Theory in P-12 Education

The nation's leading researchers on induction claimed, "the theory behind induction holds that teaching is complex work" (Ingersoll & Strong, 2011, p. 202). Novice teachers have a "major learning agenda" (Feiman-Nemser, 2003, p. 26) that includes unending questions related to principal expectations, testing requirements, diverse learning needs, parent communication, and on and on. Considering the myriad systems and demands that new teachers must navigate in

order to become successful teachers, complexity theory has potential to serve as a useful theoretical framework for examining new teacher support, as well as partnership work related to the teaching profession.

After complexity theory gained traction as a framework applicable to organizational research, Davis and Sumara (2006) examined complexity theory in relation to education research in their book *Complexity and Education*. In the years since, many education researchers have adopted the complexity theory framework to examine the many complex inter-connected systems related to P-12 education—from classroom systems to learning systems to school systems.

Because complexity theory is broad umbrella theory open to many interpretations, I have narrowed one of the theoretical frameworks used in this study to the sub-theory called complex adaptive systems (CAS) theory. Complex adaptive systems, such as political parties and school systems, are comprised of multiple systems that inter-connect and affect one another in non-linear patterns. This theory claims these mega-systems are adaptive to changing conditions, self-organizing, and resilient when faced with perturbation.

According to McGee and Edson (2014), a CAS is composed of "many interacting, intelligent, and independent actors" (p. 139), and the complexity flows from the "density of causal connectedness" (p. 139), which manifests itself in the many nonlinear interactions among agents and issues. Within an education setting, the quality of learning is the result of the interaction among many variables, including teachers, parents, students, curriculum, school environment, technology, etc. McGee and Edson (2014) argued that a CAS adapts to changing circumstances as they occur; however, despite the fact that the U.S. public education system is a CAS, it is not governed and structured as a CAS, so it is not adaptable to changing conditions.

As a result, there are structural obstacles to ensuring equity in access to quality public education, including fiscal constraints of public schools, inadequate accountability of schools, and lack of coordination between stakeholders of P-12 education, higher education, and business, among other problems. Because the U.S. has implemented only "piecemeal policy interventions" (McGee & Edson, 2014, p. 138) without considering the whole system, it has not experienced system-wide improvement despite decades of education reforms. Understanding this larger landscape is helpful background for understanding the CAS within which new teachers are situated.

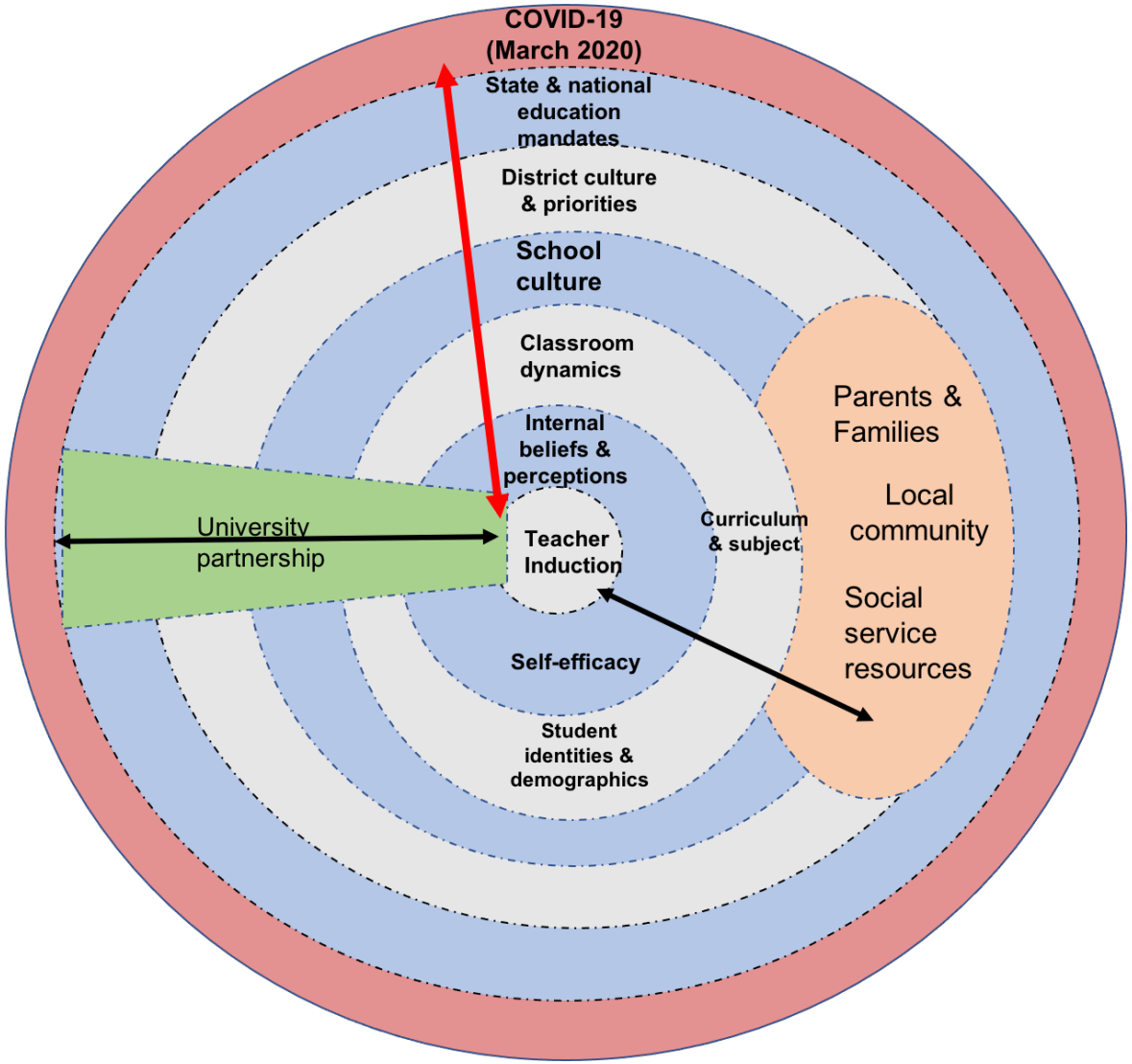
At the individual teacher level, Martin and Dismuke (2018) studied teacher development as a CAS because "teaching, learning, task activity, and social interactions are all in constant interplay" (p. 23) while also being influenced by many other complex systems, such as community contexts and national policies. As members of a CAS, teachers must continually learn to adapt and adjust to the many forces exerting influence on their lives. Burns and Knox (2011) also considered teachers' classrooms as CAS that are nested "subsystems within a whole school system, which in turn is a subsystem of a state or national educational system" (p. 7). They found that changes between variables can impact the entire system, so factors that affect teaching cannot be viewed in isolation. Using a variety of data, including classroom observations, classroom transcripts, and teacher interview data, Burns and Knox's research showed that pedagogical practices cannot be considered in isolation. A variety of factors, including institutional, pedagogical, personal, and physical factors, all influenced classroom practices to varying degrees.

Thus, when considering the types of support new teachers need, induction programming needs to take into account the CAS of teachers' classrooms as well as the larger CAS that the

profession is situated within. Complex systems are often graphically depicted as circles within circles that illustrate the “nested system” (David & Sumara, 2006, p. 6; Martin & Dismuke, 2018, p. 24) concept. Each circle represents a system, and systems are often embedded within other systems. With this is mind, I designed a visual representation of CAS theory as applied this study, as shown in Figure 1. The teacher induction program is at the center of the diagram, surrounded by layer after layer of nested systems that influence new teachers, including personal beliefs, classroom dynamics, school culture, district priorities, state mandated tests, etc. In addition, other systems just outside the nested system, such as family and community dynamics, effect students’ lives, and, thus, also impact teachers. The Covid-19 pandemic in March 2020 created another layer of complexity that affected all of the nested systems.

Figure 1

Teacher Induction as a Complex Adaptive System



School-university partnerships, illustrated with a wedge shape that cuts across the nested systems, may also influence the district system, school-based system, and individual teachers' practice at varying levels. The partnership may also be influenced by these systems, as well state and national mandates. The bi-directional black arrows in Figure 1 represent the constant interaction and influence of each system on other systems. The bi-directional red arrow indicates systems that are more likely to influence other systems because they are within a nested structure. Note that all circles are drawn with permeable lines, further reinforcing the fluidity of the interaction among the systems.

With CAS theory as a guiding framework, this action research study examined ways in which a school-university partnership's induction support could assist new teachers in navigating these multiple systems. Using this theoretical lens in combination with social network theory, as described in the next section, my action research team designed interventions that considered the complexity related to the many aspects of teaching to better equip teachers to be adaptive to constantly changing conditions and challenges. Thoughtfully considering the complexity of teaching resulted in interventions that were more impactful and responsive to the needs of adult learners.

Social Network Theory

While CAS is a helpful theory for understanding the complexity of the teaching profession, it was insufficient for informing induction program interventions within the research context. In the process of analyzing initial data, I became increasingly interested in teachers' formal and informal relational interactions with peers, administrators, and university faculty that affected their learning and connectedness to their work. I also discovered a significant body of research that suggested that educators are more likely to stay in the profession if they are a part

of a strong professional network. Collegial support is "central for the retention, increased professionalism, and depth of engagement of educators" (Daly, 2014, p. 1). Given research findings on the relational aspects of teacher development, I chose social network theory to guide the action research interventions. This theory complements CAS because the concept of inter-connectivity is central to both theories and complex personal interactions within organizational networks affect the larger CAS. Social network theory is also increasingly being applied in educational research, including studies related to teacher retention and induction.

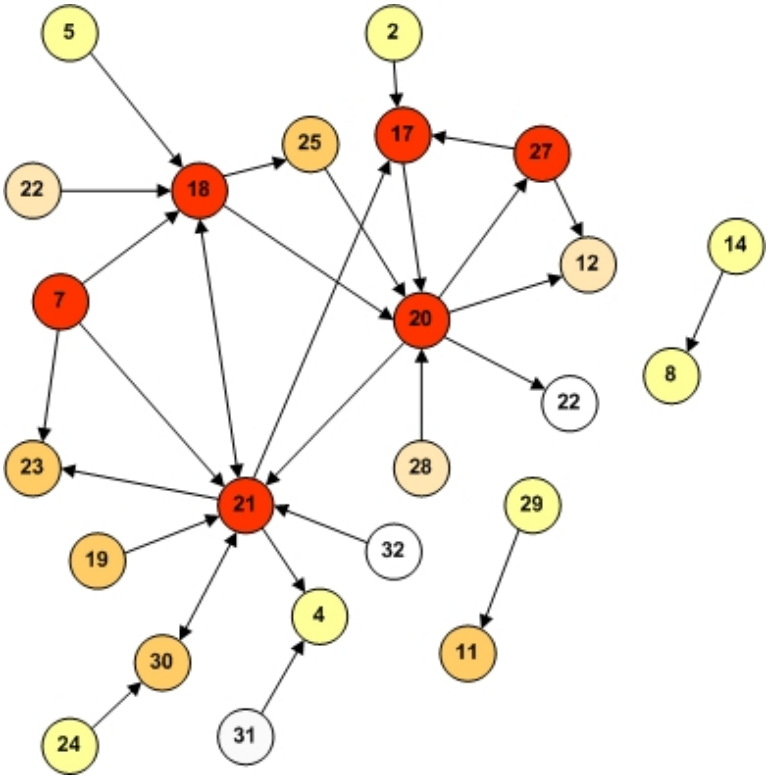
Social network theory examines how relational networks affect individuals' lived experiences within organizations. In the book *Social Network Theory and Educational Change* (2014), editor Alan Daly defined a network as "a group of actors who are connected to one another through a set of different relations or ties" (p. 4). Actors, also called nodes, can experience five basic types of ties to others including similarities, social relations, mental relations, interactions, and flows—all of these types of ties can be characterized as social networks. Social network research is also organized by different domains and levels of analysis. The focus of my research is on the type of network research referred to as "group social capital" (Daly, 2014, p. 24). Studies in this domain focus on group outcomes as functions of a group's network structure. For example, teams with dense social connections may experience greater satisfaction than those with less dense connections. Individual's ties to one another may support or constrain opportunities for resources and ideas to be shared and diffused through the system.

To discover the strength of a particular social network, researchers commonly use surveys or interviews to ask questions such as, "With whom do you collaborate regarding instructional issues?" (Daly, 2014, p. 6). Using social network analysis software, such as UNICET, researchers can analyze entire networks and construct visual representations of social

connections in a system. As shown in an example of a social network in Figure 2 below, circles represent individual actors (nodes) in the system and lines represent relationships, with arrows indicating the direction a resource flows from one individual to another. “Central actors” (Daly, 2012, p. 6), as depicted by #20 and #21 in Figure 2, are people with the most ties with others in the organization who may have more influence in the organization, while “peripheral actors” (p. 7), such as # 8 and #14 depicted in Figure 2, have limited connections to others in the system.

Figure 2

Social Network Example



According to Moolenaar (2012), social network research is characterized by three key assumptions about individuals in a social structure. First, from a social network perspective, resources, such as information and knowledge, are exchanged among individuals through social interaction. This may occur through collaborative projects or informal advice, for example.

Second, individuals are seen as interdependent because they are embedded in a social structure. Teachers are embedded in multiple levels of relationships, such as one-to-one, grade-level teams, schools, and districts. Theorists argue that changes at a single level, such as teacher knowledge, will have consequences for a higher-order level and vice-versa (Moolenaar, 2012, p. 11), which reinforces the idea of a complex adaptive system that involves nested systems that constantly interact with one another. Third, social networks may provide opportunities for the action of individuals and organizations. Within schools, teachers may benefit from resources, such as instructional materials that come into their school's social network; however, they will only benefit if they have the social relationships to access these resources. In addition, teachers can only benefit from the resources made available to their school network, so a lack of valuable resources may constrain a school's capacity for improvement (Moolenaar, 2012, p. 11).

Educational studies are increasingly using social network theory to understand "the complex role of teacher relationships in improving teaching and learning and in facilitating educational change" (Moolenaar, 2012, p. 11). One set of social network research examines teacher collaboration by analyzing networks across schools or districts, including school-university partnerships in teacher training and multiple schools working collaboratively on a common purpose. A second stream of research focuses on understanding teacher collaboration by analyzing social networks within schools or districts. These studies examine networks in a bounded group, such as grade levels, or schools and often focus on "how patterns of relationships among educators within schools or districts affect teachers' instructional practice, student learning, or the implementation of reforms" (Moolenaar, 2012, p. 12). Patterns of social relationships among teachers "offer a valuable framework for examining whether and to what degree teacher collaboration takes place" (Moolenaar, 2012, p. 8). Some studies showed that

"patterns of teachers' social relationships have been associated with schools' capacity to change" (p. 26). Strong, supportive social networks have been shown to be an important factor in the success of school reform efforts.

Daly (2014) laid the groundwork for empirical social network studies in education by describing a study that was conducted to examine the information network of social relationships among leaders in a school district, including school level and central office administrators. An initial social network map of educators in the district showed a fairly unconnected system. One year after a formal change strategy was implemented that focused on building collaborative opportunities, including specific structures for leaders to share best practices, a second network map showed a significant increase in connections and also showed where further support for collaboration was still required. After four years, the network map had become dense with connections—while the same core connectors were still in place, the peripheral site administrators were much more densely connected with one another.

Social Capital

A central concept to understanding social network is social capital, which Daly (2014) defined as "an investment in a system's social relations through which the resources of other individuals can be accessed, borrowed, or leveraged" (p. 4). Resources exists in social relations, so organizations need to be aware of the network's assets and take action through social ties to access the resources. Access to social capital transactions depends on the quality of ties in a social system. Daly (2014) contrasted strong ties that support transfer of "complex knowledge; joint problem solving and the development of coordinated approaches" (p. 4) with less dense networks having fewer ties that transfer more routine information.

According to Daly (2014), a growing body of network research suggests "relationships within a system matter in enacting change" (p. 2). Lasting change occurs through the participants' interaction and change processes are maintained through interpersonal relationships. Daly argued that the analysis of the network of social relations in any organization can be important in determining appropriate change strategies. Recent research conducted by renowned education professor Anthony Bryk and colleagues supported this idea. Learning from how the World Health Organization uses science networks to solve complex problems, Bryk, et al. (2015) argued that networks can accelerate learning in any organization and can play a critical role in helping to create systemic change in the field of education. Though their research focused on studying how large inter-organizational networks create change, one of their findings was that the "deliberate effort to nurture social capital" (Bryk, et al., 2015, p. 146) is central to any network. They discovered that strengthening social ties among people resulted in organizational innovation.

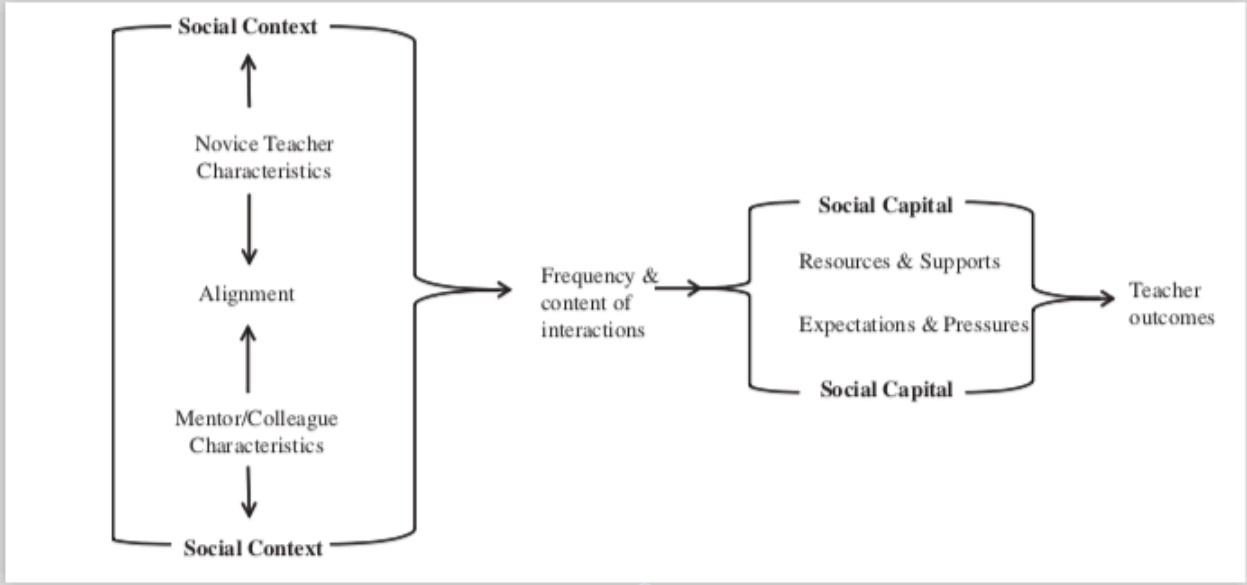
Leana (2010) examined social capital in schools and found that the ways that teachers interacted with one another influenced the school as a whole and "results in a level of shared performance that you can't get from individuals alone" (p. 17). In one of her studies of social capital in a public school system, she found that social capital "entailed having a trusting climate in the school—one where teachers talked to each other, shared the same norms, and had strong agreement in their descriptions of the culture of the school" (Leana, 2010, p. 18). She also found this trust was more important than other factors, such as teacher level of education, teacher certification, or other human capital measures in predicting student achievement scores.

Social Network Theory and Induction

To help researchers consider how social network theory can be used to inform research related to novice teacher support, Pogodzinski (2012) developed a helpful framework. As shown in Figure 3, new teachers are situated in a school's social context and interactions with mentors/colleagues build social capital, including resources and supports, that influence teacher outcomes, such as teacher practice and retention. Novice teachers' individual characteristics, such as their values, goals, and philosophy of teaching, determine the frequency and content of interactions with colleagues, which contributes to gaining social capital.

Figure 3

Social Capital and Teacher Outcomes Framework (Pogodzinski, 2012)



Other researchers who use social network theory to study induction emphasize the culture and leadership within schools and how that influences new teacher development. One practical implication from Kaul, et al.'s (2021) mixed method social network study is that school leaders can help new teachers access key social capital and make the capital more visible by creating

structures that facilitate collaboration among new and veteran teachers. Shea, et al. (2020) builds on this idea by emphasizing that when individual teachers build social capital, "system capital" (p. 606) is generated, which facilitates organizational learning and growth. Echoing Kaul, et al.'s (2012) recommendation that school leader create structures that facilitate collaboration, Shea, et al. (2020) urged leaders to "build the capacity of their organizations by creating the structural conditions by which teachers can influence one another" (p. 620). Other important findings from social network theory studies related to induction programs are described in the following empirical literature review.

Empirical Studies Using Social Network Theory in P-12 Schools

Empirical studies using social network theory to examine issues in P-12 education are limited, but the number of studies is growing, especially over the last three years, as researchers continue to examine the role of social relationships in teachers' learning, effectiveness, and job satisfaction. My literature review looked at empirical literature that informed social network theory in P-12 schools and, specifically, new teacher induction programs. This purposeful sample of studies after the year 2000 allowed for a deeper understanding of assumptions and critiques of social network theory. The search words/terms that I used were "social network theory," "social capital," "teachers," and "teacher induction." For the literature search, a number of databases were used, including Google Scholar and the University of Georgia Libraries database. Thirteen articles were selected based on the aforementioned search process. Each of the studies was evaluated in the integrative literature review method (Torraco, 2005).

Table 1 below summarizes 13 empirical social network studies, including four studies related to teachers in P-12 schools, eight studies related specifically to teacher induction

programs, and one related to pre-service teachers (ordered by date of publication). Discussion of the studies most relevant to my research question are included below

Table 1

Empirical Studies: Social Network Theory Studies Related to Teachers in P-12 Schools and New Teacher Induction

Date	Author	Title	Theme	Sample	Methodology	Data sources	Key Findings
2020	Bjorklund, P., Daly, A. J., Ambrose, R., & van Es, E. A.	Connections and capacity: an exploration of preservice teachers' sense of belonging, social networks, and self-efficacy in three teacher education programs.	Social networks and a sense of belonging influences on pre-service teachers' self-efficacy	245 pre-service teachers in 3 university teacher preparation programs in the United States	Quantitative survey study	Survey that included validated self-efficacy scale and social network questions	Pre-service teachers' (PST) sense of belonging to the teacher preparation program related to their sense of self-efficacy because it increased their feelings of competence and helped them foster teacher identities. Feeling supported by a peer network built PST confidence, efficacy, and resilience. The more central a PST is to the network, the more self-efficacy he or she has related to instructional strategies.
2020	Marz, V., & Kelchtermans, G.	The networking teacher in action: A qualitative analysis of early career teachers' induction process.	New teachers benefit from broad networks of support from colleagues in schools, as well as external and informal networks.	6 induction teachers in one secondary school in Belgium	Case study	Diaries and interviews	External and informal networks are important to new teachers' support systems. Within their schools new teachers benefit from networks of colleagues across the school (not just their mentor) called "distributed mentorship." New teachers want opportunities to share their own knowledge and collaborate related to school-wide issues later in their first year.
2020	Wilhelm, A. G., Woods, D., del Rosal, K., & Wu, S.	Refining a professional network: Understanding first-year teachers' advice seeking.	New teachers rely on the other teachers in their school as their primary support network (source of advice)	74 first-year alternatively certified teachers in the United States were surveyed and 26 of them interviewed	Mixed methods study	Survey and interviews	First-year teachers showed an increase in advice seeking within their schools over the course of the school year. First-year teachers' networks mostly included other teachers in their schools, rather than school leaders, university mentors, etc. The quality of the support arose as a reason teachers sought advice from a particular person. School conditions (schedules, etc) need to facilitate interaction among new teachers and their colleagues.

Date	Author	Title	Theme	Sample	Methodology	Data sources	Key Findings
2019	Sikma, L. M.	Moving beyond induction and mentoring: The influence of networks on novice teacher experiences.	New teachers' social networks relate to job satisfaction.	4 novice elementary school teachers in suburban Midwestern United States schools	Case study	Interviews, observations, documents (social network maps)	Found relationships between job satisfaction and ties with colleagues. Norms of the professional culture of the school enhanced or inhibited novice's access to collaboration and expertise. Novice teachers need 5 types of support: emotional, contextual, academic, social, and relational. Emotional support most prioritized. New teachers have strong desire for co-planning and collaborating with colleagues.
2019	Thomas, L., Tuytens, M., Moolenaar, N., Devos, G., Kelchtermans, G., & Vanderlinde, R.	Teachers' first year in the profession: The power of high-quality support.	Beginning teachers' social networks impact their job satisfaction.	292 induction teachers in primary schools in Belgium	Quantitative survey methods	Online survey related to social networks	Teachers' collegial relationships correlated with job satisfaction. Three types of support that are most important to induction teachers: professional, emotional, and social. The quality of the interactions matter more than the frequency of the contacts with others.
2019	Thomas, L., Tuytens, M., Devos, G., Kelchtermans, G., & Vanderlinde, R.	Beginning teachers' professional support: A mixed methods social network study.	Having access to professional support from a variety of colleagues is important for new teachers' job attitudes	All staff at two primary schools in Belgium were surveyed; two teachers were focus of interviews (one from each school)	Mixed methods	Whole-school survey and semi-structured interviews	Beginning teachers need support from a diverse network of colleagues, not just their mentor. This support, including support from a principal, influences their job attitudes. New teachers gain more advantage from relationships with their colleagues than veteran teachers. Teachers who are more central to their network get more resources.
2016	Struyve, C., Daly, A., Vandecandelaere, M., Meredith, C., Hannes, K., & Fraine, B.	More than a mentor: The role of social connectedness in early career and experienced teachers' intention to leave.	Social networks and teacher retention	736 teachers, including 87 teachers with 0-3 years experience in 10 elementary schools in Flanders, Belgium	Multilevel moderated mediation analysis techniques using UNICET social network software	Questionnaires	The more ties that early teachers had with school colleagues regarding the exchange of affective advice, the more job satisfaction they experience and less the thought about leaving the profession. Early career teachers also benefit more from social relationships than veteran teachers.

Date	Author	Title	Theme	Sample	Methodology	Data sources	Key Findings
2015	Fox, A. R. C., & Wilson, E. G.	Networking and the development of professionals: Beginning teachers building social capital.	Social capital and new teacher development	Three new teachers in a school-university partnership program context in England (they were completing their degrees while teaching for their first year)	Qualitative case study	Participant logs & blogs, observations, participant interviews/ network maps, and mentor interviews over the course of one year	Social capital that new teachers developed through networking with peers helped them to cope with challenges they faced as new teachers. Outcomes for the development of new teachers' professional practice differed depending on how they networked and developed social capital.
2013	Le Cornu, R.	Building early career teacher resilience: The role of relationships.	Social networks and new teacher resilience	60 early career teachers and school principals from across Australia	Narrative inquiry and critical ethnography	Two semi-structured individual interviews with each teacher and principal	Mutually sustaining relationships and peer support were key conditions for building early career teacher resilience. For new teachers to feel confident they need to be sustained by relationships based on mutual trust, respect, care, and integrity. Though the focus of this article was on findings related to relationships, the larger study found that the five main conditions for new teacher resilience include: relationships, school culture, teacher identity, teachers' work, and policies and practices.
2012	Moolenaar, N. M., Sleegers, P. J. C., & Daly, A. J.	Teaming up: Linking collaboration networks, collective efficacy, and student achievement.	Teachers' social networks related to collective efficacy and student achievement	775 teachers and principals in 53 Dutch elementary schools	Quantitative survey methods	Social network survey and Collective Efficacy Scale (CE-Scale)	Well-connected teacher networks were associated with strong collective teacher efficacy, which in turn supported student achievement. Teacher teams that felt they were able to motivate and challenge their students were teaching in schools that achieved higher student performance for language.

Date	Author	Title	Theme	Sample	Methodology	Data sources	Key Findings
2010	Baker-Doyle, K. & Yoon, S.	Making expertise transparent: Using technology to strengthen social networks in teacher professional development.	The role of online social networks in teacher professional development	17 teachers from 13 public high schools in Philadelphia	Quantitative survey methods combined with qualitative data (observation and focus groups)	Social network survey, focus groups, teacher observations, reflective remarks by teachers	Teachers who participated in a content-focused summer workshop followed by online collaboration using Ning (a web-based social network software platform similar to Facebook) developed "expertise transparency" by year 2. Teacher collaborated to share expertise and strategies and sought advice and support from one another in an online platform across schools in the same district.
2010	Moolenaar, N.M. & Sleegers, P.J.C.	Social networks, trust, and innovation: The role of relationships in supporting an innovative climate in Dutch schools.	The role of trust in teachers' social networks	775 teachers and principals in 53 Dutch elementary schools (same study as listed above with different research question)	Quantitative survey methods	Social network survey, Collective Efficacy Scale (CE-Scale), Innovative Climate questionnaire	Teachers in dense school teams perceive their school's climate as more innovative than teachers who have fewer relationships around the discussion of work. Dense networks around work-related discussions contribute to trust among educators, which is associated with taking risks to improve the school.
2009	Penuel, W., Riel, M., Krause, A., & Frank, K.	Analyzing teachers' professional interactions in a school as social capital: A social network approach.	Impact of teachers' social capital on access to resources and expertise	2 elementary schools in California	Exploratory case study methodology	Social network survey, interviews	Analyzing the internal structure of the school community was necessary to help account for the distribution of access to resources and expertise in the two schools. The social network at one school was much more fractured, and the novice teachers were far less likely to interact with veteran teachers. In this school, the leadership was more hierarchical, and the grade levels were isolated from each other.

Empirical Studies Related to P-12 Teachers. Four studies shown in Table 1 related to teachers in P-12 schools examined various educational issues influenced by social network theory, including teacher efficacy and student achievement, trust among teachers, implementation of reform initiatives, and the impact of online professional learning.

Teacher Efficacy and Student Achievement. In a robust study of 53 elementary schools in the Netherlands, Moolenaar, et al. (2012) found that well-connected teacher networks were associated with strong collective teacher efficacy, which in turn supported student achievement. Using quantitative survey methods, the researchers measured teacher collaboration networks and collective efficacy beliefs. Teacher teams in schools with dense advice networks felt they were able to "motivate and challenge their students" (p. 259), and the students achieved higher performance on language assessments compared to schools with less dense networks. One valuable takeaway from this study is that social contexts that are supportive of the exchange of instructionally valuable information support teachers' perceptions of their ability to collectively impact student learning.

***Trust in Social Networks*.** In a different study related to the study above, Moolenaar and Sleegers (2010) examined the role of trust in teachers' social networks. Teachers in dense school teams perceived their school's climate as more innovative than teachers who had fewer relationships that centered around discussion of teaching and learning. The researchers found that "dense networks around work-related discussions contribute to trust among educators, which is associated with taking risks to improve the school" (Moolenaar & Sleegers, 2010, p. 111). The research showed that teachers build trust and are more likely to take risks as a result of strong informal communities where expertise, information, and know-how is exchanged among members.

School Reform Initiatives. Penuel, et al. (2009) conducted a comparative case study of two elementary schools in the United States to examine the impact of teachers' social capital on implementing reform initiatives. The study used an exploratory case study methodology that relied on a social network survey and interviews to learn about the teachers' relational networks in each school. In the school where the principal supported collaborative efforts that built social capital among teachers, teachers felt that they had access to expertise and resources to improve their teaching practices. The school's social network structure reflected information sharing across grade levels and among novice and veteran teachers, which facilitated the implementation of reform initiatives. In contrast, the other school in the study had a fractured social structure that left many teachers isolated. In this case, the principal was much more hierarchical and did not facilitate internal collaboration. The teachers struggled in implementing the school reform initiative as a result. Penuel, et al. (2009) concluded that there was some evidence that the distribution of resources and expertise was related to the level of change that each school experienced.

Online Professional Learning. Baker-Doyle and Yoon (2010) studied the role of social networks in facilitating impactful online professional development for high school science teachers. They examined teacher collaboration on an online platform among seventeen teachers across 13 different high schools in the same district in Philadelphia. Teachers who participated in a content-focused summer workshop followed by ongoing online collaboration developed "expertise transparency" (Baker-Doyle & Yoon, 2010, p.115), defined as "knowledge of the distribution of content knowledge expertise" (p. 115) by year two in the program. Over time, teachers increasingly collaborated to share expertise and strategies and sought advice and support from one another through the online platform. As teacher professional development continues to

expand in online formats, the study demonstrated the potential for impactful peer to peer learning exchange to occur through virtual social networks.

Empirical Studies Related to Induction Teacher Support. In considering how social network theory connects to new teacher induction support, Feiman-Nemser argued (2012) that induction support is only impactful if the school community and culture embrace and support the growth and learning new teachers experience through ongoing collaboration. There is a fundamental shift from "teaching as an independent practice to a teaching as an interdependent practice" (Feiman-Nemser, 2012, p.14), with collaboration as the key variable. She encouraged educators to view induction as a model of "cultural transformation" (p. 14) within schools. Her model situates induction within a professional teaching community and school culture that supports continuous learning for all. Teachers are much more likely to remain in schools that value collaboration, and research shows that "social capital—the pattern of interactions among teachers and administrators focused on student learning—affects student achievement and school success" (Alliance for Excellent Education, 2014, p. 4).

Empirical research on teacher social networks has shown that characteristics of teachers' social networks directly influence new teachers' decisions to teach, ability to cope with change, sense of support, professional learning, commitment, and student achievement (Baker-Doyle, 2010, p. 7). These factors are all important aspects of workplace satisfaction which affect teacher retention. Baker-Doyle (2010) reviewed much of the literature related to social networks and teacher attrition and argued that a social network perspective can help scholars and policymakers analyze complex social factors related to attrition and "re-conceptualize attempts to solve the problem of teacher turnover" (p. 10).

In the last five years, empirical studies that used social network theory to examine new teachers' experiences have increased. As illustrated in these studies findings, social network theory benefits educators' understanding of induction support and new teachers' needs. Eight of the empirical studies displayed in Table 1 are discussed below.

Social Infrastructure. In an important study focused on how social networks supported induction teachers, Struyve, et al. (2016) studied social networks in 10 elementary schools in Belgium, including 87 first, second-, and third-year teachers. The scholars used surveys to examine two types of networks: instrumental (work related) and expressive (affect-laden relationships). The instrumental network focused on the "information network," such as how teachers got information on teaching methods and classroom management. The "affective network" gathered information about teachers' social connectedness to colleagues. They found that the more ties that early career teachers had with school colleagues regarding the exchange of affective advice, the more job satisfaction they experience and the less they thought about leaving the profession. Their research indicated early career teachers in particular benefit significantly more from social relationships with colleagues than veteran teachers do. The social infrastructure in which new teachers are situated is important to consider, and this study indicated that "schools would be well served in investing in opportunities and creating the conditions for teachers in general, but early career in particular, to have access to both instructional and affective relationships" (Struyve, et al., 2016, p. 211).

Job Satisfaction. Recently, three additional studies were conducted with induction teachers in Belgium that found social networks important to new teachers' job satisfaction. Thomas, Tuytens, Moolenaar, et al. (2019) conducted a quantitative study with 292 primary school induction teachers using a survey focused on collecting social network data. They found

that teachers' collegial relationships correlated with job satisfaction and that the quality of the interactions mattered more to teachers than the frequency of the interactions. The three types of support new teachers most needed included professional, emotional, and social support.

In a second mixed methods study in two Belgian primary schools, Thomas, Tuytens, Devos, et al. (2019) found that having access to professional support from a diverse network of colleagues in their schools was important to new teachers' attitudes towards their jobs. They confirmed findings from Struyve, et al. (2016) that induction teachers gained more advantage from relationships with colleagues than veteran teachers did.

In a case study with six induction teachers in one secondary school, Marz and Kelchtermans (2020) also found that teachers benefited from broad networks of colleagues across their schools, which was referred to as "distributed mentorship" (p. 8), rather than relying one just one mentor. The research found that later in their first-year new teachers also wanted opportunities to share their own knowledge and collaborate with colleagues related to school-wide issues.

School Culture. In another case study with four novice elementary school teachers in the Midwestern United States, Sikma (2019) found that the school's professional culture enhanced or inhibited novice's access to collaboration and expertise. She recommended that school administrators create cultures of trust and conditions that give teachers opportunities to collaborate with one another. Sikma also found that novice teachers most needed emotional support from colleagues among the five different types of support studied.

Teacher Resilience. Teacher resilience is another relational-oriented concept often considered important in new teacher development. According to Le Cornu (2013), relational-cultural theory suggests that "resilience resides not in the individual but in the capacity for

connection" (p. 3). She conducted a narrative inquiry study of 60 early career teachers and administrators in Australia to learn how novice teachers interpreted their lived experiences and constructed meaning of their work experiences. One key finding was that relationships were a key condition for teacher resilience. Where early career teachers were able to "establish trusting, respectful and reciprocal relationships, they perceived themselves as more confident and competent" (Le Cornu, 2013, p. 5). In particular, peer support emerged as being central to developing resilience among new teachers, as strong peer networks helped them through the highs and lows of their teaching experiences. The support increased their resilience, which helped them maintain positive feelings, such as enthusiasm and confidence, even when faced with ongoing challenges in demanding school contexts.

Peer Networks. In a case study of three beginning teachers in a school-university partnership in England, Fox and Wilson (2015) found that social capital teachers developed through networking helped them to cope with challenges they faced as new teachers. The study found that different outcomes for the development of new teachers' professional practice depended on how they networked and developed social capital. This study emphasized that new teachers should be made aware of the importance of pro-actively developing social capital through peer networks to help to "provide them with the self-efficacy and resilience to develop as professionals" (Fox & Wilson, 2015, p. 105).

Self-Efficacy. Lending further support to Fox and Wilson (2015) and Le Cornu's (2013) findings, Bjorklund, et al. (2020) recently conducted a quantitative study with 245 pre-service teachers in three university teacher preparation programs in the United States. The study found that feeling supported by a network of peers built pre-service teachers' confidence, self-efficacy, and resilience. The study also examined teachers' sense of belonging and found that

connectedness to the teacher preparation program related to their self-efficacy, as it increased feelings of competence and helped them foster their identity as teachers.

As these studies show, collaboration among the many educators within schools and districts, including university partners, is a CAS that requires considering social network theory to help develop conditions that enhance powerful learner collaborations. Daly (2014) affirmed how CAS and social network theory can be used together to help guide educational change:

> The network paradigm offers a powerful lens and methodology with which to model these complex systems. Its beauty lies in its versatility in capturing many of the social relationships that comprise our complicated social world. And as we better understand the patterns of relationships between individuals within, between, and among educational institutions, we will be in a better position to effect change. (p. 28)

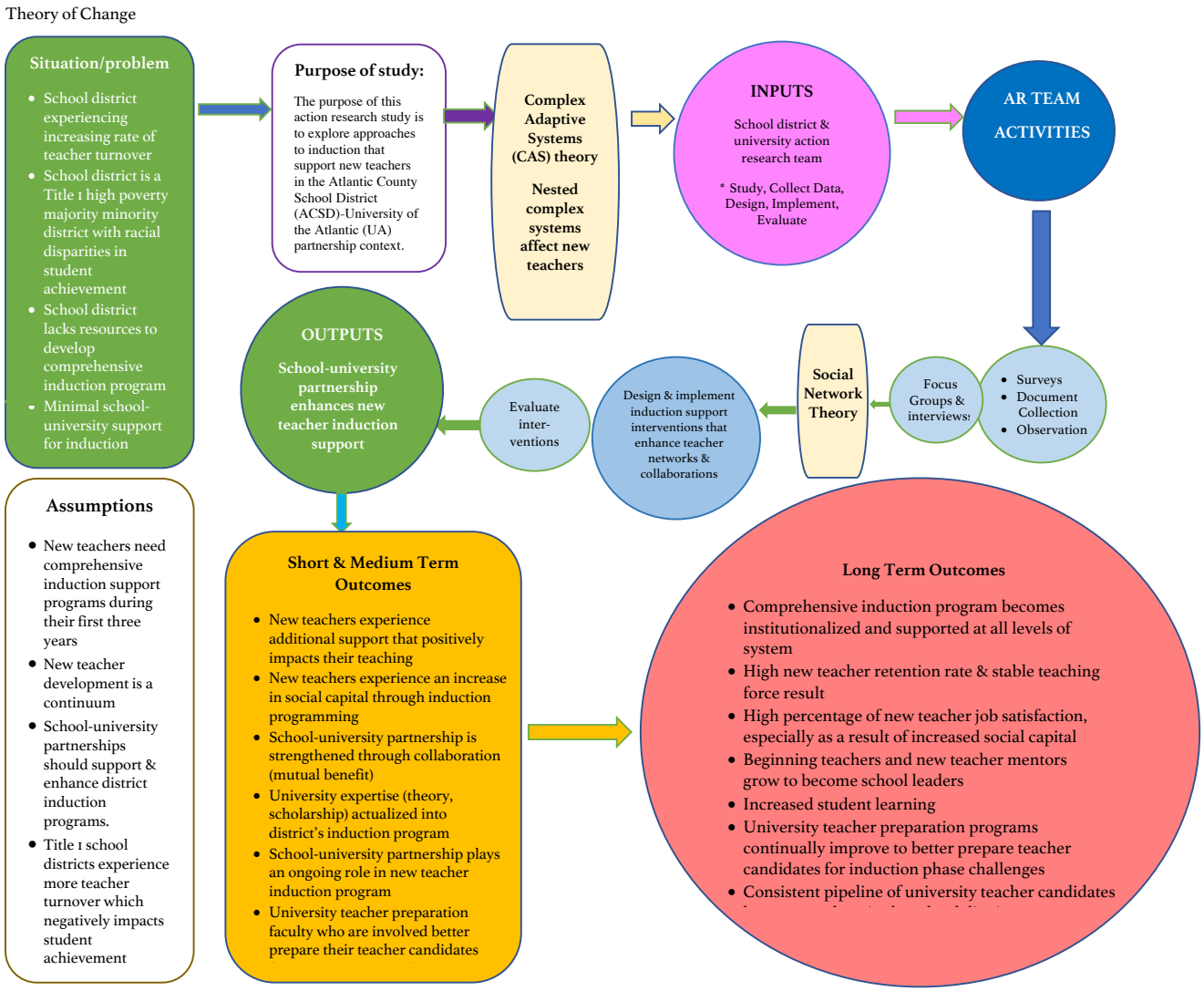
Theory of Change

CAS theory and social network theory worked together to inform this action research study's change process. CAS theory guided the understanding of the problem, more broadly and within the research context, while social network theory guided the development of action research interventions. Figure 4 below illustrates the theory of change process, or logic model, that I designed in the early stages of the study, which is guided by the action research methodology. This methodology is described in detail Chapter 2, and the action research context in which this theory of change is situated is described in detail Chapter 3. Considering new teacher support through a CAS lens informed the action research team's holistic understanding of the many interconnecting systems that affect new teachers' learning and development. Social network theory was used by the action research team to consider ways in which the partnership could design interventions that would facilitate relational networks to increase educators' social

capital. As shown in Figure 4, the short-term outcomes of this planned change process included making a positive impact on new teacher support, and, ultimately, this support should influence teacher retention and job satisfaction (long-term outcome). Short-term and long-term outcomes also benefit the university system.

Figure 4

Theory of Change



Literature Review: Induction Support in School-University Partnerships

To better understand issues related to teacher induction, I reviewed general empirical studies on induction programs that informed my framing of the research problem. Given my research purpose, however, my induction literature review focused on empirical studies related to teacher induction in school-university partnership settings since the year 2000. The purposeful sample of studies in my literature review allowed for a deeper understanding of assumptions and critiques of the ways in which school-university partnerships engaged in induction support. The search words/terms that I used were "teacher induction," "school-university partnerships," and "partnerships." For the literature search, a number of databases were used, including Google Scholar and the University of Georgia Libraries database. Scant empirical studies were found through these searches, and no empirical studies have been published related on this topic since 2016. A primary source for the studies in this literature review was Hunt's (2014) review of 25 articles published in peer-reviewed journals since 2000 related to partnership induction support. Nine studies that Hunt (2014) reviewed and four additional studies were selected and evaluated using the integrative literature review method (Torraco, 2005).

The 13 empirical studies that were most relevant to my school-university partnership context are discussed below and summarized in Table 2 (ordered by date of publication). Participants in all 13 studies included induction teachers who were supported by school-university partnerships in different ways. All studies confirmed that induction support is important for helping teachers with the challenges specific to novices in the profession. The studies also all recommended that both school districts and universities should play a role in induction support.

Table 2

Empirical Studies: School-University Partnership Research Related to New Teacher Induction

Date	Author	Title	Sample	Methodology	Data sources	Key Findings
2016	Hartman, S. L., Kennedy, C., & Brady, B.	Graduate teaching fellowships as new teacher induction: School-university partnerships' impact on teaching self-efficacy.	14 First-year teachers who were university Teaching Fellows who both teachers in a pre-P-12th grade classroom and were full-time graduate students	Case study	Formal interviews, informal interviews, and field notes from site visits to the 11 schools in 6 districts.	The study coded 5 categories of self-efficacy: Differentiation, Classroom and Behavior Management, Parent/Care Giver Communication, Developing Positive Student Relationships, and Collaboration. At the beginning of the study participants had low self-efficacy in 4 of the areas. By the end of their first year, they expressed significantly higher self-efficacy in all areas. Monthly professional learning seminars addressed first-year teaching challenges and concerns in a supportive environment that focused on building teachers' resiliency.
2015	Helfeldt, J. P., Capraro, M. M., Capraro, R. M. & Scott, S.	Full-time teaching internships: A public school-university partnership designed to increase teacher retention in urban area schools.	141 teaching interns who were part of three cohort groups who taught in high needs schools in Texas.	Longitudinal comparison	State Board for Educator Certification data (in Texas)	After 4 years of teaching, 96% of the first cohort of interns were still teaching, while only 62% of the traditionally prepared student teacher graduates were still teaching. After 3 years of teaching, 96% of the interns were still teaching, while only 71% of the traditionally prepare teachers were still teaching.

Date	Author	Title	Sample	Methodology	Data sources	Key Findings
2013	Van Sant Allen, L.	The impact of induction support on teacher development, teacher retention, and the teacher quality issue	Phase 1: 96 teachers (76 MAT program graduates) from 2005-2009 Phase 2: 160 MAT graduates from 2005-2009	Mixed methods, including qualitative and quantitative data	Phase 1: Written responses, focus groups, document review of curriculum units, employment status records Phase 2: Quantitative survey	Focused and sustained time for teacher professional learning is even more important for novices than experienced teachers. Maintaining professional support networks for MAT graduates during induction years improved teacher retention. Teacher self-efficacy increased through writing curriculum in a summer university-based learning community.
2010	Gilles, C., Wilson, J., & Elias, M.	Sustaining teachers' growth and renewal through action research, induction programs, and collaboration.	3 groups of professionals in an elementary school: 11 Teaching Fellows, 12 teachers who had served as mentors, 1 principal, 1 school-university partnership coordinator	Constructivist paradigm that used naturalistic methods of data collection and analysis	24 face-to-face semi-structured interviews (data analysis included constant comparison, computer software, triangulation)	1) Interactions fostered through classroom research deepened the school's professional community; 2) classroom research is valued, thus prompting internal accountability; and 3) classroom research became a renewable professional growth cycle.
2009	Helfeldt, J. P., Capraro, R. M., Capraro, M. M., Foster, E., & Carter, N.	An urban schools-university partnership that prepares and retains quality teachers for 'high need' schools.	38 teaching interns who taught in urban, low-income elementary and middle schools in 6 districts	Descriptive study	Retention rates; Teaching Intern Professional Development (TIPD) Scale administered at the beginning and end of the year to measure readiness to teach, self-efficacy, and confidence. Principal ratings of interns using state mandated observation and evaluation instrument was analyzed.	100% of interns returned to teaching year after internship, compared to 80.8% who did not receive formal mentoring across state of Texas, and 100% were offered contracts to continue teaching. TIPD scale showed notable increase from pre-test to post-test in terms of interns' self-efficacy, readiness, and confidence. School principals rated all interns as proficient across all domains on the state test.

Date	Author	Title	Sample	Methodology	Data sources	Key Findings
2009	Stanulis, R. N., & Ames, K. T.	Learning to mentor: Evidence and observation as tools in learning to teach.	1 mentor teacher, 1 first-year teacher, 1 second-year teacher	Action research methodology; collaborative project between university induction leader, research associate, and mentor teacher in the partnership induction program	Observations in several settings, including observing mentoring cycle and classroom instruction; interviews with mentor; journal reflections.	The mentor learned the value of gathering evidence from the beginning teacher's practice to guide her continued learning, and the importance of observation as a tool for mentor and beginning teacher learning. Both conceptual and practical aspects of mentoring in an induction program.
2009	Stanulis, R. N., & Floden, R. E.	Intensive mentoring as a way to help beginning teachers develop balanced instruction.	Two groups of first- and second-year teachers in P-12 schools. 12 teachers volunteered to have an intensive mentor (who had received intensive training from university staff) within their subject matter of expertise and 12 teachers were a comparison group who received regular induction interventions and had assigned building mentors.	Quasi-experimental study of two groups of teachers who taught in schools with similar proportions of students from minority groups and free and reduced lunch. Both qualitative and quantitative data was collected.	Used AIMS observation instrument (which has been used in research to examine effectiveness of primary grades teachers) to rate 4 dimensions of classroom outcomes (classroom atmosphere, instruction, management, and student engagement); researchers observed each group of teachers at the beginning and the end of the year. Surveys were also administered to the treatment group at the end of the year.	The two groups of teachers scored similarly on the AIMS instrument at the beginning of the year; at the end of the year, the group who had received intensive mentoring demonstrated higher average scores on the AIMS tool compared to the comparison group. Atmosphere, Instruction, and Student Engagement scores were higher for the treatment group. Survey results showed that ideas and stances learned from their mentors directly helped improve their teaching. Teachers reported that mentors "pushed their thinking, helped them plan, and helped them engage students." (p. 119); all beginning teachers agreed to participate in intensive mentoring for a second year.

Date	Author	Title	Sample	Methodology	Data sources	Key Findings
2009	Swars, S. L., Meyers, B., Mays, L. C., & Lack, B.	A two-dimensional model of teacher retention and mobility: Classroom teachers and their university partners take a closer look at a vexing problem.	134 at a high needs elementary school that was involved in a PDS partnership with a university	Mixed methods: quantitative and qualitative data	Surveys, interviews	Researchers found two dimensions related to teacher retention and mobility. First, "the congruency of teacher beliefs and practices with the organizational norms established by the key players." Second, "teachers' relational needs and administrators'' willingness and ability to meet such needs." (p. 178) Teachers who exhibited high relational needs and low congruence of beliefs and practices were more likely to leave, "having little support for his or her different approaches to teaching and learning and little affirmation" (p. 179).
2005	Davis, B. H., & Higdon, K. A.	School/university partnership: Supporting beginning teachers' inquiry in urban school settings.	6 beginning elementary school teachers	Action research using a variety of qualitative methods.	Focus group interviews, questionnaires, and narrative reports	Conducting classroom research in beginning years of teaching can assist novices in the following ways: 1) focusing on authentic problems; 2) developing skill in systematic observation of practice; 3) validating effective teaching practices; and 4) connecting theory with practice.
2004	Andrews, S. P., Gilbert, L. S., & Martin, E. P.	The first years of teaching: Disparities in perceptions of support.	275 new teachers in two different regions of the state where partner universities were located; 33 school administrators in the school districts where teachers were surveyed.	Survey comparison study	Support for New Teachers Survey	The support strategies that new teachers valued most were related to opportunities to collaborate with and learn from other teachers. A low percentage of teachers reported having these strategies but a high percentage of administrators said that these supports were provided for new teachers. These included time to observe other teachers and co-planning time.

Date	Author	Title	Sample	Methodology	Data sources	Key Findings
2003	Luft, J. A., Roehrig, G. H., & Patterson, N. C.	Contrasting landscapes: A comparison of the impact of different induction programs on beginning secondary science teachers' practices, beliefs, and experiences.	3 groups of secondary science teachers who were in their 1st through 3rd years of teaching in various school districts in one region in the Southwest. 6 were in a science-focused support program; 6 were in a general support program; 6 did not have access to an induction program.	Quasi-experimental mixed methodology study with equivalent status of both quantitative and qualitative methods.	Quantitative methods included documenting teachers' use of scientific materials, types of assessments, and selected classroom practices. Qualitative component used phenomenological framework including repeated structured and semi-structured interviews, ongoing classroom observations, and document collection.	Teachers who participated in science-focused support program taught more extended inquiry lessons than the other groups, including more laboratory lessons. They also integrated more instructional and technology-based materials into their lessons. The general support and no formal support groups reported more frustrations with instruction and lack of assistance in their school. These two groups also tended to hold more didactic beliefs and enacted more traditional lecture-based lessons.
2001	Chubbuck, S. M., Clift, R. T., Allard, J., & Quinlan, J.	Playing it safe as a novice teacher: Implications for programs for new teachers.	Year 1: 37 1st-year teachers from 3 counties PreP-12th grade across many subject areas Year 2: 40 1st-year teachers and 20 2nd-year teachers PreP-12th grade across many subject areas	Formative evaluations of the 1st and 2nd years of the NTSP project	Written surveys, focus group interviews, notes from planning sessions, and formal and informal notes from NTSP planners.	Novice teachers experience a dual need for both emotional and cognitive support in a safe context. This was best provided by a combination of both internal resources from the district and external resources such as the university-led NTSP program New teacher support is an interactive process that includes the school context, support context, and personal relationships. Partnerships with educational institutions can enable preservice educators to create safe places to extend support and help new teachers explore alternative methods of educational improvement without pressure of evaluation.

Date	Author	Title	Sample	Methodology	Data sources	Key Findings
2000	Evertson, C. M., & Smithey, M. W.	Mentoring effects on protégés' classroom practice: An experimental field study.	92 P-12 teachers in 2 different school districts; 46 mentor pairs--23 pairs in treatment group and 23 pairs in comparison group	Quasi-experimental study: treatment group received 4-day intensive mentoring workshop offered by university faculty; monthly follow-up meetings were conducted for mentors by workshop leaders. The comparison group of mentors only participated in a one-day district orientation or no orientation.	Data collection included ratings and narrative records from 3 classroom observations of all protégés, videotapes of mentor-protégé conferences, weekly summaries of mentor and protégé meetings, and monthly goal-setting meetings.	Protégés of mentors participating in mentoring program could more effectively organize and manage instruction at the beginning of the year and establish more workable classroom routines. Students in these classrooms also had better behavior and engagement. Key finding is that the presence of a mentor alone is not enough; mentor's knowledge and skills of how to mentor are also crucial.

The studies were wide ranging in sample size from three participants to a total of 141 participants. The three most rigorous studies used quasi-experimental methodologies, comparing teachers who received intensive induction support to one or two other groups who received standard induction support or no support, depending on the context. Two studies used action research methodology to study the development of mentors and/or induction teachers over a period of time. Common data collection methods in many of the studies included individual and group interviews, questionnaires, written reflections, and classroom observations.

Empirical Study Comparisons and Analysis

Mentoring

Three studies focused on the mentoring component of induction programs. Evertson and Smithey (2000) clearly articulated that mentoring programs tend to lack clear goals and purpose, and few empirical studies have been done in this area. In their quasi-experimental study, a treatment group of mentors received a four-day intensive mentoring workshop led by university faculty, followed by monthly mentor support meetings. The professional learning support included role playing, analyzing case studies, viewing videotapes of novices teaching, and practicing systematic observation. The study found that "protégés of trained mentors showed increased evidence of developing and sustaining more workable classroom routines, managed instruction more smoothly, and gained student cooperation in academic tasks more effectively" (Evertson & Smithey, 2000, p. 302). These teachers' students were more engaged in school work and exhibited less disruptive behavior. The study underscores the importance of rigorously preparing mentors to provide the type of supports most needed by new teachers.

The other two studies related to mentoring were both conducted by Stanulis at Michigan State University. Stanulis and Ames' (2009) small study included only three participants; it

provided an inside look at the complexities of learning to mentor within an induction program. The study reiterated the need for mentors to also receive ongoing coaching throughout the mentoring process, ideally from a university partner, since mentors are also engaged in ongoing learning while they are mentoring.

Stanulis and Floden's (2009) other study was quasi-experimental with two groups of induction teachers. One group of 12 teachers received intensive, ongoing mentoring coaching and support, while the other group of 12 teachers received the district's standard induction support with assigned, untrained mentors. The teachers who received intensive mentoring scored higher on a classroom observation instrument that measured atmosphere, instruction, and student engagement than the teachers who received standard induction support. It is worth noting that the mentor teachers were released from their classrooms one day each week to provide intensive mentoring to three beginning teachers.

Classroom-Based Action Research

Two studies examined the influence of university-supported classroom-based action research and inquiry (terms were used inter-changeably) on induction teachers' development. Gilles, et al. (2010) found that the combination of an induction program and classroom-based action research promoted complex interactions among teachers and was a powerful agent for change within the school environment. All induction teachers in the study were pursuing their master's degrees, so the university partner provided support for their research. Mentor teachers coached induction teachers, as well as facilitated action research for their mentees and other teachers in the school who were interested in action research.

Davis and Higdon (2005) found that incorporating classroom research (inquiry) into the beginning years of teaching assisted novices by helping them to focus on authentic problems,

develop skills in systematic observation of practice, validate effective teaching practices, and connect theory with practice. Induction teachers who participated in the study were also earning a master's degree and received support from university faculty in developing their research proposals. The first-year teachers also received intensive mentoring from experienced teachers who were released from teaching to serve as full-time mentors.

University Internship Models

Three studies examined particular partnership models that included university internships for first-year teachers. Helfeldt, et al. (2009) studied the effects of a particular model of internship in which teaching interns were hired for one-year positions in lieu of student teaching and received intensive mentoring from full-time mentors. This study was the most explicit about the effect of induction on teacher retention rates. All 38 teaching interns who taught in urban, low-income elementary and middle schools remained in teaching the following year. The interns also showed notable increases on Teaching Intern Professional Development (TIPD) scale, which measures efficacy, readiness, and self-confidence.

Six years later, Helfelt, et al. (2015) extended the research study cited above to compare the longitudinal retention rate of 141 teachers who participated in this full-time paid internship program to traditionally prepared university graduates. Those in the internship program were supported by full-time mentors. After four years of teaching, 96% of the first cohort of interns were still teaching, while only 62% of the traditionally prepared student teacher graduates were still teaching. The findings corroborate the positive impact of comprehensive induction programs, especially those that include intensive mentoring. The "acceleration of new teachers' acquisition of professional competence" (Helfelt, et al., 2015, p. 12) affects teachers' decisions to remain in teaching.

Within the context of a similar year-long university internship model program, Hartman, et al. (2016) studied the impact of a graduate internship on the teaching self-efficacy 14 participants who were first-year teachers in a Professional Development School (PDS). They used a variety of methods, including surveys, interviews, and observations, to learn about the teacher efficacy of first-year teachers who were also earning their master's degrees and were supported by university mentors. By the end of their first year, they expressed significantly higher self-efficacy in all areas that were studies. Monthly professional learning seminars addressed first-year teaching challenges and concerns in a supportive environment that focused on building teachers' resiliency. Graduate coursework that was connected to their classroom teaching experiences also contributed to building teachers' efficacy.

Subject-Specific Induction

The only study that examined subject-specific induction was conducted by Luft, et al. (2003) who researched secondary science teachers' induction support. The quasi-experimental study studied three groups of induction teachers, one of whom received science-focused induction support, one who received general induction support, and one who received no support. They found that the teachers who received science-focused support, provided by both the university and the school district, were much more likely to incorporate inquiry-based and laboratory-based lessons in their instruction, based on researchers' ongoing classroom observations. Teachers in the other groups experienced more frustrations with instruction and lack of school support.

Cognitive and Emotional Support

One study focused on how universities can provide support that addresses specific cognitive and emotional needs of new teachers. Chubbuck, et al. (2001) found that new teachers'

emotional needs demand equal attention as their cognitive needs during their first years of teaching. The study also found that the issue of psychological safety cannot be ignored—teachers valued the safe environment provided by the university's non-evaluative support groups for new teachers, and they benefited from time for reflection together with other new teachers who were experiencing similar challenges. The researchers argued for conceptualizing new teacher support as an interactive process that includes the individual, school context, support context, and interaction among colleagues (Chubbuck, et al., 2001, p. 375).

Professional Learning Communities

One study examined the impact of a multi-year summer professional learning program for teachers who were recent Master of Arts in Teaching (MAT) graduates. Van Sant Allen (2013) found that induction teachers benefited from the sustained, dedicated time each summer to write curriculum units on a university campus within a professional learning community that included other recent graduates. Participants had higher teacher retention rates and improved self-efficacy, as they appreciated the focused time within a safe, supportive learning community for "rejuvenation and reflection" (Van Sant Allen, 2013, p. 89).

Administrator Perceptions of Induction Support

Related to this study, within two school-university partnership contexts in the same state, Andrews, et al. (2007) compared new teachers' perceptions of induction support they needed with administrators' beliefs about new teacher support being offered in their schools. The support strategies that new teachers valued most were related to opportunities to collaborate with and learn from other teachers. A low percentage of teachers reported having these strategies, but a high percentage of administrators reported that these supports were provided for new teachers, including time to observe other teachers and co-planning time. The researchers described a

variety of reasons why their perceptions likely differed, but of particular importance is that “collaboration may require logistical support that administrators underestimate or do not perceive” (Andrews, et al., 2007, p. 10). Even though this study was the least rigorous, it illustrated the importance of including administrators in designing and implementing induction support.

Teacher Mobility

One of the most collaborative research studies among university faculty and school-based teachers and administrators investigated teachers' perceptions of teacher retention and mobility at a PDS elementary school (Swars, et al., 2009). Teachers at the school initiated the study, as they were interested in learning why the school was experiencing high turnover each year. Using a collaborative inquiry approach, researchers surveyed 134 teachers at all grade levels in the school in combination with twenty-two individual teacher interviews. They found two dimensions were related to teacher retention and mobility. The first dimension related to "the congruency of teacher beliefs and practices with the organizational norms established by the key players," (Swars, et al., 2009, p. 178) such as administrators. The second dimension encompassed teachers' relational needs and administrators' willingness and ability to meet these needs. They found that teachers who exhibited high relational needs and low congruence of beliefs and practices were more likely to leave, "having little support for his or her different approaches to teaching and learning and little affirmation" (Swars, et al., 2009, p. 179). These findings illuminate factors that should be considered when designing induction programs. School administrators need to be actively involved in new teachers support because many teachers are likely to have high relational needs.

Tensions Within School-University Partnership Collaborations

Though not an empirical study, Stanulis, a researcher whose studies are referenced above, published a note-worthy article that described the tensions that a university faced when collaborating with school partners to develop a university-based induction program (Stanulis, et al., 2007). The partners struggled with providing support that enabled new teachers to "both fit into their teaching context and to lay the foundation for their continual growth as professionals…in ways that will be meaningful and enable them to focus their practice on student learning" (Stanulis, et al., 2007, p. 145).

For example, the authors described very different approaches to classroom management. University faculty wanted to imagine how a university induction program could "move beyond surface fixes or a set of tricks to keep order in a classroom and instead help beginning teachers think about why they do what they do as they teach" (Stanulis, et al., 2007, p. 140). School-based consultants wanted to give new teachers a "list of strategies and techniques" (Stanulis, et al., 2007, p. 140) for setting up their classrooms. Ultimately, the partners developed a shared vision using a framework that that focused on management related to students and their learning rather than management focused on behavior. The process of working through differences in approaches to induction support strengthened the partnership. The induction program grew to include multiple components of supports, including online resources, after-school seminars, full-day institutes, and various forms of mentoring. This article provided insight into potential tensions that may arise when collaborating to develop partnership induction programs, since university faculty and school-based administrators may have very different approaches to new teacher support.

Gaps in the School-University Partnership Literature and Implications for Research

All of the literature reviewed mentioned the lack of empirical research related to induction support within school-university partnerships. It is clear that the mentoring component of induction is more well-researched than other components. Universities commonly play a key role in developing professional learning for mentor teachers and providing them with ongoing support. In contrast, little research has been done on how universities support the specific needs of first-year teachers. With a focus on how a school-university partnership addressed induction support at the system level, this dissertation research makes an important contribution the literature on induction support in school-university partnership contexts.

Within the broader field of school-university partnership research, PDS partnership studies tend to focus on the experiences of pre-service teachers within partnerships; there are a lack of studies related to the effect of school-university partnership programs on the school district side of partnerships (Hunt, 2014). This research occurred within a PDS partnership model and focused on the needs and experiences of school district educators; thus, it also contributes to needed research related to school district experiences in partnerships.

In summary, the studies examined in this literature review reinforced that new teachers benefit from collaborative school-university partnership support, which influences new teacher job satisfaction, growth, and retention.

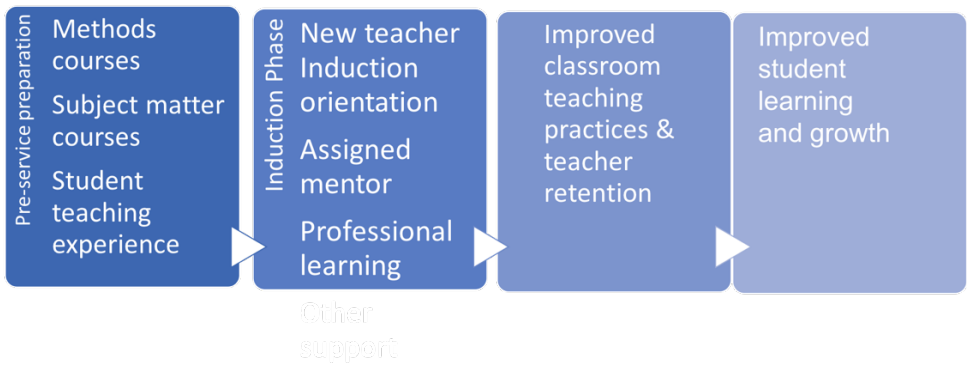
Considering Theories in Induction

One interesting commonality among the empirical literature related to induction support in school-university partnerships was the lack of theoretical frameworks. In examining the general induction studies literature, one commonly referenced theory is the theory of teacher development articulated by Ingersoll and Strong (2011). Their theory stated that the ultimate aim

of induction programs is to improve student learning and growth. New teachers begin their development in their pre-service preparation programs and then continue their development during the induction phase. Induction support can result in improved teaching practices and teacher retention, and these improved teaching practices can result in improved student learning and growth. This process is illustrated in Figure 5, which has been adapted from Ingersoll and Strong (2011, p. 203).

Figure 5

Theory of Teacher Development (Ingersoll & Strong, 2011)



While this theory is important to understanding how induction programs fit into the continuum of teacher development, this framework is fairly simplistic and does not address the myriad of issues that affect new teacher development along this continuum.

Relevance of Complexity Theory to This Study

Rather than use the theory of teacher development, I am confident that CAS theory was appropriate for my study's purpose. My review of studies related to induction support in school-university partnerships reinforced this— many referenced the multiple factors and forces that influence new teachers and the complexities to consider when designing induction programs. For example, Stanulis and Ames' (2009) study examined the complexities of learning to mentor

within an induction program. Gilles, et al. (2010) found that the complex interactions among teachers that resulted from combining an induction program and classroom-based action research served as a powerful agent for change within the school environment. Chubbuck, et. al (2001) argued for considering the complexity of new teacher support as an interactive process that includes person, school context, support context, and interaction between persons.

Within the context of school-university partnerships, Cochran-Smith's research on complexity theory in teacher education is often referenced. She and her co-authors described the emphasis of complexity theory on "multi-dimensional relationships and dynamic interactions among agents and elements" (Cochran-Smith, et al., 2014, p. 106). This is appropriate for the complex systems involved in teacher education, which include "individuals (teacher candidates, teachers, teacher educators, students, principals), classrooms, schools, school districts, teacher education programs/pathways and courses, professional learning contexts, school-university collaborations and supervision and/or mentoring arrangements" (Cochran-Smith, et al., 2014, p. 107).

More broadly, Strom and Viesca (2021) recently encouraged education researchers to incorporate complexity theories into their in educational research, saying "generating a complex theory of teacher learning-practice is nothing short of an ethical imperative" (p. 1). They argued that a complexity perspective can help educators understand how systems are working to facilitate or inhibit effective practices.

Given that the Covid-19 pandemic occurred in the midst of this study, the complexity of educational environments became even more pronounced. Van Nuland, et al. (2020) examined the effects of Covid-19 on teacher education from a complex adaptive systems perspective and argued that "there has never been a time when initial teacher education programs and their

various partners in elementary and secondary school (P-12) systems and universities have had to function amidst such uncertainty" (p. 449), though they are hopeful for the creativity and innovation that may emerge under such circumstances. As discussed in Chapter 3, this study did result in innovation under challenging circumstances by recognizing opportunities amidst complexity.

Literature Review: Boundary Spanning Leadership

School-university partnership work also falls within the broader field of community engagement scholarship, which

> emphasizes a shift away from an expert model of delivering university knowledge to the public toward a more collaborative model in which community partners play a significant role in creating and sharing knowledge to the mutual benefit of institutions and society. (Weerts & Sandmann, 2008, p. 74)

Many universities have partnerships with schools that are structured as outreach programs where services are provided one-way, from the university to a school. Alternatively, partnerships that are grounded in the principle of mutuality are two-way—the partners work with one another; each is equally invested and both partners benefit from the collaboration.

The PDS model of school-university partnerships is centered around the concept of mutual benefit (Teitel, 2011). Because this action research study occurred within a PDS context, it was guided by the concept of mutual engagement throughout the entire research process, including the planning, action, and evaluation of the study. This study should be of interest to engagement scholars, especially findings related to organizational structures and processes that support collaboration and engagement. In particular, boundary spanning leadership, an important

concept within the field of community of engaged scholarship, was important to this study, and a brief review of boundary spanning literature is included below.

Boundary Spanning Leadership

Leaders of community engaged programs are often considered boundary spanners—they bridge organizations and "act as conveners, problem solvers, and change agents who negotiate the wants and needs of parties in the process of creating and disseminating knowledge" (Weerts & Sandmann, 2008, p. 79). According to Weerts and Sandmann (2010), they also must have the ability to "negotiate power and balance between the organization and external agents to achieve mutual objectives and also represent the perceptions, expectations, and ideas of each side to the other" (p. 638).

Boundary spanning leadership is relevant to this study because in my professional role and in my role as a doctoral student researcher, I define myself as a boundary spanner who served as a bridge between the university a school district, working to develop programs that were mutually beneficial for students and educators in both institutions. This style of leadership also became increasingly important throughout the course of the action research study as both myself and my key partner at the school district used boundary spanning leadership skills to effectively facilitate the action research process.

Ernst and Chrobot-Mason (2011) developed a model of boundary spanning leadership to help leaders learn practices that facilitate effective bridge-building across different types of organizational boundaries. Three important practices for boundary spanning leaders include "managing boundaries, forging common ground, and discovering new frontiers" (Ernst & Chrobot-Mason, 2011, p. 8). Managing boundaries involves understanding what differentiates groups and then "buffering" (Ernst & Chrobot-Mason, 2011, p. 9) to create safety between

groups by monitoring and protecting the flow of information across boundaries. Forging common ground involves connecting people and bridging divided groups across boundaries, similar to connective leadership. Once boundaries begin to fade, leaders need to reframe boundaries to "develop intergroup community" (Ernst & Chrobot-Mason, 2011, p. 10). After groups have achieved interdependence, boundary spanning leaders facilitate the discovery of new frontiers where transformation occurs, enabling groups to move in new directions to realize emergent possibilities.

Research studies conducted by the Center for Creative Leadership (CCL) have found that there are five types of boundaries that boundary spanning leaders need to be attentive to, including vertical, horizontal, stakeholder, demographic, and geographic boundaries (Ernst & Chrobot-Mason, 2011). CCL studies found that horizontal boundaries are the most common boundaries that leaders encounter because organizations are typically siloed and divided into different departments or units with different functions. Sometimes these units work at cross-purposes and inter-group conflict is common. Boundary spanning leaders must work at the margins where these groups intersect to promote integration and harness "multi-dimensional expertise at the juncture between groups" (Ernst & Chrobot-Mason, 2011, p. 25). They must create the needed linkages to facilitate cross-organizational collaboration and move resources and ideas where they are needed most.

CCL research also revealed that the boundaries leaders find most challenging involve human relationships and are associated with strong emotions such as "loyalty, pride, respect, and trust" (Ernst & Chrobot-Mason, 2011, p. 19). Business executive leaders who were surveyed mentioned the importance of building positive relationships, communicating across silos,

building coalitions, and developing mutual interests in order to successfully lead organizations, all of which require attentiveness to human interactions.

As Chapter 3 and Chapter 4 discuss in more detail, boundary spanning leadership competencies, such as those described above, helped leaders to facilitate an effective an action research study within a school-university partnership context.

Purpose of Study

The purpose of this action research study was to explore complexity and social network theory-informed approaches to induction that support new teachers in the Atlantic County School District (ACSD)-University of the Atlantic (UA) partnership context. This study contributes to research related to CAS and social network theories in P-12 settings, teacher induction support, school-university partnerships, and action research.

Purpose of Project

The purpose of the action research project was to design, implement, and evaluate interventions that enhanced the ACSD induction program for new teachers. The project resulted in impactful new teacher support that may have resulted in improved teaching practices, increased job satisfaction, and/or increased teacher retention among the target population. The project also built professional capacity among all educators who were involved with the research process.

Research Question

My research is guided by one overarching question: *What is learned at individual, group, and system levels that advances theory and practice in the induction phase of teacher development in a school-university partnership context?*

Summary

This chapter framed the problem of new teacher retention within the research context and reviewed the literature related to Complex Adaptative Systems theory, social network theory, induction support in school-university partnerships, and boundary spanning leadership. The chapter also described how this study addresses gaps in school-university partnership literature related to induction support.

The three remaining dissertation chapters illuminate the specifics of this study. In Chapter 2, the action research methodology is described, including the process and data collection methods. In Chapter 3, the research story is told, including the data analysis that informed the process. The study's findings, conclusions, and implications for further research and practice are discussed in Chapter 4.

CHAPTER 2: METHODOLOGY

In Chapter 2, the study's methodology is discussed in-depth. The first section describes the study's design, action research methodology, and the application of action research in the research context. The second section describes the research participants and data collection, followed by the data analysis procedures used to develop the study's findings. The chapter concludes with my strategies for ensuring the study's trustworthiness and my researcher subjectivity statement.

Research Design

I approached my research design with a constructivist worldview. According to Creswell (2014), social constructivist researchers "look for the complexity of view rather than narrowing meanings into a few categories or ideas" (p. 8). Research questions are more general so that participants can construct their own meaning and the researcher can address the "processes of interactions among individuals" (Creswell, 2014, p. 8). In a constructivist paradigm, the inquirer (researcher) "is cast in the role of participant and facilitator" (Guba & Lincoln, 1994, p. 113) and findings are created as the research takes place (p. 111).

This particular worldview affected my choice of methodology and data collection methods for this study. I selected action research methodology, a social science methodology that is both constructivist and pragmatic. This methodology is increasingly being used to conduct empirical studies in a wide variety of contexts. Within the broad field of action research, this study fits into the category of action research for organization development (OD) and change.

According to Coghlan (2015),

> Organization development through action research is continuously evolving as it has the ability to adapt and respond to the variety of emerging challenges experienced by individuals, groups, organizations, communities, and societies…It involves collaborative research in that it has always espoused research with people rather than *on* or *for* them. (p. 421)

This type of action research is intervention-oriented and designed to solve particular localized problems within organizational contexts. Data collection may include qualitative, quantitative, or mixed methods.

Purpose and Research Question

As stated in Chapter 1, the purpose of this action research study was to explore complexity and social network theory-informed approaches to induction that support new teachers in the Atlantic County School District (ACSD)-University of the Atlantic (UA) partnership context.

The purpose of the action research project was to design, implement, and evaluate interventions that enhanced the ACSD induction program for new teachers. The project developed new teacher support that had the potential to result in improved teaching practices, increased job satisfaction, and/or increased teacher retention among the target population.

My research was guided by one overarching question: *What is learned at individual, group, and system levels that advances theory and practice in the induction phase of teacher development in a school-university partnership context?*

Action Research Methodology Overview

Action research aims to solve real organizational problems with a focus on conducting "research *in* action" rather than "research *about* action" (Coghlan & Brannick, 2014, pp. 5-6). Defined as "an emergent inquiry process" (Coghlan & Brannick, 2014, p. 5), the approach is participatory and democratic. The researcher is typically member of the organization who is invested in making sustainable, positive change together with a team of other organizational members.

There are several key characteristics of action research that distinguish it from traditional forms of research. First, action research recognizes the complexity of organizational problems and includes all types of data gathering to better understand these complexities. Second, the research occurs in real time within a specific context and is responsive to changing conditions of the workplace. Third, the action researcher serves as a facilitator of a team of co-researchers rather than a director of the research. Finally, all aspects of the research process are collaborative, including collecting and interpreting data and determining courses of action. (Coghlan & Brannick, 2014, pp. 5-6)

Action Research Process

The starting point for action research is identifying an important organizational need or problem that a researcher has a personal interest in solving. According to Coghlan and Brannick (2014), the issue must also be "red and hot" (p. 71), meaning timely and important to leaders and members of the organization. The researcher inquires into the many aspects of the problem, including having conversations with key stakeholders and organizational leaders to determine the context and purpose of the project. The researcher must be able to answer the question, "Why is this project necessary or desirable?" and the external context, including the economic, political,

and social forces that affect the organization, must be considered, as well as the internal inter-level dynamics that affect change (Coghlan & Brannick, 2014).

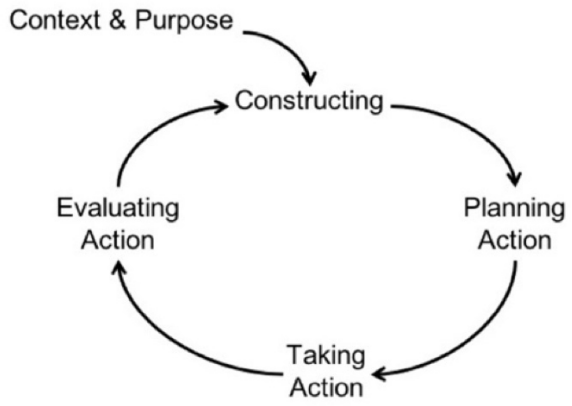
Once the need for the project is determined, the researcher builds an action research team of organizational members who are all interested in solving the problem and invested in becoming co-researchers in a long-term, collaborative process. The action research facilitator guides the action research team in a cyclical inquiry process that involves the following four steps, as outlined by Coghlan and Brannick (2014):

1. Constructing: the action research team verifies the problem of study in the research context, which includes collecting and examining data to better understand the problem and defining the organization's desired state upon the study's completion.
2. Planning: the team uses knowledge gained to design effective actions, which may include additional data collection using a variety of methods.
3. Taking action: the team collaboratively implements the planned action and collects data throughout the process.
4. Evaluating: the team evaluates the results of actions; intended and unintended outcomes are examined to determine the next cycle of planning, action, and evaluation.

This process, referred to as the action research cycle, is depicted by Coghlan and Brannick (2014, p. 9) in Figure 6.

Figure 6

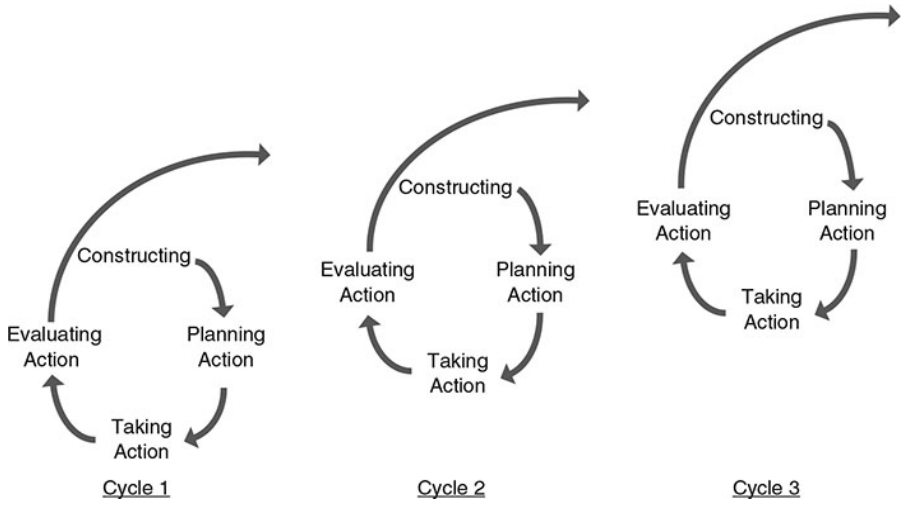
The Action Research Cycle



Action researchers complete several of these action research cycles before the research study is complete. Coghlan and Brannick (2014) referred to this as the "spiral of action research cycles" (p. 11) as illustrated in Figure 7. Each cycle informs the steps the team needs to take to begin the next cycle.

Figure 7

Spiral of Action Research Cycles



As Stringer (2014) described, the action researcher ensures a participatory process where action research team members function as co-researchers who collectively acquire knowledge through systematic data collection and analysis. The team members construct the plans, action, and evaluation together during each research cycle and hold one other accountable. The process is democratic and inclusive of all perspectives and voices. Team members are committed to continuous learning from one another. At every stage of the action research cycle, the team engages in personal and group reflection to ensure the rigor and validity of the process, as well as to ensure the functionality of the team itself.

When the research concludes, several results should be achieved, including (a) organizational improvement, (b) problems solved, (c) researchers experience personal growth, and (d) the workplace is enhanced for everyone (Stringer, 2014, pp. 1-20). Knowledge generated from the research is widely shared within the organization and useful tools, such as handbooks and project guides, are developed to assist with the sustainability of solutions. Even though the action research occurs within a specific organizational context, the study should generate knowledge that can be shared beyond the setting (Herr & Anderson, 2015). The research facilitator strives to publish the action research study in scholarly journals, so that the knowledge generated has "transferability" (Herr & Anderson, 2015, p. 6) to similar organizational contexts.

Stringer (2014) cited evidence that suggests that centralized programs and solutions generated by outside experts have limited success in resolving problems. Solutions developed by members of an organization who are invested in the success of the organization are likely to be more successful and sustainable. Thus, organizational leaders are increasingly recognizing action research as a valid, rigorous method for solving complex, real-world problems.

Action Research in My Research Context

Action research was a particularly appropriate methodology for research within my school-university partnership context. The democratic principles that guide action research teams were already embedded in the partnership culture. Our partnership, referred to with the pseudonym Atlantic Professional Development Schools (APDS), historically made decisions collaboratively, and we had track record of developing programs together using the action research cycle of constructing, planning, taking action, and evaluating. For example, after learning about the extent of summer learning loss in our community, the APDS co-planned and implemented a partnership summer enrichment program for Kindergarten through eighth grade students. After each summer, we evaluated the program based on data collected and adjusted the program to improve it for the following summer.

I approached this research as both an insider and an outsider because I was an insider on the university side of the partnership, but I also actively collaborated with an outside organization, the school district. My unique positionality had advantages for collaborative research, referred to as "insider/outsider team research" by Bartunek and Lewis as cited in Herr and Anderson (2015, p. 39). This type of research involves the "reciprocal collaboration" (Herr & Anderson, 2015, p. 40) of insider/outsider teams, which can contribute to improved practice and has the potential for organizational transformation. I had worked in the APDS partnership for seven years prior to the research beginning, which gave me the positionality to conduct insider/outsider research. My action research study was an opportunity to strengthen our partnership for the mutual benefit of both institutions.

Study Participants

Because the purpose of the study was to make change at the systems level of the organization, it involved a large group of participants. In any given year, ACSD typically had approximately 600 new teachers who were in their first-, second- or third year of teaching. Over the course of two years, this study included 700 participants who were educators from multiple levels of the ACSD system, as well as UA faculty. By far the largest participant group were induction phase teachers, which included 637 ACSD teachers, representing three sets of new teachers who each began working in the district during different time frames. Table 3 below shows the different participant groups, the number of participants in each group, and the data collection methods used with each set of participants.

Table 3

Action Research Study Participants

Participant Group	Number	Data methods
2018-19 First-, second- and third year ACSD teachers	258	Survey
2019-20 New ACSD Teachers	178	Two surveys, observation
2020-21 New ACSD Teachers	201	Two surveys, observation, focus group
ACSD Lead Mentors	5	Focus group
ACSD New Teacher Orientation (NTO) facilitators	25	Observations, survey, documents
ACSD NTO Design Team Members who are not captured in other participant groups	2	Documents (meeting notes, recordings, handouts)
ACSD Induction Support Team members who are not captured in other participant groups	21	Documents (meeting notes, recordings, handouts)
Action Research Team (3 ACSD and 4 UA members)	7	Semi-structured interviews, documents (meeting notes, recordings, written reflections)
Additional UA faculty not on action research team	2	Semi-structured interviews, documents
UA Lead Researcher	1	Documents (research journal and notes, reflection memos)
Total # of ACSD and UA educators	700	

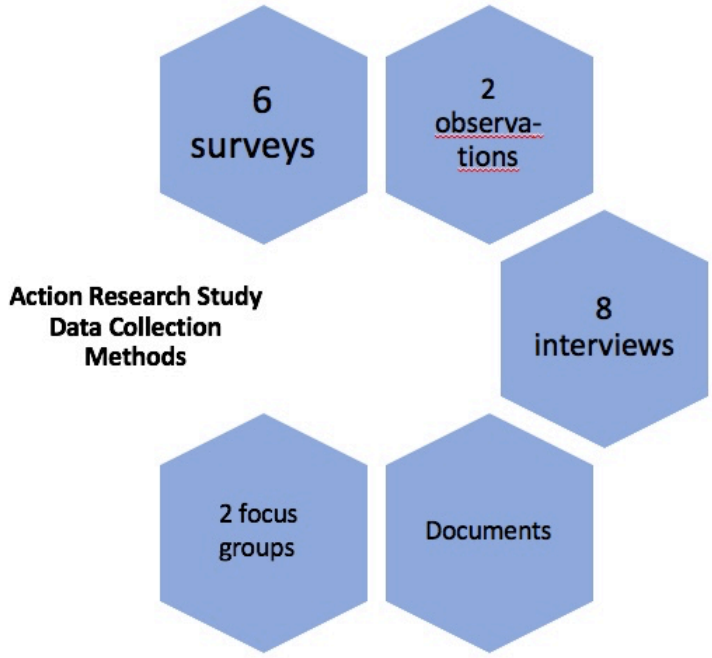
Data Collection Methods

As Creswell (2014) recommended, a research process must begin with understanding the "natural setting" (p. 185) where the study will be conducted to understand more about the nature of the problem. Since action research studies are typically qualitative or mixed method studies,

they involve gathering data using multiple data collection methods to answer the research question. My research plan included five different methods, including surveys, documents, focus groups, interviews, and observations, as shown in Figure 8.

Figure 8

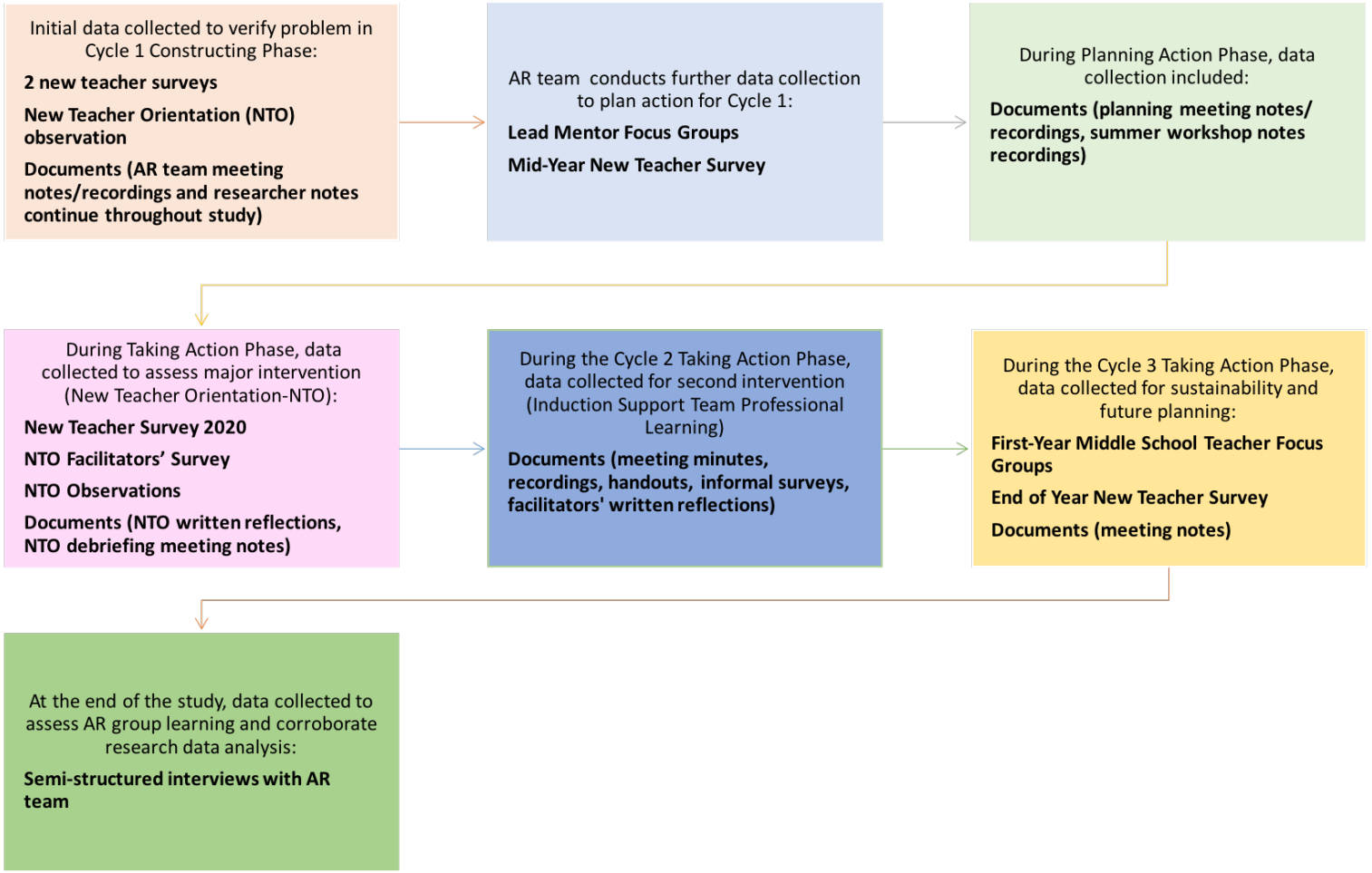
Action Research Study Data Collection Methods



The study's initial data collection included two surveys, documents, and an observation. Subsequent data collection was initiated and developed by the action research team, including data collection related to our two interventions. Each decision to collect data was purposeful and was built a logical chain of evidence over time to determine the study's findings. This chronological sequence of data collection from May 2019 through June 2021 is shown in Figure 9 and described as part of the action research story in Chapter 3.

Figure 9

Chronological Sequence of Data Collection to Build Study's Evidence



To provide more data collection details, Table 4 provides a comprehensive overview of the data collection methods, names of data collection instruments, sample size and participants, dates of data collection, and the level of the system that the data assessed (individual, group, or system) in this study. Following the table, the five data collection methods are described in detail, including a description of each method, the purpose of the data collection, how the method was used to collect data, and the sample size, if relevant. These methods primarily collected qualitative data, but the surveys also collected quantitative data.

Table 4

Data Collection Plan

Data Collection Methods	Name	Sample/Participants	Date	Level
Surveys	Induction Teacher Survey	258 1st, 2nd, and 3rd year ACSD teachers	May 2019	System
	New Teacher Survey	178 new ACSD teachers hired for 2019-20	July 2019	System
	Mid-year New Teacher Survey	95 teachers who started teaching in ACSD in 2019-20	February 2020	System
	New Teacher Survey	201 new ACSD teachers hired for 2020-21	July 2020	System
	New Teacher Orientation (NTO) Facilitators' Survey	21 NTO ACSD facilitators	July 2020	System
	End of Year New Teacher Survey	100 new ACSD teachers who completed first year in district in May 2021	May 2021	System
Document Collection	3 types of induction program documents • State-level • District-level • Partnership-level	N/A	May 2019-June 2021	System
	Action Research Team Meetings, including Audio/Video Recordings, Meeting Minutes, Handouts	8 Action Research Team members	August 2019 - June 2021	Individual, Group, and System

Type of Data Collection	Name	Sample/Participants	Date	Level
Document Collection (continued)	Personal Journal Entries and Research Notes	1 Researcher	August 2019-July 2021	Individual
	Critical Milestone One and Two Reflection Memos	1 Researcher	September 2019 & February 2020	Individual
	Online Community Building and Facilitation Workshop video-recordings, notes, chat record, handouts	25 NTO Facilitators	June & July 2020	System
	NTO Action Research Team Critical Incident Written Reflections	5 Action Research Team Members	August 2020	Individual and System
	NTO Debrief Meeting notes	40 NTO Design Team members and NTO facilitators	August 2020	System
	Induction Support Team (IST) Professional Learning Sessions-meeting notes, chat records, informal surveys, handouts	56 IST Members, including school-based instructional coaches, lead mentors, and behavioral specialists	August-December 2020	System

Type of Data Collection	Name	Sample/Participants	Date	Level
Document Collection (continued)	IST Facilitator Written Reflections	3 IST facilitators	January 2020	Individual and System
Focus Groups	Lead Mentor Focus Groups	5 ACSD Lead Mentors (veteran teachers)	January 2020	System
	First-Year Middle School Teacher Focus Group (virtual)	6 ACSD first-year middle school teachers	March 2021	System
Semi-Structured Interviews	End of Year Interviews with Action Research Team Members (virtual)	7 Action Research team members and one additional UA faculty member	June 2021	Individual, Group, and System
Observations	New Teacher Orientation 2019 Observation	180 new ACSD teachers hired for 2019-20	July 24-25, 2019	System
	New Teacher Virtual Orientation 2020- Coaching Session Observations and Large Group Observation	70 new ACSD teachers were observed in 5 small groups of 10-18 teachers during coaching conversations	July 22-24, 2020	System
		200 ACSD new teachers and facilitators were observed in large-group NTO sessions		

Surveys

The purpose of surveys, often referred to as "questionnaires," is to efficiently gain a broad perspective on the research topic and to "generalize from a sample to a population so that inferences can be made about some characteristic, attitude, or behavior of this population" (Creswell, 2014, p. 157). Surveys can be used to collect both quantitative and qualitative data. In this study, survey participants were purposefully selected and asked for information reflective of their lived experiences, so the study's surveys were primarily a form of qualitative research (Creswell, 2014, p. 189). As shown in Table 4 above, six surveys were conducted throughout the course of this research. Three different sets of new ACSD teachers were participants in five of the surveys.

Each survey served a different purpose for the study. The first two surveys (May 2019 and July 2019) were conducted early in the study to gain baseline information from induction teachers to better understand the challenges new teachers were facing in research context and the types of induction supports and professional learning teachers were interested in. At the start of the second year of the study, the 2020 New Teacher Survey was important to assess the impact of the New Teacher Orientation intervention. Both the Mid-Year (2020) and End of Year (2021) surveys were followed up on two different sets of new teachers' experiences over time—the results helped guide action research team decisions about interventions.

In addition to the five new teacher surveys, one additional survey was conducted with educators who facilitated the New Teacher Orientation (NTO) intervention to learn more about their experiences with the intervention and professional learning that prepared them to facilitate.

Survey Design

To design the surveys, I considered Creswell's (2014) recommendations related to defining the population and sample (p. 158). The primary purpose of surveying new teachers was to learn about their teaching and induction experiences, as well as their confidence level in teaching and the types of support and connection they received and were interested in receiving.

To design the initial surveys, I examined four different surveys that were used in other teacher induction research studies to guide the development of survey questions. Using questions from prior research studies helped to ensure content validity—that meaningful information related to the purpose of the study would result. I also met with SOE administrators get input on questions relating to teacher preparation so that the results could provide useful information for the university's teacher preparation program. I worked with ACSD administrators to further refined the questions so that they aligned with the district goals and priorities, as well as state teaching standards. The surveys included quantitative questions, including many questions that used a 5-point Likert scale, as well as one, two or three open-ended qualitative questions in order to capture additional feedback and recommendations. After the initial two surveys were conducted, the action research team members were involved in subsequent survey designs. An example of one of the surveys, the New Teacher Survey-July 2019, is included in Appendix A.

To ensure the reliability of the surveys' quantitative data sections, I asked ACSD administrators and action research team members to review and test the surveys before they were administered. To ensure ongoing reliability of the surveys, the action research team continually compared data from each survey with subsequent surveys.

All surveys were developed using Qualtrics software, which is a common web-based survey tool. The surveys were distributed through emails to participants that included a hyperlink

to the survey and a description of the survey's purpose. After the surveys closed, I used the Qualtrics software to create a variety of different survey reports so that stakeholders could examine the data in different ways. I typically created an overall report, and then used the survey filtering tool to create reports by school, grade level, teaching experience (no teaching experience or prior teaching experience), and teacher preparation program. These reports were then shared with various stakeholder groups, including principals, lead mentors, and SOE administrators.

Sample sizes. The number of participants in each survey varied from 21 New Teacher Orientation (NTO) facilitators to 258 first, second-, and third-year teachers. The sample size for each survey is shown in prior Table 4.

Document Collection

According to Creswell (2014), qualitative document collection can include gathering public documents, such as newspaper articles, meeting minutes, and official reports, as well as private documents, such as personal journals (p. 190). Collecting documents can help the researcher gain an understanding of the broader landscape of the issue being studied and information related to the topic in the research context. Document collection was ongoing throughout the study and was used to answer the research question at the individual, group, and system levels. As shown earlier in Table 4, documents included action research team meeting minutes, personal research notes, and participants' written reflections, among many others. Documents were stored electronically, as well as in paper records, to provide an audit trail for this study.

Focus Groups

Focus groups, also referred to as group interviews, have the advantage of providing multiple perspectives on the research topic that may not be possible to obtain through the documents and surveys (Creswell, 2014, p. 191). The researcher elicits views and opinions through interviews by asking "unstructured and generally open-ended questions" (Creswell, 2014, p. 190) within a group of six to eight participants. This study included four focus groups with two different types of ACSD teachers, as described in the following section.

ACSD Lead Mentor Focus Groups

The first two focus groups were conducted in January 2020 with five lead mentor teachers during the constructing phase of the research. Lead mentors were veteran teachers who played a key role in the district's induction program. One purpose of the lead mentor focus group was to learn more about how the district's new induction program was being implemented and gain further insight into the New Teacher Survey results from July 2019. Another purpose was to gain a better understanding of the complexity of the environment in which the induction program operated, as well as the extent to which social relationships played a role in induction (related to social network theory). I developed focus group questions and protocols and asked the action research team to review them and offer feedback. A selection of focus group questions is included in Table 5 below.

Table 5

ACSD Lead Mentor Focus Group Questions

	ACSD Lead Mentor Focus Group Questions
Q1.	When surveyed, ACSD induction teachers reported that they need more general "support" but often did not define what they meant by the word "support". Based on your experience with new teachers at your school, what specific support do you think they will require during the second semester?
Q2.	What barriers do you think impede the implementation of a successful ACSD induction program?
Q3.	In what ways do you think that UA faculty could enhance the ACSD induction program—with lead mentors, mentors, or new teachers?
Q4.	Action research team intervention ideas include *creating professional learning communities for induction teachers, offering professional learning days for mentor-mentees together, and content-based professional learning*. Which of these activities would be most beneficial for new teachers?
Q5.	If you had to choose one area that the induction program should focus on to offer impactful support to new teachers, what would it be?
Q6.	When surveyed, new teachers said they were most interested in the following 3 areas of professional learning: *content-based or subject-specific professional learning, classroom management, and social emotional learning/building relationships with students*. Are the teachers in your school participating in professional learning in these areas? What is working well and what needs improvement?
Q7.	Besides leading professional learning, what other induction activities have you engaged in with mentors and/or induction phase teachers? For example: classroom observations, discussions of challenges, etc.? What do you think mentors and/or induction phase teachers are learning from these activities that helps improve their practice?

Sample size. All lead mentors had an equal opportunity to participate in the focus group—they were sent a brief survey by email where indicated their interest and availability in participating. My goal was to have between six and eight participants in the focus group, as recommended by Creswell (2014). Four teachers participated in one group and one in the other, due to last minute scheduling conflicts. At the beginning of the focus groups, the participants

were asked to sign research consent forms agreeing to the focus group being audio-recorded and that pseudonyms would be used to protect individuals' identities. These research consent forms and subsequent consent forms discussed in this chapter were approved by the university's Internal Review Board (IRB); examples of these forms not included in order to protect the confidentiality of the research site. The audio transcripts from the focus groups were transcribed to develop themes.

First-Year ACSD Middle School Teacher Focus Groups

Near the end of the study, in March 2021, I conducted two virtual focus groups using Zoom with six first-year ACSD middle school teachers. The purpose was to learn about new teachers' experiences with the ACSD induction support program during 2020-21. Data collected would be used to help our partnership develop additional induction support programming to increase new teacher support and retention in 2021-22. Middle school teachers were selected because the action research team had determined that future interventions would focus on the middle school level where teacher turnover was highest in the district. An action research team sub-committee co-constructed the focus group questions. A selection of focus group questions most relevant to the study are included in Table 6 below.

Table 6

First-Year ACSD Middle School Teacher Focus Group Questions

First-Year ACSD Middle School Teacher Focus Group Questions	
Q1.	To start us off, please share a success or something you are proud of from your first year of teaching.
Q2.	When we surveyed new teachers in July, we learned that the induction support activities you all were most interested in included *collaborative planning time, regular time with mentors during school hours, access to principals/administrators, and release time to observe other teachers*. Which of these is most important to you now? How does your school facilitate or impede that priority?
Q3.	How do you experience support from the induction support team at your school (lead mentor, mentor, instructional coach, behavior specialist) and from your mentor?
Q4.	What kinds of induction support do you think you might need the most next year - in your second year of teaching?
Q5.	When we surveyed new teachers in July, we learned that the professional learning you were most interested in included *content-based or subject-specific professional learning, classroom management, social emotional learning/building relationships with students, and diversity/equity in the classroom*. What professional learning would be most beneficial to you right now? What would be most beneficial during your second year of teaching?
Q6.	As a result of this study, this year UA faculty were involved in redesigning the New Teacher Orientation and other induction support activities. In thinking about next year's programming, our ideas include *creating professional learning communities for new teachers, offering professional learning days for mentor-mentees to observe and lesson plan together, and offering content-based professional learning for new teachers*. Which of these do you think you'd find most beneficial? Do you have other ideas for how UA faculty could continue to enhance the ACSD induction program?
Q7.	If you had to choose one area that the ACSD induction program should focus on to offer impactful support to new teachers, what would it be?

Sample size. All middle school first-year teachers had equal opportunity to participate—they were invited through an email sent to them by lead mentors at their schools that I had written. The two virtual focus groups included five teachers in one and only one teacher in the other due to last-minute scheduling conflicts. All participants had signed, scanned, and emailed

me their research consent forms prior to the focus group, acknowledging that the focus groups would be video-recorded and that pseudonyms would be used to protect individuals' identities. The Zoom video-recordings of these focus groups were transcribed and coded to develop themes.

Semi-Structured Interviews

Another common qualitative research method involves interviewing research participants one-on-one using semi-structured interviews. The researcher elicits views and opinions through a set of predetermined questions that are "unstructured and generally open-ended" (Creswell, 2014, p. 190). Interviews can be conducted face-to-face, virtually, or by email.

At the end of this study, I conducted eight semi-structured interviews in a virtual format using Zoom. The primary purpose of the interviews was to help answer my research question related to group level learning during the action research process, but participants were also asked about individual and systems-level learning to corroborate and elaborate on other data collected throughout the study.

My interview questions were developed with support from my advisor and shared with the action research team members prior to the interviews. A selection of the interview questions is included in Table 7 below.

Table 7

End of Study Action Research Team Interview Questions

	Interview Questions
Q1.	Reflecting on your engagement as a member of UA-ACSD induction action research team, please share a specific experience that stands out to you as a high point (examples: team meeting, involvement with an intervention, a personal insight you gained, etc).
Q2.	Please share an experience as a member of the UA-ACSD induction action research team that was a low point for you.
Q3.	As you know, in action research studies, learning and change occurs at the individual, group, and system levels. Please share something you learned on an individual level from the action research process.
Q4.	Please share something that was learned at a group level among the action research team from the action research process.
Q5.	How would you describe how the team's interventions, such as the New Teacher Orientation redesign, enhanced the ACSD induction program? Describe the role that you believe the UA-ACSD partnership collaboration played in this.
Q6.	As you look to the future, what are the most important structures, supports, and/or resources needed to sustain UA-ACSD induction program collaboration?
Q7.	What surprised you the most about your engagement in this research collaboration?

Sample size. Eight semi-structured interviews were conducted—seven participants were action research team members and one was a UA faculty member who had been actively involved in implementing interventions during the study. All of the research participants signed informed consent forms that were approved in my IRB. Each agreed to participating in a video-recorded interview with a pseudonym to protect his or her identity. Interviews were recorded on Zoom and then transcribed. Interview quotes used in this dissertation were member checked (reviewed and approved by participants to ensure credibility).

Observation Data

A qualitative observation involves the researcher taking field notes "on the behavior and activities of individuals at the research site" (Creswell, 2014, p. 190). Collecting observation data gives the researcher an opportunity to gain firsthand experience with the participants and an opportunity to record information as it occurs (Creswell, 2014, p. 191). A researcher may choose to be involved at varying levels ranging from being a non-participant to a complete participant. Typically, an observation protocol is developed ahead of the observation to focus the attention of the researcher. Two types of observations were conducted in this research study, as described below.

2019 ACSD New Teacher Orientation (NTO) Observation

The first observation was conducted at the beginning of the study at the ACSD New Teacher Orientation (NTO) in July 2019. The purpose of the observation was for me as the lead researcher to better understand the district's induction program goals and learn more about the new group of teachers beginning to work in the district. After reviewing several observation protocols, I developed one with guiding questions to focus my attention during the orientation. For two day eight-hour days, I took extensive typed field notes at all of the large-group sessions. When the participants divided into small groups for focused professional learning, I rotated among groups to observe different grade levels and subject areas, continuing to take field notes.

Sample size. Of the 200 new teachers hired by the district for 2019-20, 180 teachers attended New Teacher Orientation and served as the sample for this observation. Approximately half were first-year teachers and half had already had prior teaching experience in other districts. The teachers represented all levels from pre-Kindergarten through twelfth grade. During the NTO, I verbally informed the participants of the research observation and gave them my contact

information so that they could email me if they had any questions or concerns. I also omitted the names of all new teacher participants in my field notes in order to protect their identities.

2020 ACSD New Teacher Orientation (NTO) Observations

The second set of observations was conducted during the ACSD Virtual New Teacher Orientation (NTO) in July 2020. Five action research team members, including myself, were participant-observers in pre-assigned NTO small group "coaching conversations." In this type of observation, researchers are free to participate in conversation but are also observers during the session; each individual's role as a researcher is also made known to the group (Creswell, 2014, p. 191). These one-hour sessions took place on Zoom each of the three days of the NTO. The primary purpose was to learn about new teachers' needs, strengths, and challenges to help inform future partnership induction support interventions. I also observed the NTO large-group sessions over the course of the three days to document the other components of the orientation.

With feedback from the action research team, I developed an observation protocol that we used for the coaching session observations. The protocol included both descriptive and reflective prompts, as shown in Appendix B. Excerpted instructions from the protocol are included in Table 8 below.

Table 8

ACSD New Teacher Orientation Coaching Conversation Observation Protocol Excerpt

Descriptive Notes on **Participants'** involvement in Coaching Session, which may include: *Questions, Concerns, Level of Engagement, Body Language (including choice of camera turned on or off), Method of Participation (verbal or chat), and Level of Content Understandin*g: I noticed…
Reflective Notes on **Participants'** involvement in Coaching Session (your interpretations/impressions/questions about the session): I wonder…

Sample Size. Each of the five participant-observers observed small groups of 10-18 participants, so approximately 70 new ACSD teachers and facilitators were observed during the coaching sessions. Each observer shared observation notes on a Google drive after the NTO, and we held a debriefing meeting to compile common themes among the observations. Two hundred ACSD teachers and facilitators were observed during the NTO large-group sessions. All NTO participants were verbally informed about the observations at the start of NTO and information about the study, including my contact information, was included on the NTO agenda for all participants.

Data Analysis Procedures

The qualitative data from the surveys, focus groups, interviews, observations, and documents was analyzed to answer the research question. My two primary data analysis methods were coding and system mapping, which are described in detail in the following section.

Coding

The majority of my data analysis involved coding my qualitative data to make meaning and determine findings. Coding was a multi-stage process that involved data preparation, "a priori" code development, familiarization with the data, and finalizing a coding scheme. After coding was complete, the analysis involved generating meaning and triangulating the data using analytic strategies and techniques.

Data Preparation

Before the coding began, I prepared the document, interview, focus group, observation and survey (qualitative questions) files. This involved cleaning up the transcripts for accuracy, removing names to preserve anonymity, and selecting the data for coding that was most relevant to the research study. To ensure the accuracy of the interviews, observations, focus groups, and

selected documents, the action research team members who had participated in the data collection "member checked" the data. Member checking involves participants verifying that the research accurately represents their perspectives (Creswell, 2014, p. 201). I selected Atlas.ti software to use for my coding process and participated in an Atlas.ti workshop to learn how to use the tool effectively for qualitative data analysis.

Coding Phase 1

Before I began my coding process, I developed a list of "a priori" codes and created a draft coding scheme. According to Miles, et al. (2020), a priori codes can serve as a "provisional 'start list' of codes" (p. 74). I decided to focus on two main categories of codes for my initial list—codes related to my theory and induction support activities. The initial codes related to my theory were deductive, as they were based on my literature review related to Complex Adaptive Systems theory and social network theory. The initial codes related to new teacher induction support were primarily inductive codes that had emerged throughout the research process from ongoing data examination and analysis with my action research team. I then added these codes into the Atlas.ti software in the code manager, including brief descriptions of the definition of each code, and assigned the codes to different code groups of similar concepts.

I used my focus group data for my first round of coding. During the initial coding process, I added additional codes and sub-codes and began adding comments each time that I coded chunks of text to help me better understand my decision making for my coding choices. I also considered the types of codes that I had developed by referring to Miles, et al. (2020). I learned that my a priori codes were primarily concept codes, descriptive codes, and process codes (Miles, et al., 2020), which was helpful to understand the types of data that I was finding in my analysis. I then completed a second round of coding with the focus group data.

Data Familiarization

After this initial coding exercise, I began the process of familiarization, which involves "immersing in the data much more deeply" (Ruona, 2005, p. 240). I read through the most important pieces of data multiple times, asking questions of it and writing comments to "reflect on the overall meaning" (Ruona, 2005, p. 240) of the data. This helped me to gain a big picture sense of the data and determine additional codes that I would likely need before the next phase of the coding process.

Coding Phase 2

I then coded all of the data in Atlas.ti and continued to add new codes as needed to my coding scheme. Table 9 shows the key codes included in my coding scheme. Many data sets required multiple rounds of coding, as themes emerged throughout recursive deductive and inductive process data meaning making.

Table 9

Coding Scheme

Coding Scheme					
SOCIAL NETWORK THEORY (SNT) & COMPLEXITY THEORY (CPX)	INDUCTION SUPPORTS	TEACHER CHALLENGES	VARIOUS TEACHER & STUDENT TOPICS	SCHOOL-UNIVERSITY PARTNERSHIP	ACTION RESEARCH LEARNING & PROCESS
SNT SREL: Relationships with students	MEN: mentoring process/support	Covid-H: Health concerns related to Covid	SES: Socio-economic status of students	MB: Mutual benefit	PROC: AR Process
SNT AREL: Relationships with adults	IST: Induction Support Team	Covid-T: Teaching format affected by Covid	MEET: school meetings	CONST: Co-construct	DATA: use of data in AR
SNT COMM: Community of adult learners	ADMIN: school administrators	BEH: Student Behavior	INST: Instruction (general)	SUP TRUST: Trust in partnership	SM: System mapping
SNT COLLAB: Group collaboration & Co-Construction	Co-PLAN: Collaborative planning	TIME: Lack of time for teacher activities	STENG: Student engagement and motivation to learn	BS: Boundary spanners	ALYZ: Analyzing
SNT TRUST: Trust in groups, orgs	TECH: technology tools (Google classroom, etc)	STRESS	SEL: Social-Emotional Learning for educators and students	ORG CULT: Org culture in univ and school district	AR REFL: AR Team Reflection

SOCIAL NETWORK THEORY (SNT) & COMPLEXITY THEORY (CPX)	INDUCTION SUPPORTS	TEACHER CHALLENGES	VARIOUS TEACHER & STUDENT TOPICS	SCHOOL-UNIVERSITY PARTNERSHIP	ACTION RESEARCH LEARNING & PROCESS
CPX EMER: Emergence, unexpected outcomes	OBS: Observing other teachers	WB: Adult Well-being	TCH REFL: Teacher Reflection	SUP LEAD: Leadership in partnership	INV: Innovation, generative
CPX DYN: Dynamic, always changing	IACT: Induction support activities	FLEX: need for constant flexibility in teaching	PREP: teacher preparation programs	STR: Structures	AR LEAD: leadership related to AR team members
CPX NEST: Nested systems; systems inside of systems that affect one another	PLC: Professional Learning Communities	CRAZY: description of school year	SCH CULT: School culture	SUP FUND: Funding, Budget for partnership	DIA: Dialogue & Conversation
CPX ADAP: Adaptive, responsive to change, flexible	INST RES: Instructional Resources		SCH FUND: Funding for schools	TIME: SUP	MOM: Momentum, Energy, Urgency
	CAP: Building leaders' capacity			UA IMPACT: Impact on University	RES: Respect
					TIME: AR Team
					TRUST: AR Team
					LIST: Listening
					VIS: Vision and Purpose

Generating Meaning

After coding the documents, I began to interpret the data as a whole. I looked at the number of times each code was used and examined at the comments related to the most prevalent codes. I then began the "generalizing and theorizing" (Ruona, 2005, p. 245) part of my data analysis, examining the data for patterns and writing analytic memos that captured consistent themes that emerged across different data sources and data methods. I also determined my analytic strategy and techniques to triangulate the data, which are described in detail later in this chapter.

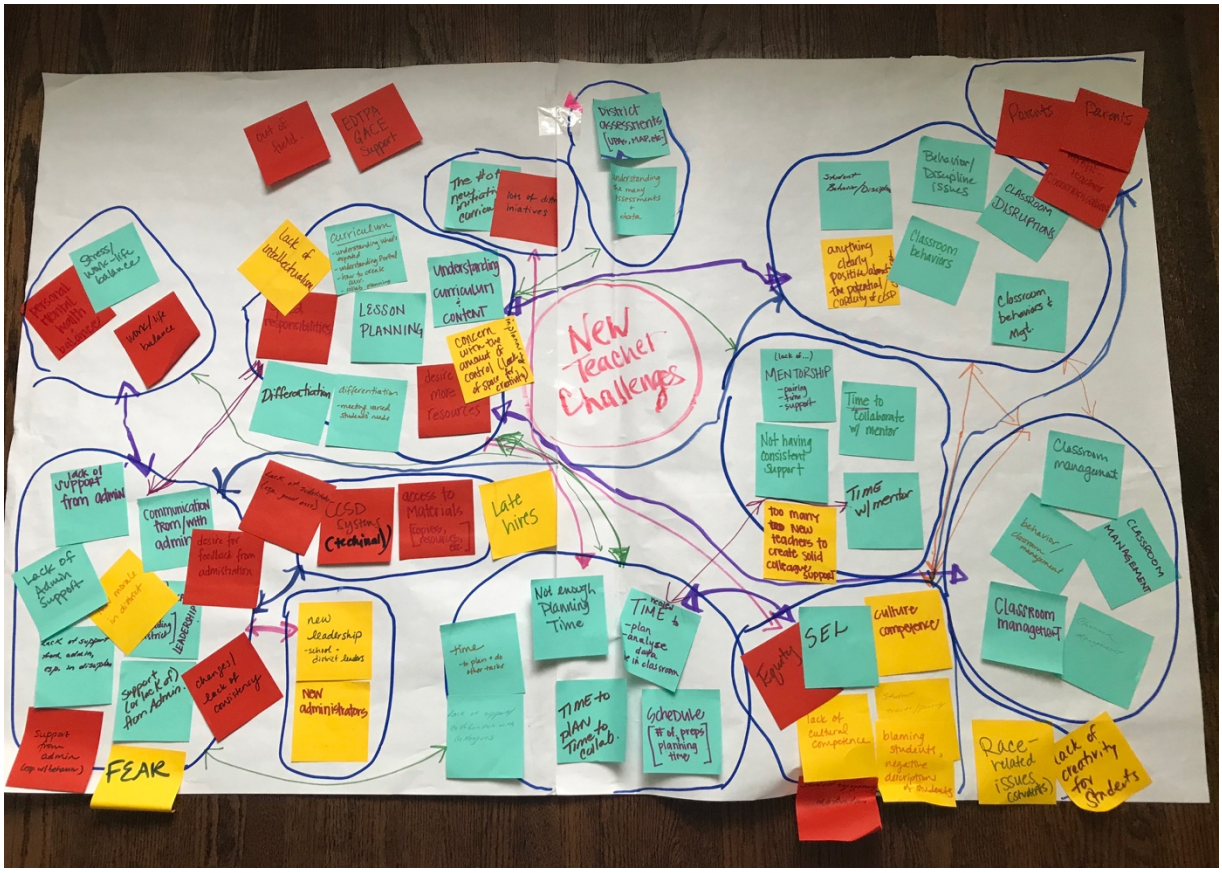
System Mapping

Another data analysis method that I used in the early stages of the study was a group analysis process called system mapping. The open-ended questions in the Induction Teacher Survey with ACSD first, second-, and third-year teachers in May 2019 produced a vast amount of qualitative data, including eight pages of comments related to challenges new teachers faced. Creating a system map with the action research team helped us to analyze this extensive teacher feedback as a group. Prior to our October 2019 action research team meeting, everyone read and took notes on the teacher "challenges" comments. At the meeting, each member used color-coded post-it notes to write down the biggest themes that they noticed, the outlier themes they identified, and items they felt should be included in the data. We then clustered the themes into many different categories, which required deep thinking and dialogue. The vast array of challenges included categories such as lack of planning time, classroom management problems, lack of student motivation, and lack of administrator support. We then drew connections among the themes, as illustrated in Figure 10. We discovered how inter-related most of the challenges

were, which confirmed the complexity of new teachers' challenges within a complex adaptive system.

Figure 10

System Mapping Data Analysis



Note. The photograph shows the system mapping data analysis activity with themes from the May 2019 ACSD Induction Teacher Survey comments related to their top three challenges.

At our next meeting, we created a second system map related to the suggestions for improving new teachers' job satisfaction that also came from teachers' survey comments. We then compared the two maps and developed key themes as a team. Overall, we noticed that time constraints and lack of support and communication were underlying themes. Key themes and insights from this process are summarized in Table 10.

Table 10

System Mapping Analysis Key Themes and Insights

Themes from Induction Teachers Survey comments related to challenges & ideas to increase job satisfaction
Lack of time for planning, collaborating, professional learning, induction activities is major issue
Lack of support and communication from school administration and/or district's central office is major issue
School administrators' instability affects school cultures, which leads to problems in following areas: • Curriculum and instruction • Student behavior and classroom management • Lesson planning • Relationships with students, administrators, colleagues

This time-consuming group data analysis helped us to understand the complexity of the systems-level story that the teachers told us through the survey, and this data analysis guided much of our work throughout the study.

Triangulating Data

After coding and developing themes from each data collection method, I triangulated all my qualitative data to answer my research question at the individual, group, and system level. Triangulation involves comparing data from multiple sources to corroborate findings (Yin, 2018, p. 128). The triangulation process occurred in two phases. The first phase involved finding common themes among data collection methods, and the second phase involved triangulating the common themes using an analytic strategy and technique.

Triangulating Across Methods to Find Themes

In the first phase of my triangulation, I compared my data analysis from each method to converge all of my evidence related to the action research study interventions. I created tables for each intervention, including the themes from all of the data sources. Table 11 is an excerpt from

the table created for my New Teacher Orientation (NTO) intervention. When I found similar themes across multiple methods, such as relational leadership, community-building, and inquiry principles (dialogue and listening), I highlighted each theme in a distinct color to see how prevalent each theme was across the different data sources.

Table 11

New Teacher Orientation (NTO) Intervention Data Triangulation Related to Themes

New Teacher Orientation (NTO) Intervention Data Triangulation					
Data Methods & Sources					
Interviews AR Team Interviews	Documents AR Team NTO CIT Written Reflections	Documents NTO Debrief Meeting (NTO Design Team & NTO Facilitators)	Survey NTO Facilitator Survey (Quant & Qual)	Survey New Teacher Survey (Quant & Qual)	Observations NTO Coaching Session Observations (AR Team)
Theme summary from each data source					
• AR process, esp. the data from the research (community focus) had a huge positive impact on NTO and, thus, new teacher support • Coaching conversations encouraged reflection, dialogue, inquiry • Matthew's relational leadership was key to success of NTO, esp. listening and showing people were valued and he communicated vision	• AR process had positive impact on success of NTO • Matthew's relational-oriented leadership huge-made everyone feel valued, welcome, professional • The new teachers felt connection with one another, access to resources, and lots of EXCITEMENT • The collaborative nature of the entire process and all groups involved led to positive result	• Facilitators built community & relationships in short amount of time—they prioritized dialogue, inquiry, listening • Teachers engaged with sessions and made connections with one another-felt supported and like a family • NTO lessened anxiety • Energy and interest in equity conversations, the equity PL well-received • Facilitators collaborated well and built trust with one another which led to good flow in sessions	• All agreed or strongly agreed teachers were interactive and engaged in coaching sessions • 85% agreed or strongly agreed teachers understood content and made progress toward learning goals • All agreed facilitators built community among teachers and helped them make connections with each other • All agreed coaching sessions were beneficial for new teachers	• 99% said NTO provided with tools and resources to ensure success in first year teaching in ACSD • 98% said NTO helped make connections with other teachers Comment Themes were: • Matthew's inspiring/relational leadership • Appreciated inquiry/dialogue and comfortable asking questions	• Facilitators' capacity had been built by ACSD and UA faculty, esp in online facilitation and equity—evidence of this across the coaching conversations that were observed • Spirit of collaboration among the teams of facilitators—they had worked across departments, engaged in dialogue to build content of sessions • Facilitators built community among new teachers • Facilitators created trust so people spoke open and honestly

Analytic Strategy and Technique

In the second phase of my triangulation, I followed Yin's (2018) advice to use an analytic strategy to analyze the data as a whole. One common analytic strategy is using theoretical propositions to guide the analysis (Yin, 2018). According to Yin (2018), theoretical propositions are theories that shape data collection and guide analytic priorities. I considered how my data analysis reflected the key theoretical concepts related to social network theory and complex adaptive systems theory. Table 12 shows the key theoretical concepts that I used to guide my data analysis.

Table 12

Analytic Strategy-Theoretical Proposition Concepts

Complex Adaptive Systems Theory concepts[1]	Social Network Theory concepts[2]
• **Emergence**-unexpected consequences as a result of system dynamics • **Dynamic-**always changing, uncertain, interactions of multiple variables • **Non-linear**-patterns of systems interact in unexpected ways • **Nested systems**-systems within systems that interact with each other • **Adaptive**-responsive to change, resilient	• **Social Capital-**pattern of social interactions (group social capital is group outcomes as function of group's network structure); quality of social ties is key o **Resources**-information and knowledge exchanged through social interaction (collaborative projects) o **Interdependency among people**-multiple levels of relationships and changes at one level can affect another o **Opportunities for action**-network capital makes possible to use resources effectively (patterns of social relationships associated with capacity to create change, such as transfer of complex knowledge, joint problem solving, coordinated approaches to innovation • **Trust** is essential to developing social capital and can result in more risk taking, innovation • **Collegial relationships** o **Affective relationships**-new teachers benefit more from emotional relationships with colleagues o **Instructional relationships**-new teachers benefit from colleagues sharing instructional resources o **Resilience**-quality relationships with colleagues help build new teacher resilience and cope with new teacher challenges • **Efficacy**-Social capital can build teachers' efficacy which can impact student achievement

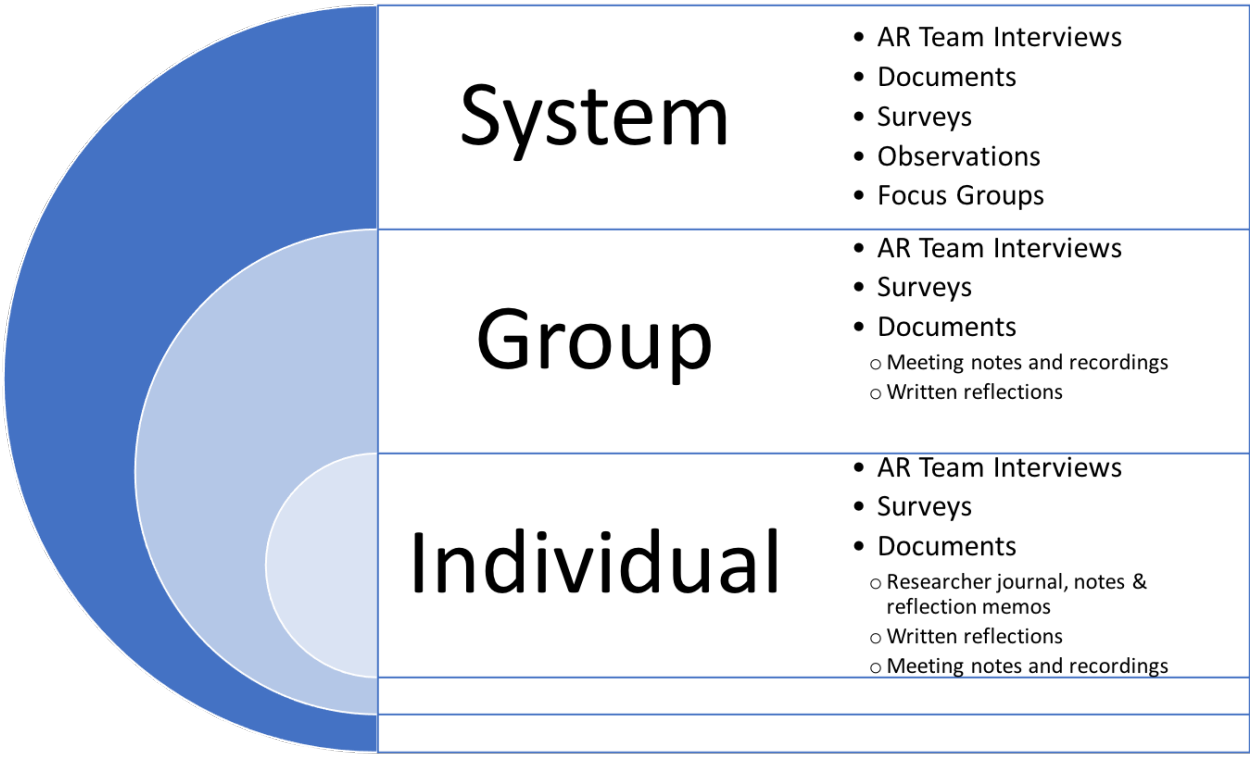
Both my coding analysis and the triangulation with my interventions reflected many of these concepts, so I examined the data further to identify the most common themes that related to my

[1] Concepts from David & Sumara, 2006; Martin & Dismuke, 2018; McGee & Edson, 2014
[2] Concepts from Daly, 2014; Leana, 2010; Moolenaar, 2012

theoretical propositions and answered my research question. I then used this analysis to determine the study's overall findings for each level of the system. Figure 11 shows the data methods that were triangulated at each level.

Figure 11

Data Triangulation Related to Levels of System



Key themes that emerged related each level of the system were used to develop the findings and conclusions discussed in Chapter 4. These key themes are summarized in Table 13 by levels of the system.

Table 13

Key Themes from Data Triangulation

Level of system	Themes from Triangulation
Individual learning	Individuals built professional capacity in learning communities
	Action research process built researcher's leadership skills and ability to manage complexity
Group learning	Sustained time, trusting relationships & inquiry mindsets created effective learning communities
	Effective learning communities built group social capital that results in productive collaboration and impactful programming
System learning	New teachers need ongoing opportunities for collaboration with colleagues
	Learning communities can create systemic change
	Boundary-spanning, collaborative leaders are important to leading change
	Action research process facilitates adult learning and generates positive systems change

In the final stage of my data analysis, I used pattern matching (Yin, 2018) as an analytic technique to strengthen the internal validity of the study. According to Yin (2018), pattern matching involves comparing findings from a study with predicted findings that were made before data was collected. I referred back to my original theory of change (see Figure 4 in Chapter 1) to compare my findings with my predicted findings. I confirmed that the study's findings were similar to the short- and medium-term outcomes I had predicted, which strengthened my findings. As a result of this lengthy data analysis process, I became confident in the credibility of the study's findings and conclusions that are shared in Chapter 4.

Ensuring Trustworthiness

In addition to thorough data analysis, additional checks are needed to ensure that the outcomes of the research are trustworthy (Stringer, 2014, p. 92). According to Stringer (2014), a study's trustworthiness can be assessed by considering credibility, transferability, dependability, and confirmability, as described in the following section.

Credibility refers to the "plausibility and integrity" (Stringer, 2014, p. 92) of the study, which is critical, especially for the study's participants. Two ways to ensure credibility include triangulation and member checking. Transferability refers to considering how the research outcomes can be applied outside of the local context and sharing results with wider audiences through publications and presentations. Dependability refers to ensuring that research procedures are clearly defined and followed throughout all steps in the research process. Confirmability means that researchers must be able to confirm that the procedures actually took place. The best way to assess confirmability is through an audit trail that includes all the of the data collected, including journals, meeting minutes, field notes and other artifacts. (Stringer, 2014)

Trustworthiness Strategies

I ensured study's trustworthiness using multiple strategies throughout the research process. As described in the prior section, I ensured credibility by triangulating my data analysis to arrive at my findings and conclusions. I also involved the action research team in some of the data collection design and analysis, asked them to member check interviews and observations, and gave them opportunities to provide feedback on the action research process, including dependability of the research procedures. The action research team also focused on transferability—we shared findings from the study at state and national conferences and have

plans to co-author an article to submit to a peer-reviewed journal. I also co-authored one article with my advisor that is under currently under review by a peer-reviewed journal.

To ensure trustworthiness at the first-person level, I met monthly with my doctoral program advisor throughout the study to get advice and ensure that my action research strategies were valid. By maintaining an ongoing research journal and writing reflection memos, I also considered "reflexivity" (Creswell, 2016, p. 186)—my own biases and background that influenced the research process. For confirmability of the research, I maintained a thorough audit trail of all research activities, including documents, meeting notes, interview transcriptions, etc. Appendix C includes a detailed audit trail of all research activities.

Each data collection method included in this action research study required different strategies to ensure trustworthiness. The strategies that I used ensure the trustworthiness of each method are outlined in Table 14 below.

Table 14

Strategies Used to Ensure Trustworthiness of Qualitative Data

Data Collection method	Trustworthiness
Documents-meeting notes, audio/video recordings, handouts, etc.	• Audit trail • Triangulation
Documents-researcher's journal, notes, reflection memos	• Audit trail • Triangulation • Reflexivity
Surveys	• Triangulation
Interviews	• Audit trail • Triangulation • Reflexivity • Member checks
Focus Groups	• Audit Trail • Triangulation
Observations	• Triangulation • Member checks

Subjectivity Statement

Throughout the research I was very aware of my role as both an insider and outsider. Being an insider and an outsider gave me an advantage as an action researcher, but it also presented challenges. The study was focused primarily on creating change within the school district, yet I was not an ACSD employee, so sometimes I was unaware of internal politics and internal dynamics that affected the research process. Though I was a trusted university partner, having worked in the partnership for seven years when the research started, I had to work hard to ensure ongoing communication and transparency about the research with district leaders. When my key partner at the school district left his position, I advocated for continuing the induction collaboration but ultimately lacked the authority to persuade the district to maintain the structures and processes that had been developed to support new teachers.

Even within my own organization, it was not always easy to manage my dual role as scholar and employee. From the university leaders' perspective, the research study was not integrally connected to my day-to-day work in the partnership. However, I viewed my role as researcher and interim director as inter-connected—each one was continually informing the other in ways that strengthened both my leadership and partnership programming. Throughout the study I was optimistic that my role as "interim" director would lead to a director position that would include leading induction support in our partnership. However, funding was not available to make the position permanent, which contributed to my decision to leave my SOE position before the study was over. Finishing the study with only doctoral candidate status contributed in some ways to the lack of sustainability of the collaboration.

To further reflect on my subjectivity, from the outset of the research, I was aware of biases that I brought to the research and openly shared these with the action research team for transparency. For example, I favored the PDS partnership model for ensuring the sustainability of the study, while I knew that the partnership's leaders wanted to move the partnership in a different direction using a potentially different school-university partnership model. Our differing views over the merits of the PDS model also contributed to my decision to leave my SOE position just prior to the end of the study.

Another example of my bias was that I favored focusing the study's efforts on the school district side of the partnership, rather than on benefits for the university. For several years I felt that the university benefited more than the school district in our partnership, so I prioritized interventions that primarily benefited new teachers. Regardless, UA did experience positive benefits from the study. Findings showed that UA teacher preparation programs and courses were positively impacted due to the UA faculty involved in the action research team, and many

new teachers involved in the induction support activities were UA alumni. However, these benefits were not an intentional part of the study's design.

Summary

The action research methodology was used with fidelity to conduct this rigorous empirical study. Multiple qualitative data collection methods were used with a variety of educators at multiple levels of the school district and university systems to answer the research question. As demonstrated in this chapter, I took many actions as the lead researcher to ensure the credibility and trustworthiness of the research process, including the data collection and analysis. Results from the various data collection methods described in this chapter are shared in detail in Chapter 3, and my thorough data analysis produced valid findings and conclusions that are described in-depth in Chapter 4.

CHAPTER 3: THE ACTION RESEARCH STORY

The Power of Human Connection to Create Change

Chapter 3 tells my action research story, a story that illustrates the power of human connections to generate positive energy and change for educators at multiple levels of a system. Humans are hard wired for social connection with one another, and without human relationships, action research would not be possible. Through this study, I discovered that when trusting, inquiry-oriented learning communities are at the core of the action research process, innovative change can occur. One of my favorite quotes from Brené Brown reads, "I define connection as the energy that exists between people when they feel seen, heard and valued; when they can give and receive without judgment; and when they derive sustenance and strength from the relationship." This energy among people is the thread that weaves together my story. Just as a dark room becomes bright when a single candle is used to light many candles, the connections made among educators throughout the research process generated positive energy that fueled learning and growth for everyone involved and created impactful support for new teachers.

The action research story is told through three parts. The first section introduces the context of the study, a school-university partnership that used the Professional Development Schools (PDS) partnership model. This section also frames the problem of new teacher support within the context, including the researcher's role, key stakeholders, and action research team recruitment. The second and most robust part of this chapter tells the story of the research using the phases of the action research cycle. Three complete action research cycles are described,

including the relationships and communities built, major activities, and data collection and analysis in each cycle. Chapter 3 concludes with my personal reflection on the research story.

Action Research Context: A School-University Partnership

The context for this action research study is a school-university partnership between the University of the Atlantic (UA) School of Education (SOE) and the Atlantic County School District (ACSD). Located in the Southeastern United States, UA is a large, public university with more than thirty teacher preparation programs that prepares more than 400 new teachers each year. ACSD is the only public school district in Atlantic County and serves a population of approximately 13,300 students in 21 schools. The district is designated as a federal Title 1 district—77% of the students are eligible to participate in the federal free or reduced price meal program. Students are racially diverse, including 48% Black, 25% Hispanic, 22% White, 2% Asian, and 4% two or more races.

Historically, ACSD and UA collaborated on occasional, sporadic projects. In 2008, the SOE dean created a new school engagement division, referred to with the pseudonym SED, with the goal of developing a systemic, formal partnership with ACSD. A new SED director and an ACSD associate superintendent led a year-long study of different school-university partnership models, which resulted in the partnership adopting the Professional Development Schools (PDS) model with a form Memorandum of Agreement (MOA) in 2009.

Professional Development Schools (PDS) Model

The PDS model centers around partner schools that serve as clinically-rich, real-world settings for teacher preparation programs. Similar to teaching hospitals hosting medical residents, PDS schools host large cohorts of pre-service teachers who are placed in mentor teachers' classrooms for field experiences and student teaching. University courses are also

taught on-site at PDS schools to better link theory with practice, and mentor teachers, pre-service teachers, and university faculty engage in professional learning together. According to one of nation's foremost teacher education scholars, Linda Darling-Hammond, PDSs have the most potential of any school-university partnership model to transform education.

The PDS model related to this study began with one elementary school in 2009 and grew to become a district-wide partnership that included all schools at varying levels of involvement. The formal title for the UA-ACSD partnership, the Atlantic Professional Development Schools (APDS), was adopted in 2011. During 2019-20 when this study began, the partnership involved five Professors-in-Residence (PIRs) who were UA faculty working 20-40% of their time in schools, 200+ teachers served as mentors to SOE students, 15-20 courses were taught on-site at schools each semester, and more than 500 UA students were involved in different types of field placements and coursework in the schools.

PDS partnerships are designed to be "mutually beneficial" (Teitel, 2011, p. 56), serving both the needs of universities and school districts. While the APDS provided UA with many site-based learning opportunities during the last decade, the partnership lacked programming that supported ACSD teachers' growth and development. With this in mind, I considered many potential research topics focused on partnership support for teachers. After a semester of informal data collection, including many conversations with stakeholders at both institutions, I concluded that new teacher support, commonly referred to as induction programming, was of great interest to both the school district and the university.

Partnership Induction Support

As described in Chapter 1, the issue of induction support in teachers' first few years of teaching is critical to their decision to remain in the profession. Effective induction support can

improve the quality of teaching and ultimately contribute to improved student learning. In 2017-18, 16% of ACSD personnel, including teachers and other staff, left the district, which was double the rate of the prior year. ACSD administrators expressed concerns about the limitations of their current induction program and how the lack of support might be impacting teacher retention.

Concurrently, some SOE administrators and faculty expressed interest in providing more induction support because they were invested in the success of new graduates from SOE's teacher preparation programs. They were also interested in improving teacher preparation programs to better equip pre-service teachers for challenges they were likely to face in their first few years of teaching. According to this study's first induction teacher survey, 38% of first through third year ACSD teachers received their preparation at UA, but no systematic support from the university followed them into their first year of teaching

As described in Chapter 1, my literature review found that induction support is a common component of many PDS collaborations, but within APDS only one faculty member provided ongoing support to new teachers. From 2012-15, the partnership had led a successful induction program for secondary science and math teachers, but when grant funding ended, the program did not continue. Given both our history of success and the current needs described above, the partnership's leadership team, called the APDS executive committee, agreed the APDS should actively engage in developing a continuum of support for new teachers from teacher preparation through the induction years. In early March 2019, the committee agreed to serve as the Project Sponsor for my proposed action research study. The leaders of the committee, the ACSD superintendent and the SOE dean, signed the Project Sponsor Letter at the end of May 2019. In early July 2019, I received approval for the research from the university's Internal Review Board

(IRB) and the district's research office (these documents are not included for confidentiality reasons).

Researcher's Background and Role

Though this is my first action research study, I have more than 25 years of experience in the field of education within P-12 (pre-Kindergarten through 12th grade), higher education, and non-profit settings. In 1999, I left the teaching profession after only three years due to feeling like I was in a "sink or swim" situation with limited mentoring and overwhelming demands placed on me as a high school English teacher. I was one of the unfortunate statistics, but this negative induction experience propelled me to focus my entire career on leading partnerships and programs that gave teachers and students enriching and engaging opportunities to learn and grow.

When the research began, I had been working for seven years within the APDS partnership as an employee of the SOE's school engagement division (SED). In 2012, I was hired as the SED's project manager due to the expansion of the APDS partnership work. This was a new part-time position with public service faculty status. My responsibilities over the years included managing APDS programs, including Professor-in-Residence (PIR) activities, a summer learning camp, UA's school-based courses, communications (newsletters, website), and fundraising efforts, among other responsibilities. From 2012-15, I managed a federally funded APDS induction support grant, which played a significant role in my decision to pursue an action research study related to new teacher support

After more than six years as the project manager, I became the SED's interim director in July 2018 after a failed search for a new director. The prior director, who had led the SED since the office was formed, had left the position that summer in preparation for her retirement. I

served as the interim director for three years from July 2018-May 2021 and was leading this study during two of those years. As interim director I played an active role on the APDS executive committee and led many different partnership programs, including expanding the SOE's partnerships to include other school districts in the region.

However, throughout my time as interim director, the UA-ACSD partnership remained in a state of flux with no clear vision and priorities due to leadership changes at both institutions. The core components of the PDS model were discontinued in my second and third years as interim director. At the SOE, an SED task force studied and made recommendations for future expansion of the university's engagement activities; however, no action was taken related to any of the recommendations. At the end of this study, I left my position at the SED in part because the SED's budget had been cut and there were no plans to make the interim director a permanent position. This situation is discussed in more detail at the end of this chapter.

Key Stakeholders

APDS Executive Committee

The most important stakeholder group for my research study was the APDS executive committee whose members oversaw and made all decisions relating to the UA-ACSD partnership. This group served as my Project Sponsor and was invested in learning from the study's findings to inform the future of our partnership. The committee included four ACSD representatives, including the superintendent and three other cabinet positions, and four SOE representatives, including the SED director (myself), the director of educator preparation, an associate dean, and the dean. Throughout the course of the research, this committee met every other month to discuss and evaluate existing programming, generate new ideas, and address any challenges that the partnership faced.

ACSD Stakeholders

Important ACSD stakeholders included several ACSD central office administrators who supported the ACSD induction program, as well as 21 school principals who all had induction teachers in their schools. At each school, educators with different roles who all supported new teachers in some way were additional ACSD stakeholders. These educators included instructional coaches, behavioral specialists, mentor teachers, and experienced teacher leaders who served as "lead" mentors. Lead mentors, including one or two in each school, oversaw the induction activities at their schools and supported the other mentors of new teachers.

UA Stakeholders

University of the Atlantic SOE teacher education faculty members were also important stakeholders in this study. Three faculty on the action research team, as well as three additional teacher education faculty members, were involved in developing and implementing different components of induction intervention programming related to the study.

Action Research Team Recruitment

Before any action research process begins, the lead researcher forms an action research team of five to eight co-researchers. From the outset, I was committed to forming an action research team that included equal representation from both sides of our partnership—the university and school district. Our partnership had historically focused on designing mutually beneficial programs and activities, so I only recruited educators who had prior experience working in partnership contexts and shared an understanding of bi-directional institutional benefits. I also thoughtfully considered diversity issues, including race, gender, and different levels of the system.

In May and June 2019, I invited a diverse group of 16 educators to attend action research team informational sessions at ACSD and UA. I shared my excitement about initiating a learning journey for a group of co-researchers who would gather data, plan, and implement interventions that would enhance new teacher support within our partnership context. The 14 educators who attended the four sessions (seven from UA and seven from ACSD) were well-informed about the action research process, time commitment, and the high level of interest in induction support that was required to be a member of the research team.

I was very fortunate with the final group of educators who made the leap of faith to engage in the unknown but exciting research journey. The eight-person team included equal representation from both sides of the partnership, as shown in Table 15. Though only one male was a member, the team included some racial diversity and job experience and position diversity. University members include three UA teacher education faculty, referred to with the pseudonyms Kate, Nina, and Mary, as well as me as the doctoral student researcher. ACSD members included Matthew, the Director of Induction and Retention; Elizabeth, a middle school assistant principal; and Sharon, a middle school principal who came on board five months after we started. The team also included Ann, ACSD's Director of Strategic Partnerships, who left her ACSD position to become a state-level education policy analyst soon after the action research started.

Table 15

Action Research Team Members (August 2019-June 2021)

Team member name (pseudonym)	Position	Race/gender
Matthew	ACSD Director of Induction and Retention	Black male
Elizabeth	ACSD Middle School Instructional Coach (Year 1) Assistant Principal (Year 2)	White female
Sharon	ACSD Middle School Principal (joined January 2020)	Black female
Ann	ACSD Strategic Partnerships Director (Aug-October 2019) Senior Policy Analyst with state teacher advocacy organization (November 2019-end of research)	White female
Nina	UA SOE faculty member, social studies teacher education	Mixed race female
Kate	UA SOE faculty member, middle grades teacher education	White female
Mary	UA SOE faculty member, middle grades teacher education	White female
Erica (actual name)	UA SOE interim director of school engagement division and UA doctoral researcher	White female

All of these educators expressed not only a passion for supporting new teachers but were also excited about becoming co-researchers in a collaborative learning journey. Matthew, the director of the district's induction program, was just beginning to launch ACSD's new induction program when the study was getting underway. He was a crucial member of the team because we needed to make sure our efforts aligned and enhanced the new district-level programming.

The action research team members understood that by serving on the team, they became research participants who could voluntarily choose to leave the study at any time. Each member

signed the informed consent form approved by the IRB Human Subjects Office. The action research team met at total of 20 times from August 2019 through June 2021, as shown in Appendix C.

Purpose and Research Question

The purpose of this action research project was to design, implement, and evaluate interventions that enhanced the ACSD induction program for new teachers. The project's goal was to provide new teacher support that may result in improved teaching practices, increased job satisfaction, and/or increased teacher retention among the target population. Ultimately, enhanced teacher support may result in increased student learning. The action research team used complex adaptive systems (CAS) theory to consider the complexity of both institutions, as well as the complexity inherent in the induction phase of new teacher development. The study's interventions were informed by social network theory because initial data analysis showed that induction support interventions should include collaborative relational networks among teachers that foster learning and connection within schools and across the school district.

The one research question that guided the study was:

What is learned at individual, group, and system levels that advances theory and practice in the induction phase of teacher development in a school-university partnership context?

Overview of Action Research Cycle

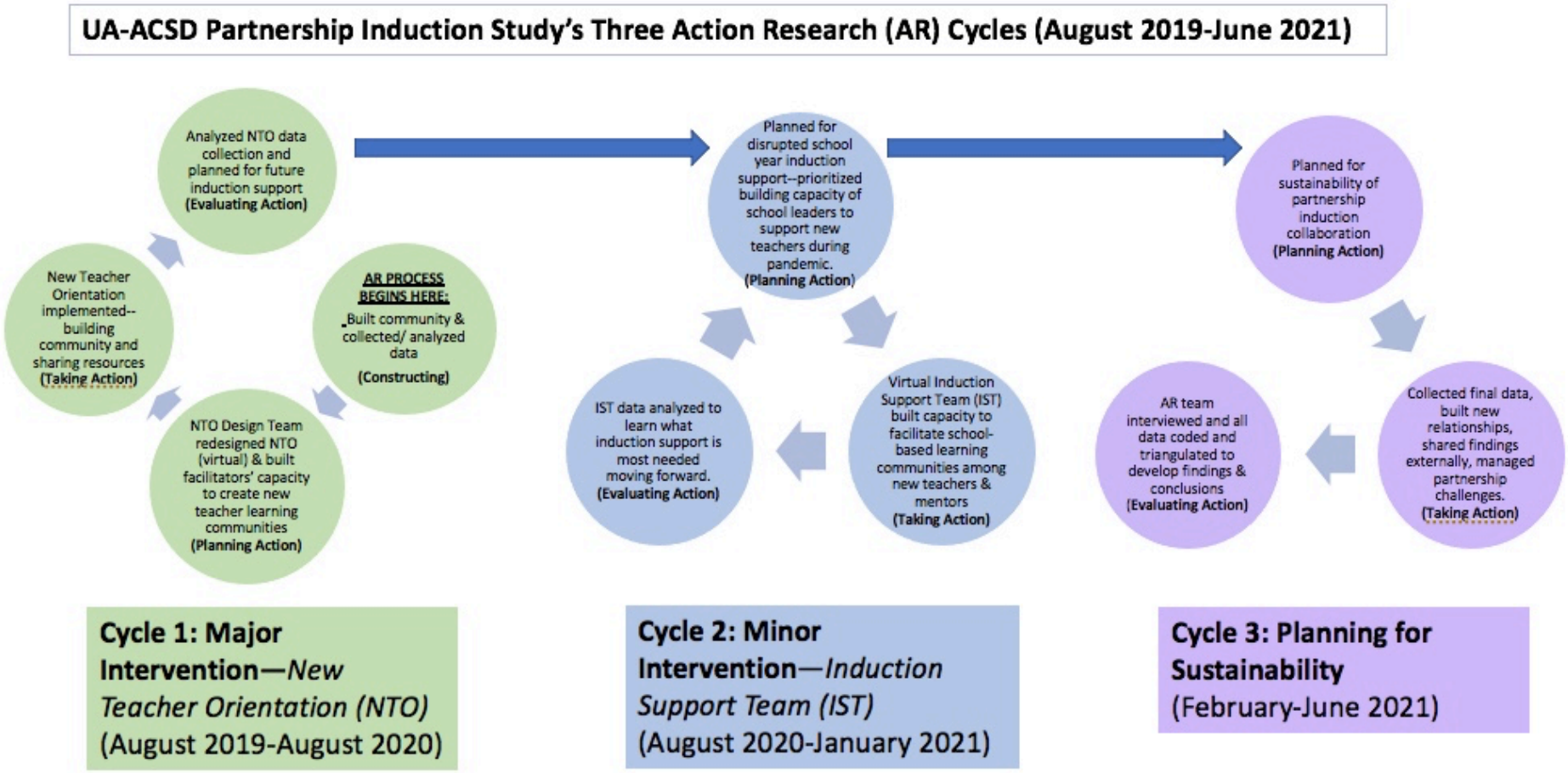
The innovative new teacher support that resulted from this study would not have been possible without the action research methodology, including the structured process, ethical standards, rigorous data collection, and most importantly, the focus on human relationships. As described in Chapter 2, this study followed Coghlan and Brannick's (2014) action research methodology, which is guided by the action research cycle model. The cyclical four step process

includes constructing, planning action, taking action, and evaluating action (Coghlan & Brannick, 2014, p. 9), as described and illustrated in Chapter 2.

The story of this action research study is told in the chronological order of the action research cycle phases, including three complete cycles. An overview of these three cycles and the phases within each cycle is shown in Figure 12 below.

Figure 12

UA-ACSD Partnership Induction Study's Three Action Research Cycles (August 2019-June 2021)



Appendix C shows the key research activities in each cycle, including action research team meetings, data collection and analysis activities, and intervention planning and implementation. These activities are described in detail in the following section of this chapter.

Cycle 1 Story: Learning Communities Build Impactful New Teacher Support

The first action research cycle was the most significant and lengthy cycle of the study, lasting a full year (August 2019-August 2020). Cycle one's story describes how human connections among the action research team led to creating new learning communities that planned and implemented impactful support and additional learning communities for 175 new teachers. This story is told in the four phases of the action research cycle and focuses on the action research team's major intervention—a redesigned virtual New Teacher Orientation (NTO) that was implemented in July 2020 during the early stages of the Covid-19 pandemic.

Cycle 1: Constructing Phase—Building Community and Collecting/Analyzing Data

During the constructing phase, the action research team verifies the problem within the local context (Coghlan & Brannick, 2014). The team also builds relationships, sets norms, defines its purpose, and envisions a desired state (Coghlan & Brannick, 2014). Our team spent six months in this phase, in which I prioritized building and cultivating trusting relationships among the action research team members. The action research team's energy fueled the creation of three other relational-centered learning communities, and the collaborative efforts these teams resulted in systemic change in the school district's induction program and also strengthened school-university partnership collaboration.

The construction phase included two key components: building the action research team learning community and collecting and analyzing data to verify the problem in our context. The activities related to these components were critical to the success of our future interventions.

Building the Action Research Team Learning Community

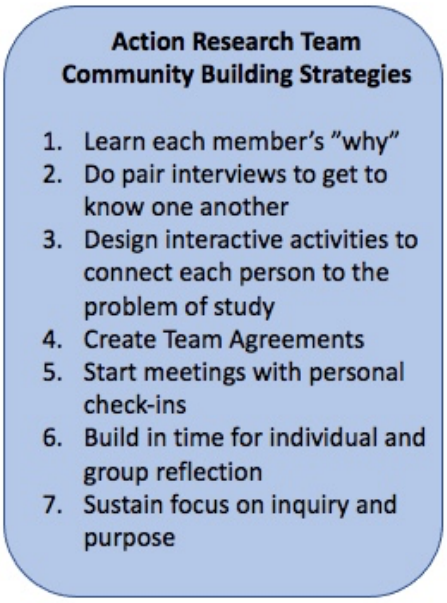
As part of the constructing phase of the action research, facilitators must invest significant effort in building democratic, trusting relationships among the action research team (Stringer, 2014). Stringer (2014) stressed how essential the human side of action research is saying, "to engage the more creative and caring features of human interaction increases the likelihood of greater 'ownership' and more sustainable outcomes that have an enduring effect on people's work" (p. 69).

Using action research to create organizational change was a new concept for the UA-ACSD partnership and not all members of the action research team had worked together before. I knew I had my work cut out for me to "build the container" (Scharmer, 2018, p. 13) we would need to accomplish our goals. According to Scharmer, to create space for a generative social process, key elements include "intention, attention, and the subtle qualities of deep listening" (Scharmer, 2018, p. 13). I imagined creating an authentic learning community where everyone felt safe and trusted each other so that group inquiry would result in exciting change efforts.

I invested many hours in developing strategies to build relationships among the action research team. Summarized in Figure 13, these strategies laid the groundwork for the success of the action research learning community and also served as a model for other learning communities developed throughout the research process. (More information related to how I built connections and community among the team is included in an article that is under currently under review by a peer-reviewed journal.)

Figure 13

Action Research Team Community Building Strategies



Team Agreements. Early on in our process, the action research team co-constructed our "team agreements," which were our group norms that guided our group process during our meetings. The agreements included:

- Active Input
- Clear expectations/roles
- Equity of voice
- Hold to commitments
- Defined tasks/responsibilities
- Open communication
- Team building/connection
- Value each other's contributions
- Trust
- Be present
- Commitment to quality

These agreements were posted on the wall at our meetings, and we frequently revisited them to remind ourselves of our commitments. At the end of the first year, members commented on how the team had stayed faithful to these agreements, which had helped deepen our relationships with one another while also sustaining positive momentum. When creating the team agreements, we

also discussed confidentiality and addressed the different positionalities of the group members and how organizational hierarchy could impact the conversation and our community. The team agreed that creating a safe space where meeting conversation would remain confidential was important to the research process.

Centering Trust, Inquiry, and Reflection. I didn't realize how much trust was at the heart of why we were such a collaborative and productive team until I conducted interviews with each team member at the end of the study. Nearly every member mentioned the importance of trust among each other as critical to the success of the action research process. Eventually, my data analysis showed that our trusting relationships were built through regular, sustained time together as a team, mutual respect for one another, valuing each person's diverse and unique perspective, developing and adhering to group norms, and sustaining our focus on our purpose and group goals. Everyone on the team was motivated by our collective purpose, which actively engaged all team members for two full years.

Cultivating inquiry mindsets among our team was also critical to the success of our learning community. In the context of this study, the term "inquiry mindset" refers to individuals' actions with group settings, such as respectful dialogue, active listening, and personal and group reflection, that contribute to ongoing learning and growth. None of us knew where the process would take us, but each member became familiar with the action research methodology and trusted that our team's commitment to joint inquiry would lead us forward productively. Commonly, members would share that they learned something new from engaging in meeting dialogue and learning activities.

Individual and group reflection was also prioritized throughout our action research process. Each person received a journal when they joined the team, and meeting time was often

set aside for writing reflections on data we had examined together or on ideas related to a problem. For example, when we examined survey data, we wrote reflections on questions such as, “What surprised you about the data?” and “What is the most important thing you learned that we need to pay attention to for designing future action?” Making meaning through intentional reflection resulted in much more productive, generative dialogue.

The combination of the trusting relationships and inquiry mindsets created a dense social network among the action research team learning community. Eventually, these human connections built group social capital that resulted in active collaboration that generated the emergence of innovative ideas, opportunities for creative action, and our ability to more effectively navigate system complexity, as discussed in more detail in Chapter 4. The positive outcomes described in this story would not have been possible without the powerful human connections that developed and thrived in the action research team.

Caring for and tending to the action research team learning community was my primary focus as an action researcher. I had never facilitated an action research study before, so I sometimes floundered and made mistakes, but I trusted in the process and consulted my doctoral advisor for advice. I also found that when I was clearly stuck as a facilitator, my team members came to my rescue with ideas and strategies. I found myself building my confidence as a leader of change with each passing month.

Collecting and Analyzing Initial Data

During the construction phase, it is also important for action research teams to collect and analyze data to verify the problem within the research context. At the beginning of the study, our team had four data sets related to induction teachers in ACSD, including two surveys, one observation, and documents. A few months into the construction phase, the action research team

also decided to collect additional data, including mentor teacher focus groups and a Mid-Year New Teacher Survey. Thus, the study's initial data collection included three surveys, one observation, two focus groups, and documents, as shown in Table 16. The following section describes each of these data sets and how the action research team engaged with and analyzed the data during the construction phase to understand the challenges new teachers faced in our research context.

Table 16

Action Research Team Data Collection During Constructing Phase

Date	Data Collection Method
May 2019	ACSD Induction Teacher Survey (1st, 2nd, and 3rd year ACSD teachers)
July 2019	ACSD New Teacher Orientation Observation
July 2019	ACSD New Teacher Survey (teachers new to ACSD in 2019-20)
January 2020	Lead Mentor Focus Groups
February 2020	Mid-Year New Teacher Survey
Ongoing	Documents from ACSD Induction Program and state Department of Education

Induction Teacher Survey (May 2019). In April 2019, Matthew and I co-constructed an induction teacher survey so that we could have baseline data to better understand induction teachers needs. We conducted the survey with all first, second-, and third-year ACSD teachers in May 2019 just a few months prior to our first action research team meeting. We asked teachers about induction activities, support and connection to their school communities, and about their teacher preparation programs. These results provided us with a rich initial data set related to induction teachers' needs, including both quantitative and qualitative data. A summary of key quantitative results is shown in Table 17.

Table 17

ACSD Induction Teacher Survey- Summary of Key Quantitative Results (May 2019)

n=258 First, Second-, and Third Year Teachers

Level of teaching

Pre-K	Elementary School	Middle School	High School
7%	47%	23%	24%

Number of years of teaching experience in school district

One	Two	Three
54%	24%	22%

Top 3 induction support activities that are important to them:

- Collaborative planning time
- Regular designated time to meet with mentor during school hours
- Release time to observe other teachers' classrooms

Top 3 professional learning topics they are interested in:

- Content-based or subject-specific professional learning
- Classroom management
- Social emotional learning/building relationships with students

Support and connection

Teachers enjoy being a teacher	Agree or strongly agree: 85%
Teachers feel comfortable asking for help from other teachers	Agree or strongly agree: 88%
Teachers feel supported by their school principals	Agree or strongly agree: 77%

Teacher preparation program

University of the Atlantic	Local private college	State's alternative certification program	Other universities
38%	15%	9%	38%

We learned that induction activities new teachers were most interested included collaborative planning time, designated time to meet with their mentors during school hours, and

release time to observe other teachers. Professional learning they were most interested in included content-based or subject-specific professional learning, classroom management, and social emotional learning (SEL)/building relationships with students.

In September 2019, the action research team participated in a reflective exercise to help us make collective meaning of the survey results. We had substantive discussion about these findings and developed some key takeaways as a group, as captured in the action research team meeting notes below:

Positives:

- Teachers have good relationships with other teachers, generally good relationships with mentors.

Disappointing:

- Low number of teachers regularly observe mentor and other teachers' classrooms and only half have common planning time—mentoring component needs attention.
- Mixed experiences with New Teacher Orientation
- Lots of turnover in math and English Language Arts

Pay attention to:

- 78% feel support from school administration—need to ensure that principals and other administrators "own" induction support at the building level.
- Top challenges are behavior and classroom management—we need to better understand the connection between these and how teachers are defining behavior and classroom management. Race/equity issues and culturally responsive pedagogy needs to be considered.

In terms of qualitative data, the survey asked two open-ended questions related to teachers' challenges and what was needed to increase teacher job satisfaction. We received a vast amount of qualitative data, including eight pages of comments related to challenges new teachers experienced and many comments related to ideas to increase their job satisfaction. To analyze such a large body of qualitative data, I used two different approaches, as described in Chapter 2. The results from the first approach are displayed in Appendix D. The second approach, group system mapping, was a powerful form of data analysis for the team. At our October and November meetings, we created two system maps—one related to challenges and one related to ideas for job satisfaction. To create both maps and compare the maps, we clustered themes, drew connections among themes, and puzzled through how the vast array of challenges, such as lack of planning time, classroom management problems, lack of student motivation, and lack of administrator support, were inter-related with one another. The process was a powerful learning experience, and the dialogue that the system mapping generated created group cohesion that we hadn't experienced before. Through this unique data analysis process, we strengthened our learning community and collectively uncovered our system's complexity, as shown in Figure 14 below.

Figure 14

System Mapping Data Analysis

Note. The photograph shows the system mapping data analysis activity with themes from the May 2019 ACSD Induction Teacher Survey comments related to their top three challenges.

Team members often referred to the system mapping data analysis activity as one of the critical learning experiences of the action research journey. For Kate, it was one of the high points. In her interview she said,

> *It was powerful… looking at what real teachers said and puzzling through what does this mean and what can we be doing differently? It felt so constructive…I felt like things were happening. There was energy…and that energy translated into real changes. It was truly generative to be feeling like I'm a part of really building something that's going to help teachers and kids.*

Elizabeth also described the power of the learning experience, saying, *"Seeing how all of that data interacted and the connections between the different groups and the bigger picture was really, really impactful for me as a professional and also for our group's work and our group's focus."*

Overall, we noticed that time constraints and lack of support and communication were major issues. We also noticed that the district-level leadership instability affected the school-level administrators. Principals' instability and inconsistency then affected the culture in schools, impacting the quality of community and induction support, such as lack of time with mentors. A major discovery was that the lack of collaborative school culture exacerbated problems, such as limited teacher collaborative planning time; behavior and classroom management issues; and strained relationships with students, administrators, and peers. In essence, the lack of connections among teachers, administrators, and students resulted in many problems.

This system mapping data analysis also helped us to understand the complexity of the systems-level story that the teachers had told us in the survey, which continued to guide all of our work. We also learned that we needed to recruit a principal to join the action research team, which led to Sharon, an ACSD middle school principal, joining the team in January 2020.

New Teacher Survey (July 2019). In addition to the May 2019 induction teacher survey, in June 2019, Matthew and I co-constructed a survey for the teachers who were just starting to teach in ACSD in 2019-20. We thought it was important to have data from the induction teachers who had been teaching in the district, as well as new teachers just coming in. A total of 178 of the 180 new teachers who had been hired in summer 2019 participated in the New Teacher Survey at the end of New Teacher Orientation (NTO) in July 2019. We asked questions related to the NTO, induction activities they were interested in, levels of confidence in teaching, and

their teaching preparation program. The quantitative data findings that were most relevant to the study are included in Appendix E.

At our September 2019 action research team meeting, we compared the July 2019 survey data with the May 2019 induction teacher survey data analysis. One interesting finding was that the 258 first, second, and third-year ACSD teachers and the 178 new teachers entering ACSD (436 teachers total) were all interested in identical sets of induction support activities and professional learning activities. This combined survey data is shown in Table 18.

Table 18

Combined Data from ACSD Induction Teacher Survey Results (May 2019) and ACSD New Teacher Survey Results (July 2019)

n=436 Induction Teachers	
Top induction supports induction teachers are interested in: ● Collaborative planning **time** ● Regular designated **time** to meet with mentor during school hours ● Release **time** to observe other teachers' classrooms ● Access to principals and administrators	Top professional learning induction teachers are interested in: ● Content-based or subject-specific professional learning ● Classroom management ● Social emotional learning/building relationships with students ● Diversity & equity issues in the classroom

This data was very helpful for the action research team to begin to consider targeted, effective interventions that were responsive to teacher feedback. We also learned that having "time" dedicated to a variety of induction activities was important to new teachers and making connections with other educators was critical to induction support.

New Teacher Orientation (NTO) Observation (July 2019). My New Teacher Orientation field notes showed that teachers made good connections with one another and appreciated the time to interact. I also learned that the top district administrators placed a very strong emphasis on "equity" as a district priority and value in the NTO large-group sessions. However, the professional learning sessions, which focused on classroom management

techniques and lesson objective writing, did not help the new teachers translate the equity focus into their instructional practices. Teachers had to make sense of how to create equitable classrooms, including developing culturally relevant pedagogy, in their classrooms on their own. This was an interesting example of the complexity that new teachers were managing, and this finding became increasingly important to the action research team as we determined that equity needed to be addressed much more intentionally throughout all induction support activities.

Document Review. The action research team also examined the state DOE's induction guidance for how schools and universities could partner together effectively to support new teachers. This provided a good springboard for initial conversations about partnership induction collaboration, as did the documents that Matthew was developing for the ACSD induction program. These documents helped the research team understand the current induction activities already underway, including needs and challenges.

Trust-Building Among Induction Leaders

As the two primary leaders of the induction efforts—Matthew on the district side and myself on the university side—it was essential that we built and sustained a deep level of trust. Throughout the construction phase, we met weekly and frequently emailed one another to share information and serve as one another's thought partners. My research journal has many references to our positive and productive relationship, which was nurtured by ongoing, regular time together, a passion for the work we were engaged in together, and similar boundary-spanning leadership style. Our effective joint leadership greatly influenced the successful planning and implementation phases that occurred in Cycle One.

Addressing Leadership Turmoil

In December 2019, the action research team faced our first major challenge, as the district's superintendent was placed on administrative leave after a falling out with the board of education. At the time of our December action research team meeting, no interim had been named, and the local community was very divided. I thought it was important to process our feelings about the situation and discuss how the volatility might affect us and our research. The meeting turned out to be more challenging than I anticipated, as I hadn't considered that even though we had built trust and relationships, the district members were placed in an uncomfortable situation because they had more to lose by speaking openly about how they felt about the situation. I learned from the awkward silences that I had not prepared the right questions to guide the discussion successfully. However, everyone shared that they appreciated the opportunity to have a hard conversation together. Leaning into the discomfort and not avoiding potential conflict also continued to build trust among the team members during this rocky time in the school district.

By mid-December, an upper-level central office administrator was named interim superintendent. Fortunately, she served on the APDS executive committee, so she had been involved in the process of approving my research as a Project Sponsor and had also attended one of my action research team recruiting sessions. During a January 2020 APDS executive committee meeting, she vocally expressed her desire for the university to remain actively involved in induction support initiatives. However, given that she was an interim, I was well aware that the APDS partnership was in a transitional state until a new superintendent was hired.

At this point, I was also aware that another challenge would be identifying UA faculty with the expertise and job capacity to develop and implement the interventions that were most

needed. Though many faculty members expressed that the SOE should be doing more to support new teachers, resources to compensate faculty to do so were limited. Beyond the action research team members, I would need to continue to advocate for faculty to become involved in ACSD induction support. Despite these challenges, the issue of induction support continued to get more attention at the SOE. As the result of an SOE town hall to reimagine the future of teacher preparation, several working groups formed in early 2020, including one focused on induction, which I joined. I shared data from the study with the working group, which was used to help develop a proposal for a five-year plan to expand SOE's induction support to recent graduates. Unfortunately, the proposed recommendations were never acted on.

Collecting Additional Data

The leadership uncertainty slowed down our team momentum somewhat, but we decided it was necessary to collect additional data from stakeholder educators in the system before deciding on a major intervention and planning action. Each school had one or two "lead mentors" who were veteran mentors of new teachers that played a critical role in the induction program, and the team agreed that focus groups with these teachers would be beneficial for informing our interventions. We also decided it would be beneficial to conduct a Mid-Year New Teacher Survey with all first-year teachers in the district to learn more about their induction experiences and needs.

Lead Mentor Focus Groups (January 2020)

In January 2020, I conducted two focus groups with a total of six lead mentor teachers who were highly engaged in the conversation and excited that induction programming was receiving attention after years of neglect. A summary of key focus group themes is shown in Table 19.

Table 19

ACSD Lead Mentor Focus Group Themes (January 2020)

N=6 Lead Mentors

Collaboration and Relationships

- Want collaboration time with other mentor teachers –relationships are critical
- Best part of current Lead Mentor professional learning days is collaboration and idea sharing with other teachers

Induction Issues to Address

- Quality of mentors varies greatly—some have very little experience and need more professional learning
- School administrators need to participate and show support for monthly gatherings of mentors/mentees and need to be flexible to allow time for mentors to observe new teachers and for mentor-mentee professional learning

Top Challenges for New Teachers

- TIME biggest barrier to successful induction program, esp. mentor time with mentee
- Classroom management continues to be biggest issue for new teachers—they recommend a peer network who can help new teachers with classroom management support (non-evaluative)

Recommendations for UA-ACSD Partnership Induction Support

- UA faculty members are assigned to groups of new teachers in one school to support with classroom coaching and check-ins
- Develop better alignment between teacher preparation program and induction program—teacher candidates need additional classroom management coursework or workshops
- Community of Practice for induction teachers that includes a UA faculty member
- Content or subject-centered professional learning

A key theme that came up repeatedly was the lack of time for the induction activities, including the mentoring coaching cycle, classroom observations, and professional learning together. This was particularly true at the secondary level, where schedules among mentors and new teachers were very difficult to coordinate. Lead mentors felt that new teachers also continued to need support with classroom management, which they thought should come from a peer network, rather than any evaluative administrators. They also felt university faculty could play the role of providing non-evaluative feedback and classroom coaching and "check in" support. Lead mentors agreed that all mentor teachers need to participate in professional learning

altogether in the summer to understand how they contributed to the broader district induction program.

The focus groups themes were important to our research team because lead mentors affirmed the complexity of new teachers' challenges that required dedicated collaborative time with one another for peer-to-peer support. These teachers also affirmed the importance of social networks and relationship-building to increase teachers' capacity and job satisfaction.

Mid-Year New Teacher Survey (February 2020)

A summary of key findings from the 95 ACSD teachers who completed the Mid-Year New Teacher Survey are displayed in Appendix F. One important finding relevant to the action research team was that teachers were having very mixed experiences regarding induction activities and professional learning. For example, 20% were very satisfied with the release time they had to observe other teachers, while 16% were very unsatisfied. While 44% were satisfied or very satisfied with professional learning in the area of classroom management, 30% were unsatisfied or very unsatisfied. Clearly, the ACSD induction support varied widely from school to school, and we needed to consider this in our intervention planning.

Incorporating Social Network Theory

All data collected in the construction phase described above was critical to verifying the problem within our context and deciding which theories would best guide the study. The first several action research team meetings confirmed that complex adaptive systems (CAS) theory fit our context, as we continued to uncover complexity in the initial data collection. However, CAS was not sufficient to guide us in planning induction interventions. In response to advice from my doctoral committee, I explored social network theory.

As described in Chapter 1, some empirical studies found that social connections and collaborative school cultures can play a significant role in new teacher job satisfaction and retention (Moolenaar, et al., 2012; Sikma, 2019; Thomas, Tuytens, & Moolenaar, et al., 2019), so this theory seemed to hold potential for our research context. Our data analysis had also repeatedly confirmed that teachers were eager for collaborative planning time with one another and opportunities to learn from one another through more mentoring, observations, and professional learning. The research team felt confident that creating connections and community among new teachers would help to alleviate many problems they were facing.

With all this in mind, I developed a theory of change (see Figure 4 in Chapter 1) that included social network theory and shared this with the action research team. We agreed that this theory would be an asset to guiding the development of our interventions—perhaps our partnership could create collaborative learning networks that would benefit new teachers. With each monthly meeting of the action research team, we were experiencing becoming a dense social network ourselves. We continued to grow in our trust and respect for each other with the dedicated time and structure to focus on an issue that we were all passionate about.

Triangulating Our Initial Data to Determine Interventions

By January 2020, our team had collected data from multiple sources and through multiple methods, as shown in Table 4 in Chapter 2. We used our January meeting to triangulate all the data as a group to determine possible induction intervention activities that we could implement in the spring and summer. To help us understand the data as a whole, I created a "data wall" and posted key themes that had emerged from our various data collection methods on chart paper. I also reminded the team of all that we needed to take into consideration in our decision making in addition to the data and research we had examined, such as existing resources (time, funding,

expertise), the current political climate/leadership changes, level of the organization to influence (school level or system-wide), the complexity of issues new teachers face (CAS theory), the importance of teacher relationships and social networks (social network theory), and lessons learned from our prior partnership induction program.

We then used chart paper to brainstorm intervention ideas at different levels: System-level Interventions, School-level Interventions, and Other Ideas. Everyone contributed at least three intervention ideas and described his or her ideas to the group. Finally, we each voted for our top three ideas using sticky "dots" and came to consensus on four interventions we were excited to begin planning at subsequent meetings, as shown in Table 20. All four interventions reflected social network theory principles that emphasized human-centered connection and collaboration among educators.

Table 20

Action Research Team's Top Four UA-ACSD Partnership Induction Intervention Ideas

Intervention Ideas
• Redesign Summer 2020 New Teacher Orientation (NTO) to be more responsive to new teachers' needs and create connections among new teachers
• Create Communities of Practice for induction teachers supported by UA-ACSD co-facilitators
• Design and implement dedicated professional learning days at each school for mentor-mentee pairs to observe teachers, engage in professional learning (including equity), plan lessons together
• Offer content-based professional learning in a variety of subject areas for new teachers co-facilitated by UA-ACSD content area experts

We decided to target the majority of the interventions for the four ACSD middle schools because teacher turnover was highest at this level, and we knew we would likely not have capacity to implement interventions system-wide. All action research team members expressed enthusiasm about the interventions we had collectively prioritized. Everyone agreed that we had

used evidence from our extensive data collection and analysis to guide all of our decision making throughout the process.

Action Research Team Mid-Year Reflection

Before our team transitioned into the planning phase of the action research cycle, we reflected on our team's process thus far. Team members expressed that the open communication among members was the most important element to our success in working well as a group. Members also shared that they appreciated that there was "equity of voice" and active input from all, which are included in our team agreements. They also appreciated that we were comfortable critiquing one another ideas as part of our process to make good decisions. Our biggest challenge was that we often ran out of time at our meetings because we got engaged in lively discussions, so we brainstormed some solutions for future meetings.

Cycle 1: Planning Action Phase—Innovation Rises From Covid-19 Chaos

In the planning phase of the action research cycle, the team uses the data gathered in the constructing phase to design one or more impactful interventions (Coghlan & Brannick, 2014).

Covid-19 Shifts Our Course

Just as the action research team was gaining momentum and meeting with middle school principals to discuss our top intervention ideas, the Covid-19 pandemic shut down both the university and the school district in mid-March 2020. I was in shock and unsure whether we would be able to move forward with our work. Fortunately, Matthew and I had significantly deepened our working relationship over the past six months. When I called him to ask his thoughts on moving forward with our plans, he was unwavering. He believed there was nothing more important than the work we were doing and that nothing would stop us. I breathed a huge sigh of relief.

At our first virtual (Zoom) action research team meeting in early April, we found that even though we were now boxes on each other's screens, we were the same strong learning community. All action research team members attended the meeting and expressed a desire to keep moving forward, even if we were forced to completely rethink our ideas for spring and summer interventions to be responsive to the external forces beyond our control. As Coghlan and Brannick (2014) shared, unforeseen events are likely to occur in action research—it "has a large degree of messiness and unpredictability about it" (p. 83).

The team recognized that suddenly nothing was more important than attending to the needs of the many new teachers who would be starting to teach in ACSD in 2020-21 under such unusual circumstances. Beginning a teaching career in the midst of a global pandemic would present unprecedented challenges in an already challenging profession—the new teachers would need to feel completely supported when they began working in ACSD. Thus, our priority intervention would be redesigning the July 2020 New Teacher Orientation (NTO) into a virtual format, incorporating all that we had learned from our data collection to guide the process. The most important guiding principle from our research was to build connections among new teachers and mentors and begin to build supportive school-based learning communities. By the end of the April meeting, Matthew, Nina, Mary, Kate, and myself committed to forming a new NTO Design Team to reimagine the orientation learning experience for new teachers.

I could hardly believe the momentum and energy in action research team at the very time when many organizations were halting programs and activities. While many of my doctoral cohort members were forced to abandon their action research or significantly curtail it, I experienced a renewed commitment among a resilient group of educators who were determined to plan and implement a transformative experience that would be responsive to the most pressing

needs of new teachers. We imagined teachers making deep connections in virtual spaces and finding community and resources that would sustain them—and this vision became a reality.

New Teacher Orientation (NTO) Design Team Becomes a Learning Community

In April 2020, the NTO Design Team formed, which initially included five action research team members, as well as two additional ACSD district administrators whom Matthew had recruited. Our first NTO Design Team meeting was exciting and generative. Matthew was a boundary spanning leader (Ernst and Chrobot-Mason, 2011) who had excellent group facilitation skills and believed in the power of collaboration to achieve more impactful programming, even in online spaces. He facilitated the meeting by building relationships, which modeled the culture of our action research team meetings. All of us shared a personal check-in that attended to our well-being. The Covid-19 stay at home order was still only in its first month, and we were all struggling in various ways with the upheaval in our lives. Those of representing the research team also shared with district members what we had learned from the action research data analysis that would drive the NTO planning process. Our guiding principle for the NTO design was focusing on building learning communities with the new teachers so that they would feel welcome and supported, especially during a disruptive and uncertain time.

The NTO Design Team ended up expanding in powerful ways. All of our data had consistently shown that teachers wanted more professional learning related to diversity and equity, so I recruited a Jordan, UA faculty member, who had this expertise and extensive experience working in the APDS partnership. We also recognized that if we were going to build learning communities, all NTO facilitators would need to learn how to do this effectively in an online format. Nina already had some expertise, but we also recruited Rachel, a UA teacher education faculty member, who was also an induction researcher with APDS experience. Her

involvement was pivotal to implementing successful interventions and she became integral to the study. Matthew also recruited 10 additional ACSD school-based educators. They all played varying roles in induction support, but they were siloed and had rarely had the opportunity collaborate with one another to discuss new teachers' needs.

This expanded NTO Design Team of 18 educators met every two weeks in April, May, and June 2020. Matthew continued to facilitate the group as a learning community, including taking time to build relationships among this new UA-ACSD collaboration through personal check-ins, breakout group discussions, and sharing reflections with one another in the chat. This new virtual learning community became a major source of new ideas that ultimately had the biggest impact on the new teachers' experiences. Just as powerful, though, was the collaborative learning for all involved in the NTO Design Team—leadership capacity was built in this phase that impacted educators far beyond the NTO we developed together. Though the pandemic was very challenging, the major disruption had an upside for our collaborative work—it gave us the freedom to be completely creative and think outside the box because everything was suddenly different than how it had been before.

Online Professional Learning Modules Meet New Teachers' Needs

Based the study's data about what support new teachers most needed in their first few months, the NTO Design Team decided to develop online asynchronous learning modules that the new teachers could engage with prior to the three-day synchronous NTO. Different design team members developed one-hour modules related to equity issues, classroom management, instructional strategies, and digital learning. The modules all included interactive learning experiences, opportunities to practice, classroom exemplars, and reflection questions.

After they were initially constructed, the NTO Design Team collaboratively "workshopped" the modules to improve them. Energy and excitement was high during this process. Undoubtedly, these conversations among university faculty and district educators resulted in positive changes. After one of our May 2020 meetings, I wrote in my research journal,

> *I was completely energized by the collaboration and enthusiasm of the people in the meeting. I felt a joy that came from knowing that none of what came about yesterday would have happened if I would not have taken on this action research study.*

Matthew remarked often that NTO Design Team learning space was different from anything that ACSD educators had experienced before, since typically they worked in silos. With a continued focus on trust-building and equity of voice, this team designed an onboarding experience for the new teachers that was far superior to anything the district had offered in the past. Just prior to NTO, I emailed Matthew about the unexpected benefit of the NTO Design Team learning community experience. I wrote,

> *In addition to prioritizing the culture of collaboration among the new teachers, I love how much you have built capacity, distributed leadership, and built community among the NTO planners and facilitators as well. Perhaps this is just as powerful and important for the good of all ACSD students in the long run as the induction support!*

Professional Learning for NTO Facilitators Builds More Connections

As the school year ended, another 25 educators became connected to the NTO redesign. Matthew recruited school-based lead mentor teachers and instructional coaches to serve as NTO small group facilitators. He fortunately had funds to pay them to engage in summer professional learning to prepare them to facilitate school-based "coaching conversations" during the three-day

synchronous NTO in late July. These coaching conversations would bring to life the small group teacher learning communities that our action research team dreamed of—we would prioritize community building above all else while engaging teachers in dialogue and reflection about the online learning module topics.

The NTO Design Team recognized that we would need to build NTO facilitators' capacity to build these communities, and UA faculty were poised to play a pivotal role in implementing powerful professional learning to prepare them to be successful. Again, the power of the partnership was that so many committed educators were willing to work hard over the summer in a middle of a pandemic (some were unpaid) to make sure we designed the most impactful learning experience possible for new teachers' needs.

Online Facilitation and Community Building Workshop. In June 2020, UA faculty members Nina and Rachel developed a 90-minute virtual synchronous "Online Facilitation and Community Building" workshop that served as the foundational professional learning for the 25 NTO facilitators. The faculty designed an engaging learning experience that modeled how to build community and relational connections to ensure that every person was seen and heard in a virtual meeting space. They addressed four facilitator roles that had to be considered when facilitating online learning and community building, including pedagogical, social, managerial, and technical roles. Discussions ranged from how to use the Zoom chat feature effectively for group learning to using Zoom breakout rooms for meaningful icebreaker activities that built connections among educators. The workshops formed the foundation of another learning community—the NTO facilitator learning community.

Equity Workshop. Jordan, another UA faculty member, developed a 90-minute synchronous workshop for the NTO facilitators on the topic of equity in education. ACSD

leaders believed that equity was a priority for the district and asked that all educators create conditions and provide resources to ensure that every student had what they need to thrive regardless of race, gender, religion, sexual orientation, physical or mental ability or disability. Jordan modeled how facilitators can open up equity-centered conversations about race and ethnicity with new teachers, and she reinforced how it important it was to build relationships among a learning community before beginning to have potentially difficult conversations about equity issues.

Designing Virtual NTO Coaching Conversations to Build Community

As the end of July grew closer, the NTO Design Team worked tirelessly to construct the final agenda and prepare for all the components of NTO. Our design included a combination of synchronous large group and small group learning experiences, as well as time for independent work on the asynchronous modules. Each component would last for 45-60 minutes within the 8:00 a.m.-11:30 a.m. time frame each of the three days. During the afternoons, the teachers would engage in school-based orientations led by their principals and other administrators.

The most important component related to the action research study was the daily 60-minute small group coaching conversations—these dialogue-centered sessions would begin to build the new teachers' professional learning communities within their schools. As described earlier, the NTO facilitators had been prepared to prioritize building relationships in the virtual Zoom rooms as the new teachers got to know one another and discussed the online module concepts of instructional rigor, classroom management, digital learning, and equity.

All UA members of the NTO Design Team (myself, Kate, Rachel, Nina, and Mary) planned to join different coaching sessions as participant observers to collect data on the intervention through field notes. I developed a protocol that included descriptive and reflective

notes for observing both participants and facilitators. NTO facilitators knew that as participant observers we were focused on learning and supporting them during sessions, rather than critiquing or evaluating them. The action research team also planned additional NTO data collection to evaluate its effectiveness, including a New Teacher Survey and an NTO Facilitator Survey.

Collaborative Planning Builds Educators' Social Capital

While the NTO Design Team broke down silos among departments in the ACSD central office, the NTO facilitators learning community broke down silos across schools. Building group social capital with other educators through cross-district dialogue was a unique learning opportunity for many of both the NTO Design Team and the NTO facilitators' learning communities. Throughout the powerful planning phase, UA faculty and ACSD educators had opportunities to engage in ongoing, focused dialogue about induction teachers' needs, and educators' leadership capacity was built that had an impact far beyond the NTO activities. All three learning communities focused energy on designing an NTO that would give new teachers a similar, impactful group learning experience.

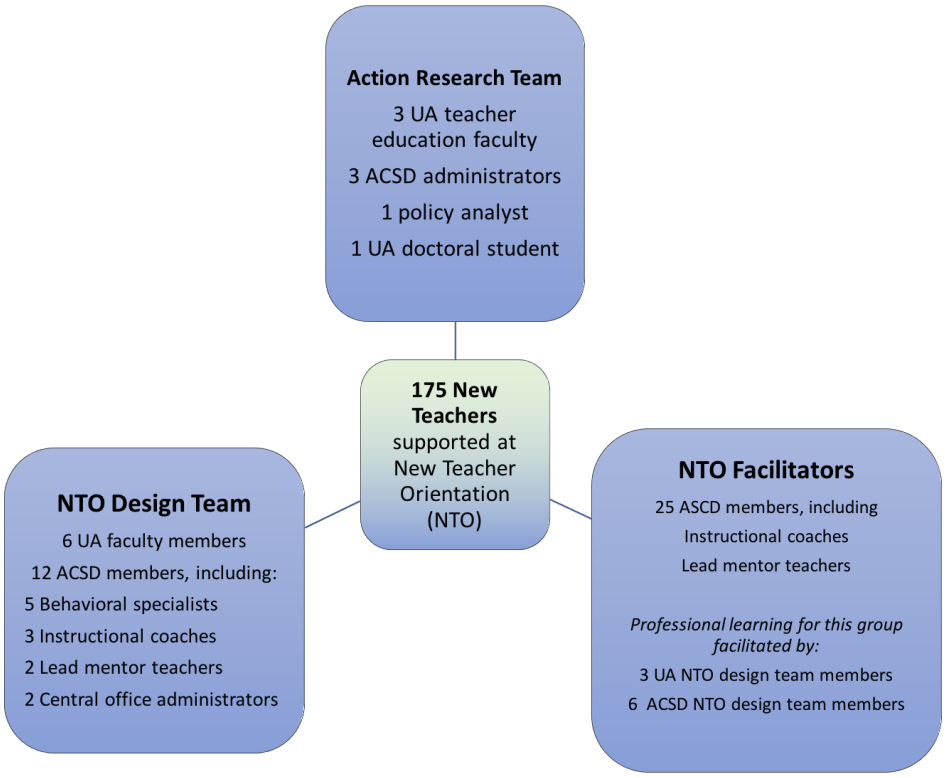
Cycle 1: Taking Action Phase—Building New Teacher Learning Communities

In the taking action phase of the action research, the team's intervention(s) is implemented through programming that has been informed by the data collection (Coghlan & Brannick, 2014). In this phase, the NTO Design Team and NTO facilitators implemented the three-day virtual synchronous New Teacher Orientation (NTO) in late July 2020. The synergy among the work of the 46 educators on the three UA-ACSD learning communities (action research team, NTO Design Team, and NTO facilitators), each serving a particular purpose, had a combined effect of creating powerful connections and learning experiences among the 175 new

teachers, as shown in Figure 15. Many educators were members of more than one learning community, which reinforced the impact of the social network theory-centered design.

Figure 15

Three Learning Communities That Impacted New Teachers' Experiences in ACSD



To introduce the NTO intervention story, several of the new teachers' written survey comments about the NTO are included below. The importance of human connection was the common theme. One commented:

> *I can tell that a lot went into this orientation. I was feeling doubtful about entering teaching in a time like this, but this orientation reassured me that I am at the right place, at the right time!! Thanks for showing me that this is a very supportive school district!*

Another teacher wrote:

> *This is my third district in two states where I have engaged in new year orientation. This was by far the best. The expectations for us are SHOWN to us through the engagement of*

the presenters and coaches. Time was not wasted, and questions were encouraged and responded to with kindness, promptness, and clarity. I think I might have found my "teaching home."

These were just two examples of the more than 30 positive comments new teachers offered on the New Teacher Survey after NTO was completed. So how did the NTO's design and format provide such a powerful learning experience for the new teachers? A shortened version of this story is told below.

Three Days of Building Connection and Community

The first morning of NTO, new teachers entering the Zoom room were met with a warm welcome and upbeat music. Matthew greeted everyone by name as they popped on the screen, and his infectious smile put everyone in a positive mood. For a welcome activity and icebreaker, he asked all the new teachers to open up a virtual padlet and write a short post about an influential educator in their lives. Several then shared their stories verbally and many teachers participated actively in the chat, making connections and commenting on each other's posts. This was a great way to get everyone engaged and interested in meeting each other from the get-go.

In the late morning of all three days, I was a participant observer in small group coaching conversation sessions and witnessed first-hand the school-based learning communities forming before my eyes. The teachers actively used the chat to build community and find out who else was new to town so they could get together with each other outside of the NTO. They also used the chat to share advice and ideas with each other throughout the sessions. The facilitators often read chat comments out loud to reinforce and affirm each person's ideas, as well as to make connections among ideas.

The teams of three or four NTO facilitators did an excellent job of tag-teaming off of one another and reinforcing the learning concepts they were discussing related to classroom management, digital learning, or rigorous instruction by sharing their own personal experiences. They also asked effective guiding questions that prompted deeper thinking, such as "*How will you know that your 'Do Now' [an opening activity to start a class] is successful?"* The new teachers were actively engaged with their cameras on and each person was acknowledged for their contributions verbally or in the chat. One teacher commented in the chat, *"This is the most interactive professional learning I have ever received."*

Facilitators also responded to the anxiety that new teachers had related to starting the school year online instead of in-person due to the Covid-19 pandemic. One day facilitators deviated from the initial plan for the coaching session when someone shared in the chat that they were "ANXIOUS." A facilitator responded, *"I see that you are anxious, Ms. XXX, how can we help?"* This opened up honest dialogue and gave others the opportunity to be vulnerable with their own concerns about teaching during the pandemic as well.

Though not every group functioned as seamlessly as the ones I observed, and we had some predictable technical glitches, the teachers' enthusiasm for ACSD and for the connections they made with each other was infectious. On the last day of the orientation, the chat was exploding with excitement for the year ahead, praise for Matthew's leadership, gratitude for the NTO experience, and support for one another. From my living room, I took photos of my computer's Zoom screens to capture all 175 small boxes showing smiling teachers' faces! That day I wrote in my research journal,

> *The new teachers were bursting with enthusiasm and positivity when they left the final session today. I got teary reading their comments about the kind of things their students*

would say about them 3, 5, and 10 years from now. I cried more when they expressed such excitement and feeling of support/community at the end (in chat and verbally). It was worth all the hard work!

Cycle 1: Evaluating Action Phase—Celebrating Successes and Developing Roadmap for Next Research Cycle

The final phase in the action research cycle is the evaluating phase (Coghlan & Brannick, 2014). The action research team and others involved in implementing the intervention must analyze data collected during and after the intervention to discover what was learned. The analysis naturally informs next steps and further interventions.

In this phase the action research team and others involved reviewed and reflected on the data that had been collected during NTO, as shown in Table 21. We also made time to celebrate our success and share our emotions and experiences with the NTO.

Table 21

ACSD New Teacher Orientation (NTO) Intervention Evaluation Data Sources

Dates	Data Collection Method
July 2020	New Teacher Survey (teachers new to ACSD in 2020-21)
July 2020	NTO Facilitators' Survey
July 2020	NTO Coaching Sessions Observations
August 2020	NTO Debrief Meeting
August 2020	Action Research Team Critical Incident Written Reflections
June 2021	Action Research Team Interviews

Highlights from some of the data sets are shared in this section, as well as a description of the action research team's triangulation of the data. By engaging so intentionally in the evaluation phase, all stakeholders who had been involved in various components of the NTO became even further invested in induction support.

New Teacher Survey (July 2020)

On the final day of the NTO, the 175 new teachers, as well as 26 teachers who had been hired late in the prior year, completed a New Teacher Survey. The quantitative data was overwhelming positive, as shown in Table 22's survey summary. Reflective of the relational purpose of the NTO, 98% reported making connections with other teachers throughout the NTO. Seventy-one percent strongly agreed and 28% agreed that the coaching sessions in particular helped them make connections with other new teachers and feel part of a professional community.

Table 22

ACSD New Teacher Survey- Quantitative Results Summary (July 2020)

n=201 New Teachers	
Overall, the New Teacher Orientation (synchronous and asynchronous) provided me with tools/resources that will ensure success in my teaching during my first year in ACSD. • Yes-99% • No-1%	The New Teacher Orientation helped me make connections with other new teachers • Yes-98% • No-2%
The coaching sessions helped me make connections with other new teachers and feel part of a professional community. • Strongly agree-71% • Agree-28% • Disagree-1%	The coaching sessions assisted me with identifying my highest priority to focus on for the first few weeks of school. • Strongly agree-66% • Agree-33% • Disagree-1%

As described earlier, 30 teachers wrote positive comments and shared their excitement about beginning to teach in ACSD. Additional teachers' comments included: *"Even online, there were so many opportunities to share my thoughts and connect with other new teachers. I was surprised by how well community was fostered."* Another said, *"I thought this orientation was fantastic. As a new teacher, I am nervous and this eased a great deal of my anxiety. It is good to know I am valued and supported."*

The survey data clearly showed that the effort that had been put in to constructing a relational-oriented NTO made a significantly positive impact on new teachers.

NTO Coaching Sessions Observation Data

Shortly after the NTO, Matthew and the UA faculty who served as participant observers in the NTO coaching sessions examined each other's field notes and wrote personal reflections about the strengths to build on, recommendations for improving future NTOs, and ideas for induction support that would be needed in 2020-21 based on our observations. We were thrilled to find common themes that reinforced our belief that the enormous collective partnership effort to redesign NTO had accomplished our primary goal of building connections and community among new teachers. Examples included:

- Facilitators were flexible and responsive to teachers, prioritized relationship-building
- Facilitators were relaxed and approachable— they had an "we are in this together" attitude and were affirming of new teachers
- "Good energy" was present in coaching sessions
- Trust was created among participants—people were speaking openly and honestly

I remember feeling filled with gratitude and joy during this debriefing meeting—our collective efforts had truly made an impact. We were excited to share the positive themes with the entire action research team at our August 2020 meeting.

NTO Debrief Meeting and NTO Facilitator Survey

In early August, the NTO Design Team and the 25 NTO facilitators met virtually to debrief and celebrate the success of NTO with one another. Matthew opened the 40-person meeting by asking everyone to share a shining moment from his or her NTO experience.

Examples included:

- building community in a short amount of time
- teachers made connections with other teachers
- put teachers at ease—lessened anxiety
- adjusted mid-stream to changing situation/needs
- equity came up often in conversations—energizing
- collaboration among facilitators built trust

We also divided into breakout groups and discussed the results of the New Teacher Survey together, including strengths and recommendations for future NTOs. The conversation led to new insights and developed a sense of ownership for carrying the work forward from the NTO into the school year. These meeting notes were eventually shared with the entire action research team.

The action research team also surveyed the NTO facilitators about their experiences with the summer professional learning and facilitating the NTO. We agreed it was important to evaluate the summer professional learning and capture facilitators' perceptions of the NTO coaching conversations. Twenty-one facilitators participated in the survey, and the highlights most relevant to the study are shown in Appendix G. The action research team was particularly interested in the data related to the university-led Online Community Building and Facilitation Workshop. Ninety percent of facilitators strongly agreed or agreed that Nina and Rachel's workshop was beneficial in helping them plan interactive and engaging NTO coaching sessions. Ninety-five percent felt that all of the summer professional learning had prepared them well to facilitate coaching conversations with new teachers. One facilitator commented, *"I felt very*

prepared and that we were given a lot of resources that have been lacking in the past. Great job!"

NTO facilitators also reported the positive impact of the coaching conversations on new teachers—100% agreed that the coaching sessions had benefited new teachers and that they had effectively built community among the new teachers and helped them make connections with one another. All of them also agreed that they enjoyed collaborating with their team to lead the sessions. A prevalent negative comment was that they had not felt completely prepared to lead the coaching conversations, though the New Teacher Survey showed that new teachers felt the facilitators were very effective.

Action Research Team NTO Reflections and Data Triangulation

Action research team members who had been involved in NTO also wrote critical incident reflections about their experiences throughout the planning and taking action process. Team members agreed that the success of NTO was in large part due to Matthew's relational-oriented leadership at the district level. As the primary architect of NTO, his guiding principles were a) a commitment to use the action research team data to guide all of the decisions for designing the content and format, b) a belief that the collaboration among school and university partners would improve the content and format, and c) a focus on building learning communities in all of the spaces where adult educators gathered to plan and implement new teacher supports would benefit everyone involved.

At the end of the study, Kate reflected the action research's influence on the new teachers' experiences during NTO. She said,

> *I feel like there was such a clear impact. In the data, the teachers said, 'I already feel like these people are my family and I feel supported in this district.' And Matthew's love for*

> *them was infectious and he modeled that so well. And I just don't know that there was space for that kind of work before.*

Matthew also reflected on the NTO experience, saying,

> *If we had not spent the time with the community building, getting to know each other, and developing norms, I don't think we would have gotten where we did…Most people dream of putting something like that [NTO] together. We did it! That community piece was key.*

Cycle 1 Concludes

All of these evaluation activities helped the action research team to consider how we should move forward with interventions in the coming 2020-21 school year. We had completed our first major action research cycle and now began a new cycle of planning, implementing, and evaluating an induction support intervention that was informed by all we had learned over the summer. However, there were many uncertainties due to the disruption that Covid-19 was causing. Before the school year started, I wrote in my research journal,

> *I feel pride that the research team contributed different expertise and ideas to the many NTO components. The goal of action research is that the organization is improved and enhanced by the work—I believe we accomplished this this summer. The experience gave me new energy and excitement about the year ahead—if we were able to accomplish something remarkable in the midst of a pandemic, I know it's possible for our research team to think outside the box and develop innovative ways to support new teachers this year.*

Cycle 2 Story: Building Educators' Capacity to Support New Teachers

The second research cycle describes the Induction Support Team (IST) professional learning intervention that emerged from the first action research cycle. The UA-ACSD partnership focused the intervention on building school-based leaders' capacity to support

induction teachers in their schools during a particularly challenging school year. This six-month cycle began with planning action in August 2020 and completed with evaluating action in January 2021. The focus on creating human connections and building community continued.

Cycle 2: Planning Action—Responding to a Disrupted School Year

The 2020-21 school year started in September 2020, one month later than planned due to Covid-19. The additional month gave teachers time to plan for the completely online teaching format. There were high Covid-19 positivity rates among UA students, which spread to the community, making it unsafe for school to open in-person. Our action research team recognized that it was not going to be easy to implement planned interventions when teachers were completely overwhelmed with just learning how to adjust to teaching virtually. Many of these teachers had never set foot in their schools, yet they were now going to meet their students for the first time and instruct them in a digital format. We were grateful that throughout the NTO we had reinforced the idea that the online community and relationship-building practice we did with one another virtually could also be done with P-12 students.

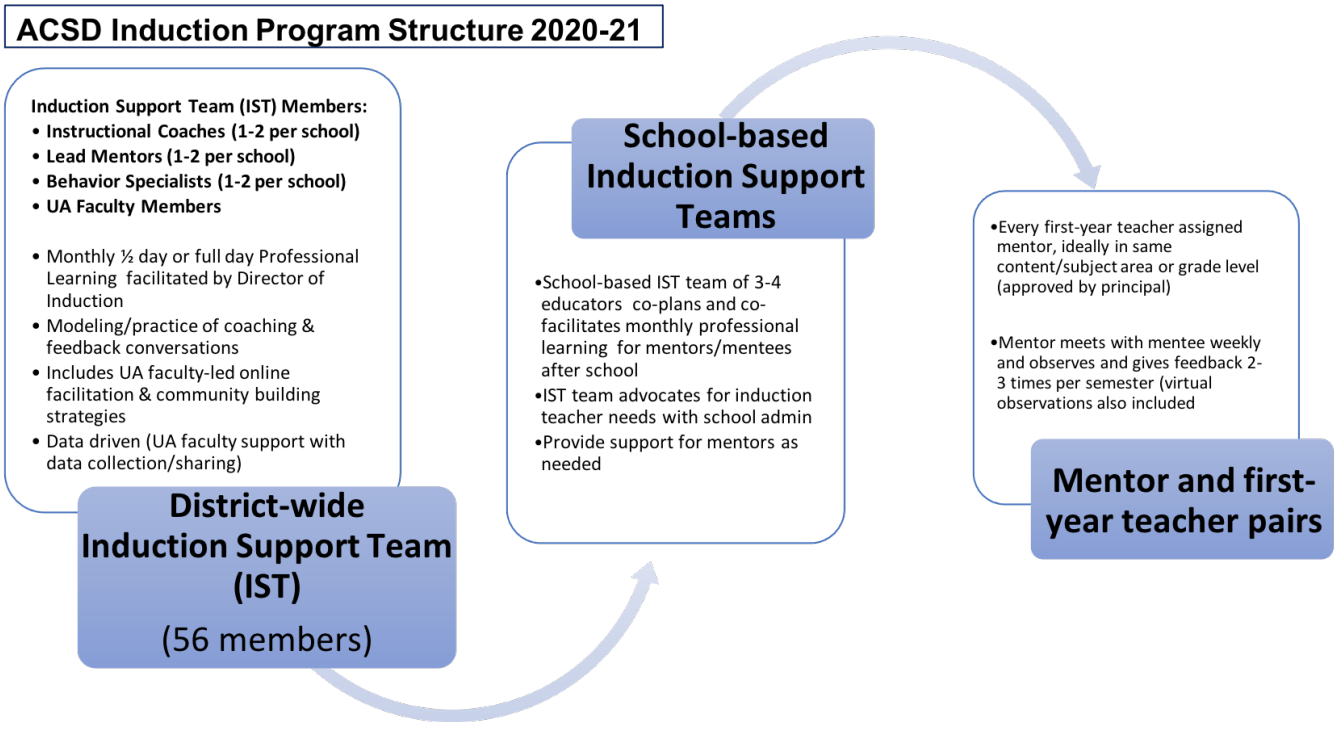
Induction Support Team (IST) Design

Matthew strategized as to how to best structure the ACSD induction program under these conditions. Rather than continue the 2019-20 monthly professional learning for only the lead mentors, he formed the Induction Support Team (IST), which included 56 instructional coaches, behavioral specialists, and lead mentors from all 21 schools. The majority of the educators had been involved with NTO, so they had already collaborated with one another in learning communities. Matthew's idea was that the IST would meet monthly for virtual (Zoom) half-day sessions to continue professional learning focused on building their capacity to support both mentors and induction teachers. The school-based IST teams of three to five people per school

were expected to lead monthly learning communities for induction teachers and mentors using content they would learn in the monthly professional learning sessions. These school-based learning communities would extend the learning and community building that had begun during NTO. Mentors were also expected to meet weekly with their mentees to set goals, observe their teaching, and debrief their observations. The multiple layers of support for the new teachers were intended to ensure that they felt part of a learning community and had access to resources. The ACSD induction program structure, including three major components, is illustrated in Figure 16 below.

Figure 16

ACSD Induction Program Components 2020-21



The action research team recognized that most IST members had begun to grow their capacity to facilitate learning communities with new teachers over the summer, but they needed more opportunities to learn and practice. In addition, new members joined the IST who had not been involved in the summer professional learning. Everyone agreed that extending Nina and

Rachel's Online Community Building and Facilitation Workshop into the IST would be the most feasible partnership induction intervention to implement during the fall 2020 semester. Fortunately, Rachel had become so involved in the research throughout the summer that she began attending and actively participating in the remainder of the action research team meetings.

Working closely with Matthew to plan the professional learning sessions, Nina and Rachel constructed monthly one-hour sessions that focused on developing these school leaders' group facilitation skills and also gave leaders opportunities to dialogue about challenges and successes working with new teachers and mentors. Though the action research team was frustrated that Covid-19 conditions made it challenging to implement other interventions we had planned, the IST sessions provided the action research team a space to make an impact on induction support in the 2020-21 school year, primarily through educator capacity building.

Cycle 2: Taking Action—Induction Support Team Launches

In the monthly virtual half-day IST professional learning sessions, Matthew continued to prioritize building a learning community among the group. He modeled compassion for all the teachers were experiencing and gave them opportunities to voice their challenges and concerns. He also continued to build their capacity by modeling effective coaching conversations and challenging them to extend their inquiry with new teachers and mentors to be responsive to the ever-changing conditions. Nina and Rachel gave the school leaders ongoing opportunities to process how they were building community with their mentors and induction teachers and share successes and challenges.

Nina and Rachel conducted short surveys with IST members prior to most professional learning sessions so they could be responsive to specific needs and challenges teachers were facing each month. From the beginning, data showed that all teachers were having an extremely

challenging first semester. Most of the teachers had never taught virtually before, and the entire school district was using a virtual instruction format. While the IST members knew how important it was to support the new teachers, most of them shared that they were personally struggling with the stress of building new lessons to fit the virtual format, learning how to use Google classroom, and motivating their students to stay engaged online.

During the October IST meeting, in small groups that represented cross-sections of IST leaders from different schools, educators documented their collective strengths regarding induction support. This data showed that consistently across schools, the school-based ISTs were building community was having a positive impact on new teachers. IST members were engaging in unprecedented collaboration with one another as they planned the monthly learning community sessions and advocated for new teachers at their schools. New teachers were also recognized for their strengths and contributions to the school community. The IST meeting notes documented this group discussion, as shown in the following examples:

- New teachers feel really supported emotionally. Everyone rallies around new teachers during monthly meetings.
- Teams are close and helping new teachers. Lots of veteran teachers who have capacity to help and support.
- Each brings a strength as knowledge depth, gifts, and ways to advocate for new teachers. We can advocate with knowledge and agency to support teachers.

Exploring Vulnerability

Nina and Rachel also facilitated a discussion on vulnerability in learning communities. They challenged the IST members to consider sharing their own difficulties and challenges with

the new teachers as a way to open up more dialogue and encourage new teachers to feel more comfortable with honestly sharing their struggles.

When asked to share three things they took away from the session to inform their next work, teachers shared the impact of this rather hard conversation. Examples included:

- Try to be comfortable not having all the answers all the time but smart enough to use our resources and collective wisdom to come up with an out-of-the-box solution.
- An important approach with facilitating mentor meetings for mentor practice will be a willingness to be transparent and open about difficulties.
- Work on feeling discomfort and recognizing the discomfort in others as we transition back to face-to-face instruction.

An Abrupt Ending

The IST intervention concluded in December when Matthew shared with the team that he had taken another position and would no longer be working in the district. The IST team members had formed strong relationships with Matthew and were very upset that he would no longer serve as the induction program leader. Many were concerned about how they would carry on the induction programming that was needed without his support. Though none of us knew it at the time, this was the final meeting of the IST learning community.

Cycle 2: Evaluating Action Phase

Throughout the fall semester, Nina, Rachel, Matthew shared key learnings from the IST professional learning with the action research team. The team was excited that the partnership was building the capacity of school leaders who were supporting new teachers. During the spring semester, data analysis from the IST data collection, including interviews, written reflections, and documents (see Table 23), revealed that the IST intervention built educators' capacity to be

adaptive to a dynamic, unpredictable school year. The IST virtual learning community became a dense social network through the ties educators formed with one another in small group breakout room discussions, interactive chat sessions, and sharing instructional resources. These educators then shared resources and built community in the monthly school-based learning communities that they led with new teachers and mentors. They provided another important layer of support for induction teachers during the challenging year.

Table 23

ACSD Induction Support Team (IST) Intervention Evaluation Data Sources

Dates	Data Collection Method
August-December 2020	IST Professional Learning Session Documents (meeting notes, presentations, surveys, chat records)
January 2021	IST Facilitators' Written Reflections
June 2021	Action Research Team Interviews

Induction Support Team (IST) Facilitators Written Reflections

In January 2021, Matthew, Nina, and Rachel wrote personal reflections about their experiences as IST facilitators. They felt strongly that these monthly gatherings had created community and trust among the leaders of induction support that, in turn, helped them to create strong new teacher and mentor learning communities at their schools. In her reflection, Nina wrote,

> *I think the biggest success was fostering the notions of relationships and authentic support among the IST members – so that they were available to the mentors and, potentially, the new teachers. Relatedly, I think the idea of being responsive to the ebb and flow of a challenging year was also successful. I think that came out of the nature of our action research team and our vision…*

Matthew wrote,

> *I think the biggest takeaway for me is that we created a community of learners. We created a safe and open space where most of the participants would have never had a chance to collaborate and learn together. Typically, teachers go into their classrooms and close the door and do their work in silos—we broke down the silos and allowed members to be vulnerable in a safe space where we could all learn and grow–the techniques used allowed each member of the IST to feel valued, heard, and seen. It was powerful.*

Action Research Team Interviews

The positive impact of the IST intervention also came up in several action research team interviews at the end of the study. Rachel commented,

> *If we hadn't had the [IST] professional learning, there wouldn't have been the cross-discussion spaces…where we were looking at multiple contexts and multiple needs of induction teachers…I think that we gave them a space to see one another, and to also hear that what they were doing to be reaffirmed…And, and we were sounding space. We were a space for them to say, this is, what's hard about this work. This is what we need.*

Cycle 2 Concludes

Though the Induction Support Team professional learning intervention had made a positive impact on the induction program, the action research team felt very uncertain as Cycle 2 concluded in January 2021. When Matthew announced he had taken a leadership position in another state, it was a hard blow for all of us. He had been such a strong leader and advocate for the UA-ACSD induction collaboration. Matthew continued to serve on the action research team, but we were not sure how the partnership work would continue without him. While ACSD

searched for a replacement for his position, the action research team was in a holding pattern. ACSD's top leaders did not want to make decisions about the induction program, including whether to continue IST professional learning, without a new leader in place.

Cycle 3 Story: Planning for Sustainability

The third and final action research cycle focused on planning for the sustainability of the UA-ACSD induction collaboration. Key actions in this five-month phase from February to June 2021 included building new relationships, final data collection, and sharing findings externally. Though the induction partnership work was not sustained due to systemic forced beyond the action research team's control, many lessons were learned in this final phase.

Cycle 3: Planning Action—Focusing on the Future

The action research team recognized that during the time of uncertainty our focus should be on planning for future sustainability of partnership induction efforts. During our January 2021 meeting, we mapped out our priorities for the spring semester, which included developing documents that reflected our study's work and data collection/results, building a relationship with the new ACSD Director of Induction and Retention, collecting final data, and sharing initial findings from the study with internal and external stakeholders. We also hoped to co-construct a sustainability plan for 2021-22 UA-ACSD induction collaboration. Knowing financial resources were needed to support future initiatives, several action research team members also applied for a large grant from a private foundation to support the sustainability of the induction collaboration.

Cycle 3: Taking Action—Managing Change and Final Data Collection

Building New Relationships

The new ACSD Director of Induction and Retention came on board in February 2021, and the team strategized within and outside of meetings about how to share information about

the study with her. After an initial meeting with her and her supervisor, I invited her to join our March 2021 action research team meeting, which she attended. Members shared information about the study and work the interventions that had been implemented, as well as their individual reasons for being interested in continuing the work. In response, she shared that for the remaining months of the school year she would be focused on recruiting staff (also part of her job) and that decisions related to induction planning would likely not take place until fall due to other district priorities.

In the months that followed, the IST team was not reconvened, and no one on the action research team was invited to assist with planning the 2021 New Teacher Orientation. The action research team knew that induction partnership support would probably be non-existent during the spring semester and possibly longer. Kate captured the feelings of the group, saying, *"It just felt like someone had punched our team in the gut and taken the wind out of our sails."* Rachel used the metaphor of a thriving ecosystem suddenly being deprived of essential resources to describe the frozen state of the induction collaboration:

> *If there's an ecosystem that a group can inhabit and thrive within, you can change the players of the group all the time, but you can't change the air around the group and you can't change the water that they have access to. And the other things that feed and nurture it… I feel like the air changed, I feel like the tone changed, the temperature changed… All of the factors that were helping to feed the induction support team…the action research group, the partnership as a whole. And there was something that happened in the environment that made it unsustainable for us to continue.*

Final Data Collection

While in a holding pattern with interventions, the action research team decided to collect two additional sets of data from new teachers, including a focus group with first-year middle school teachers and an End of Year survey with all first-year teachers. Through this data collection, we could learn more from first-year teachers about their 2020-21 teaching and induction experiences, and we could begin to anticipate induction needs they had for their second year of teaching. Since we knew that future partnership interventions would likely focus on the middle school level, the team decided to invite middle school teachers to participate in the focus groups.

First-Year Teacher Focus Groups. In March 2021, I conducted two focus groups with a total of six middle school first-year teachers. The teachers enthusiastically participated and clearly appreciated being asked directly about their experiences. They enjoyed hearing each other's stories and knowing they were not alone in having similar concerns. Key focus group themes most relevant to this research are shown in Table 24.

Table 24

ACSD First-Year Teacher Focus Group Themes (March 2021)

N=6 First-Year Middle School Teachers

Collaboration and Relationships

- Induction teachers are most interested in time and structures that facilitate collaborative planning and professional learning with mentors and other teachers, especially in their content areas.
- Building relationships with other adult educators and with their students are important to new teachers.

Professional Learning Interests

- Content-centered professional learning, including instructional strategies, differentiation, and unit planning
- Social Emotional Learning (SEL) professional learning—concerned about students SEL needs when they return next year after impact of Covid-19
- Diversity and equity professional learning

Top Partnership Induction Ideas Most Interested In

- Mentor-mentee professional learning days where they can observe, lesson plan, and engage in professional learning together
- Content-based professional learning

Top Challenges

- Lack of time is biggest barrier to engaging in induction activities
- Covid-19 disruption—going back and forth between in-person and virtual formats
- Student behavior issues

A central theme that affirmed our prior action research data collection was that teachers were most interested in time and structures that facilitated collaborative planning and professional learning with mentors and other teachers, especially in their same content and subject areas. The new teachers confirmed that building relationships with other educators and with students was very important to them. They also reinforced prior findings that professional learning was most needed in their content (subject) areas and related to diversity and equity issues. Due to the impact of Covid-19, teachers were also concerned about students' well-being and were interested in professional learning related to social-emotional learning (SEL).

ACSD End of Year New Teacher Survey. In May 2021, the new ACSD Director of Induction and I co-constructed the End of Year New Teacher Survey, which helped her to learn more about the study and our long-term goals. One hundred of the teachers who were new to ACSD in 2020-21 completed the New Teacher End of Year Survey as their school year ended. Table 25 shows a sampling of survey data most relevant to the study.

Table 25

ACSD End of Year New Teacher Survey Results Summary (May 2021)

n=100 New Teachers	
Results related to 2020-21 school year	
75% agreed or strong agreed that they received ongoing support from the induction support team in their school throughout 2020-21	68% reported that mentors had checked in with them to discuss their teaching either daily or weekly
74% agreed or strongly agreed that induction teachers were supported and valued in their school	93% agreed or strongly agreed that they felt comfortable asking for help from other teachers in their school
Results related to 2021-22 school year	
Most highly ranked professional learning that teachers anticipate needing in 2021-22: • Content-based or subject based professional learning • Classroom management • Differentiated instruction • Social emotional learning/building relationships with students	Top 4 supports that are most needed in 2021-22: • Student behavior support/ consistency • More collaborative planning time • More focused attention on educators' social-emotional well-being • More substitute teachers
UA-ACSD partnership induction support that would be most beneficial: • Dedicated professional learning days for mentors and mentees to observe other teachers and lesson plan together • Ongoing, content-based professional learning	

Overall, results showed induction teachers' positive experiences with school-based induction support, despite the many challenges of the year. For example, 75% agreed or strong agreed that they received ongoing support from the induction support team in their school

throughout 2020-21, and 93% agreed or strongly agreed that they felt comfortable asking for help from other teachers in their school. One teacher commented, *"Though Covid-19 negatively impacted my first year of teaching in unimaginable ways, my grade level team and my school as a whole made me feel supported and welcome."*

However, the data was not all positive. Several teachers commented about the lack of the support from their mentors and limited opportunities to engage in induction activities such as observing with other teachers and co-planning. Some shared their frustrations with district policies and feeling unsupported.

Looking ahead towards 2021-22, a focus on students' social-emotional learning (SEL) emerged, and the survey reflected the same data from the first-year focus group regarding ACSD-UA partnership support—new teachers were most interested in UA offering content-based professional learning and facilitating mentor-mentee professional learning days where they could observe other teachers and plan lessons together.

External Presentations and Recognition

Though unable to gain traction throughout the spring semester, the action research team remained engaged and committed to sharing initial findings with broader external audiences. In March 2020, a majority of the team presented virtually at the National Association for Professional Development Schools (NAPDS) annual conference, and, in May, several members presented virtually at a state-wide Induction Summit. The presentations were well-received, and the state DOE induction director was especially interested in and supportive of the partnership's innovative work. She posted several of the study's resources on the state DOE induction web page as "exemplars." In addition, the study was cited as exemplary in a state-level education report and UA published a news story about the research on the university's news web page. We

had hoped to have opportunities to present the work internally at ACSD and SOE, but there were no formal opportunities for us to do so.

Minor Interventions

Though no major interventions were underway during this phase, it should be noted that two minor interventions occurred that supported induction teachers, albeit in small numbers. One UA faculty member held a weekly virtual support group for four recent UA graduates who were first-year elementary school teachers. Nina also gained traction with a middle school principal and began partnering with the school's instructional coaches to develop content-centered professional learning in social studies and English Language Arts (ELA) for new teachers and mentors.

Partnership Challenges

By the April 2021 action research team meeting, major challenges had arisen in the UA-ACSD partnership. In response to many challenges the district was experiencing due to Covid-19, some ACSD leaders felt that UA partnership activities were placing additional demands on ACSD that they were not equipped to handle. UA faculty were told not to contact ACSD principals and teachers—the district asked for a "hard reset" with the UA partnership and requested a drastic reduction in the number of pre-service teacher placements for the following year. The APDS executive committee was "put on hold," so I no longer had a formal Project Sponsor committee. I was told that the superintendent and dean would make all future decisions for the partnership as it was "re-envisioned."

During this time, I found out that even though I had served for three years as the SED interim director, the SOE leaders had no intention of making the position permanent. I was informed that school engagement and partnership work had an uncertain future due to budget

cuts and that my part-time salary was "scraped together." Even if I remained as interim director for another year, SOE leaders informed me that there was no guarantee that I could engage with ACSD related to induction work. With the partnership and my position crumbling, I decided to leave UA in mid-May and finish the study as my role as a UA doctoral candidate. My action research team was very supportive of my decision and served as emotional support and a sounding board for me. We were all very disappointed to see the collaboration unraveling, but we recognized it was out of our team's control.

Cycle 3: Evaluating Action—Bringing Closure to the Study

In June 2021 we held our final action research team meeting to wrap up the study. Despite our setbacks, it was a hopeful meeting and a joyful celebration of all that we had accomplished as a team. Everyone shared one thing that they committed to do to continue to advocate for induction teachers, which was truly inspiring. We also each shared something we were grateful for from our journey together and something we had learned along the way. Each member of the team agreed to continue to advocate for induction collaboration in their faculty and school district roles, and we committed to staying in touch and eventually publishing an article and perhaps a toolkit for educators related to what we had learned. We all shared the hope that we would emerge from the temporary setback even stronger together in the future. It was an emotional meeting and difficult for me to facilitate, but it gave us closure and hope for the future.

Action Research Team Interviews

At the end of the school year, I conducted one-on-one semi-structured interviews with all of the action research team members and with Rachel to learn more about their experiences with the action research process. I was excited to learn that their involvement in the process was very

impactful for each of them and influenced their professional work. I also learned how mutually beneficial the process was, as the teacher education faculty discussed the influence of the research on program and course redesign at the university. They all agreed that the action research team was a trusted, respectful learning community and valued how much they had learned from one another's diverse perspectives. A common theme among the interviews included recognition that collaborative leadership is key to the success of partnership initiatives and sustainability. Everyone was very frustrated that the impactful work was not sustained due to lack of support for partnership collaboration from the top leaders. Mary reflected on the lack of leadership support:

> *It is disheartening that once again, a program that was successful was sidelined, halted, because of decisions made at leadership positions. As individuals we can do all the interesting, innovative, impactful work we want, but if there's not support in those [top leadership] positions, then it doesn't happen… It was more than disheartening. It's actually kind of devastating.*

Kate commented on the lack of trust, saying, *"Well, obviously the fact that we had lack of trust at UA from our leaders helped to curtail our work...I feel like that's why things fizzled in this project, as well as in the big picture."*

However, everyone also commented in their interviews everyone involved in the study had made a significant positive impact on the system, and they shared a consistent message about what was needed to sustain induction collaboration. They all believed that each institution must commit personnel and financial resources to designing, implementing, and sustaining induction programming. Specifically, one person from the university and one person from the school district must be dedicated to induction work and facilitate the induction collaboration. These

individuals should be boundary spanning leaders who have the trust of their institutional leaders. Most importantly, the top institutional leaders must value school-university partnership work, including sharing a common vision and goals for the partnership for the collaboration to be sustainable. For example, Matthew said, *"You have to have the commitment from both sides. So if you have a university partner, they have to be in it 100%. The district has to be in it 100%."*

Triangulation and Key Outcomes

In late summer and early fall, I coded the data, as described in Chapter 2, and triangulated multiple data sets to determine the study's findings and conclusions, which are discussed in detail in Chapter 4. Four key outcomes from the study included:

1. An innovative virtual New Teacher Orientation (NTO) built community among 175 new ACSD teachers and provided instructional resources and emotional support through learning communities and virtual learning modules.
2. All new ACSD teachers participated in ongoing school-based learning communities in 2020-21 where they received instructional and emotional support from a diverse team of educators.
3. School-based educators who supported new teachers built their capacity to provide more effective induction support through summer workshops and monthly Induction Support Team (IST) professional learning sessions.
4. District leaders and university faculty built their capacity to support new teachers, mentor teachers, and pre-service teachers through collaborating to design NTO and other induction support.

These outcomes will continue to have a positive impact on the professional lives of more than 250 new teachers, school leaders, and university faculty for years to come.

Cycle 3 Concludes

Though the induction collaboration was not sustained as we had hoped at the end of Cycle 3, many positive changes occurred at the individual, group, and system levels as a result of the research. The power of human connections was the continuous theme that wove throughout the story and the study's outcomes listed above. Groups of educators with a common goal became socially networked learning communities through the combination of trust-building and inquiry mindsets. My data analysis showed that these key ingredients built the group social capital that generated powerful, effective collaboration which resulted in innovative, positive change. Within our complex systems, this group social capital helped our partnership and the educators involved to more effectively navigate the complex challenges that faced us, especially during the Covid-19 pandemic.

Current State

The action research team had envisioned that the induction collaboration would be sustained through a UA-ACSD Induction Advisory Team that many of them wanted to continue to be involved in. We had hoped this group would begin implementing additional induction support interventions that the action research team had recommended based on data from the research. Unfortunately, at the time this dissertation was completed, no formal school-university partnership induction collaborative had been created, the induction program had weakened, and the partnership at-large remained in a state of flux.

Though this current state continues to be very disappointing to all of us who were involved, many of the educators involved in the study continue to advocate for induction support initiatives and use findings from the study to develop induction programming. For example, in the middle school where Elizabeth is an assistant principal, she helped to secure federal CARES

Act funds to hire an instructional coach who focuses specifically on induction teacher development. In early 2022, Kate began working with this induction coach to support new teachers at Elizabeth's middle school. I currently serve on a state-level planning team that organizes an annual induction summit, which features innovative induction programming and research. Many of us on the action research team continue to make state and national presentations about the action research study. In addition, the Induction Support Team members carry on all that they learned through their own practices, and the new teachers who began teaching in the district in 2020 hopefully continue to grow and learn as a result of the 2020-21 support they received.

Personal Reflection

The action research journey was a transformative learning experience for me. The process filled me with energy, and often great joy—I was inspired by our collective action and fulfilled by my role in leading and making a difference in the lives of novice and veteran educators. Leading the process also made me a much more effective and reflective leader and increased my self-confidence. I learned to embrace my identity as a researcher and am now eager to conduct more action research studies and teach action research to other educators. All that was accomplished would not have been possible without the amazing human beings on the action research team. I mourned the end of our learning community, as the synergy we experienced was simply extraordinary. I am immensely grateful for each person's dogged commitment and persistence towards our goal and especially for Matthew's co-leadership throughout the process.

With all that said, I cannot hide my disappointment that the induction collaboration was not sustained—I experienced heartbreak as the lights of our work went out. Though I remained optimistic about sustaining the induction collaboration throughout the process, I learned the hard

way that even when a group of people generate positive, impactful programming, leadership changes and shifts in institutional priorities can prevent sustainability. Fighting to sustain the collaboration in the middle of a pandemic that wreaked havoc on both the university and school district was also an unsurmountable challenge. Though I am aware that few organizational change efforts are successfully sustained, it was still a hard pill to swallow after all the hard work that so many educators did to create positive organizational change.

Looking ahead, though, I have hope for the future. As Chapter 4 describes, this study's findings contribute to literature in the areas of school-university partnerships, induction support, theory, and action research. The findings and conclusions from this study will be shared broadly through conference presentations and articles in hopes of guiding other educators who are engaged in the partnership work and believe in investing in new teachers to ensure a high quality education for all P-12 students in our country. I also know that relationships built and learning and growth among the educators who were involved in the research continues to make a positive impact on ACSD and UA students and educators.

I close this chapter with one of my key takeaways from my research journey. Teaching is first and foremost a human profession built on connections and relationships among educators and students. In her book *Dare to Lead* (2018), Brown reminds us that teachers are some of our most important leaders, and like all daring leaders, they must "care for and be connected to the people they lead" (p.12)—their students. However, in order for teachers to care and connect, they also need to be cared for and connected with. If schools and universities created conditions for teachers to thrive through fostering human relationships and support, imagine how much better the life trajectory of their students, the future leaders of our nation, would be. My research story

is an example of how creating care and connection among P-12 and university educators can result in extraordinary change and growth.

CHAPTER 4: INSIGHTS AND ACTIONABLE KNOWLEDGE

Chapter 4 synthesizes all that was learned in this study and offers important insights and actionable knowledge. The first section of the chapter answers the research question, which includes the study's 10 key findings and three overarching conclusions. The second section discusses the study's implications for research and practice, including eight recommendations for both researchers and practitioners that are grounded in empirical literature. The dissertation concludes with the limitations of the study and a personal reflection.

The purpose of this action research study was to explore complexity and social network theory-informed approaches to induction that supported new teachers in the Atlantic County School District (ACSD)-University of the Atlantic (UA) partnership context. The purpose of the action research project was to design, implement, and evaluate interventions that enhanced the ACSD induction program for new teachers.

`The research was guided by one overarching question: *What is learned at individual, group, and system levels that advances theory and practice in the induction phase of teacher development in a school-university partnership context?*

Study Summary

This study used the action research methodology to address the problem of teacher turnover in a school-university partnership research context. Researchers used a variety of qualitative data collection methods to better understand the problem, address the research question, and design and evaluate the study's interventions. Guided by complex adaptive systems (CAS) theory and social network theory, the action research team, along with other school district and university educators, designed and implemented innovative induction

programming that was responsive to new teachers' needs during the Covid-19 pandemic. The major intervention, a three-day virtual New Teacher Orientation (NTO), built school-based learning communities among new teachers that provided them both emotional and instructional support. The second intervention, monthly Induction Support Team (IST) professional learning sessions, built the capacity of teacher leaders to provide flexible and responsive induction support that helped new teachers navigate the many unprecedented challenges of their first-year of teaching, which occurred during the disruptive first year of the pandemic. The three learning communities that formed during the interventions design process built educators' professional capacity at many levels of the school system and also strengthened partnership collaboration.

Study Findings

The study's findings resulted from a thorough data analysis, including triangulating multiple data collection methods. The 10 key findings from this study relate to induction support, learning communities, school-university partnerships, social network and complexity theories, action research methodology, and leadership. These findings were derived from data collected throughout the research study, including surveys, interviews, focus groups, observations, and documents. The study's findings at each level of the system (individual, group, and system) are summarized in Table 26 below and described in the following section related to the level of the system that is most correlated with the finding.

Table 26

Research Findings

Research Question	Level of the System and Finding Topics	Findings
What is learned at individual, group, and system levels that advances theory and practice in the induction phase of teacher development in a school-university partnership context?	**Individual** Topics: learning communities, action research, complexity	Collaborating in learning communities builds educators' professional capacity. Leading successful action research studies requires effectively navigating system and process complexity. To achieve positive outcomes from action research, the study's leader must sustain a persistent commitment to the purpose, process, and people.
	Group Topics: learning communities, social network theory, complexity theory, and action research	Educator learning communities that prioritize building trusting relationships and developing inquiry mindsets are more likely to generate impactful programs. Group social capital helps educators more effectively navigate system complexity and respond to induction teachers' needs. A diverse, actively engaged action research team is critical to generating positive outcomes from the research process.
	System Topics: induction support, action research, school-university partnerships, leadership	New teachers a) need opportunities for ongoing collaboration with other educators and b) benefit from school-university partnership induction support. Engaging in collaborative action research is mutually beneficial for both school districts and universities involved. Leaders with boundary-spanning competencies catalyze positive change within school-university partnership contexts. Institutional leaders at the highest levels must value school-university partnership collaboration and provide resources for joint initiatives to sustain positive outcomes.

What is learned at the individual level?

Finding 1: Collaborating in learning communities builds educators' professional capacity.

A key finding at the individual level is that all school district and university educators who were involved in induction programming built their professional capacity through collaborative learning communities. When learning communities became dense, tightly connected social networks, each individual benefited from the ongoing collaboration that had a clearly defined purpose. A variety of educators, including university faculty, school district administrators, mentor teachers, and new teachers, built their capacity at multiple levels of the school system and at the university, as described in the section below.

Action Research Team Learning Community

Evidence shows that the eight members of the action research team built significant professional capacity through frequent engagement with one another throughout the two-year study, including building research skills and learning from the diverse perspectives of one another.

In interviews with action research team members at the end of the study, some members described learning that was transformational and continues to significantly impact their professional practice. Matthew shared how he changed during the research process:

> *I feel like I was given space to be my authentic self and to show my true leadership style and share my voice in a way that I have always believed leadership should be like…It definitely helped me grow…and I think I'm a better educator going through the process…It was life-changing.*

Though Rachel was not an action research team member, she was actively involved in the study and attended our meetings during the second year. She reflected on her personal growth, saying,

> *The reality of the imprint of this year for me is that I'm a completely different faculty member right now than I was a year ago. And that's because of you [Erica] and the team…You lit something in me that I have been missing for a while and will not be satisfied to quieting.*

Elizabeth expressed that she views the school system differently now:

> *I learned a lot about system influence in this process…I've learned a lot about leadership systems and structures through this work and being able to see how some of those things work. And I see where there are flaws and where there are strengths in communication and collaboration, and willingness to just engage with other people versus being ego-driven or power driven.*

As the research facilitator, I also experienced learning that was transformative. I became a more effective leader as I learned to let go of control and trust the people and the process to generate innovative change. Because my community building efforts were successful with the team, I now embody an even more collaborative leadership style that I will bring to all of my professional work in the future. Leading this change process also increased my self-confidence and sparked my interest in in leading many more action research studies to catalyze change within P-12 education systems.

Learning Communities That Designed New Teacher Orientation (NTO)

Through planning for and implementing the New Teacher Orientation (NTO) intervention, educators involved in the NTO Design Team and NTO facilitators team (see Figure

15 in Chapter 3) reported gaining new knowledge from one another and learning new skills that helped them effectively support new teachers.

The NTO Design Team engaged deeply with the action research data and co-constructed online learning modules and an orientation that addressed areas where most new teachers need additional support. This collaborative process involved ongoing dialogue to continually improve the professional learning and the orientation design. Rachel shared her learning experience in the NTO Design Team:

> *I think that in the summer there was so much crossover and so much cross learning that was happening in really good and rich ways…And as we were programming and shaping and planning and sharing back and forth the modules—the co-construction of that. I don't think that there's any of that co-constructed module content that didn't end up impacting the ways that UA teacher education folks were thinking about what we were doing and the ways in which ACSD certainly was thinking about [induction].*

The NTO facilitators, primarily mentor teachers, also grew as teacher leaders through ongoing professional learning. They participated in several summer workshops together where they became a learning community and built their capacity to facilitate online learning communities and address a variety of topics, including equity issues, instructional strategies, and digital learning. As a result, data analysis showed that the facilitators were extremely effective in supporting the new teachers' learning and growth during the NTO.

New Teacher Learning Communities

During their district orientation, the 175 new teachers who engaged in the online learning modules and NTO learning communities reported gaining new knowledge that prepared them to be more successful classroom teachers. Many teachers reported that they had built their

professional capacity in areas of equity, classroom management, instructional rigor, and digital learning. One teacher shared in a survey comment,

> *New Teacher Orientation provided me with the opportunity to be challenged, to think about very important aspects of teaching and learning, to plan for practical applications of what was taught during this time, and for collaboration and community building. I even learned a great deal about digital learning simply from participating in this digital NTO. I greatly enjoyed and grew from this experience.*

Another teacher commented, *"The tools available in NTO will put me on the path to creating innovative lessons to challenge my students."*

The new teachers continued to build their capacity with support from their assigned mentors and their monthly school-based learning communities where each school's Induction Support Team (IST) leaders provided both instructional and emotional support. IST members were positive about the school-based new learning communities they facilitated throughout the fall semester. One mentor said, *"New teachers feel really supported emotionally. Everyone rallies around new teachers during monthly meetings."* Another commented, *"Teams are close and helping new teachers. Lots of veteran teachers have capacity to help and support."*

Results from the new teacher survey at the end of the 2020-21 school year showed that 75% of new teachers agreed or strong agreed that they received ongoing support from the induction support team in their school throughout 2020-21, and 93% agreed or strongly agreed that they felt comfortable asking for help from other teachers in their school.

Induction Support Team (IST) Learning Community

Throughout the school year, ACSD educators involved in the Induction Support Team (IST) learning community (lead mentors, instructional coaches, and behavior specialists) also

built their professional capacity to lead effective school-based induction programs. Ongoing dialogue and individual and group reflection during monthly half-day professional learning sessions contributed to their growth as teacher leaders. Matthew, one of the IST facilitators, described the learning community, saying,

> *I think the biggest takeaway for me is that we created a community of learners. We created a safe and open space where most of the participants would have never had a chance to collaborate and learn together. Typically, teachers go into their classrooms and close the door and do their work in silos—we broke down the silos and allowed members to be vulnerable in a safe space where we could all learn and grow–the techniques used allowed each member of the IST to feel valued, heard, and seen. It was powerful.*

Finding 2: Leading successful action research studies requires effectively navigating system and process complexity.

A key finding at the individual level that may benefit doctoral students who are leading action research dissertations is that action research requires navigating the complexity of organizations, as well as the complexity of an unpredictable research process. Researchers need to build adaptive leadership capabilities to help them successfully manage dynamic, uncertain environments and create conditions for emergence that can result in innovation and productive action.

System Complexity in Action Research

A core competency for managing system complexity in action research includes being adaptive to dynamic conditions that are uncertain and ever-changing. Throughout the study, I used an adaptive leadership style (Heifetz & Linsky, 2017) with the action research team so that

we could effectively respond to unexpected circumstances, such as the Covid-19 pandemic and a superintendent abruptly resigning from his position. The action research process was not linear, and we had to adjust our expectations and plans when organizational conditions changed. I learned to trust in the process and the people engaged it to guide our course. In a research reflective memo I wrote, *"I have gotten more comfortable with not knowing the outcome of our team meetings ahead of time—I am much more comfortable with guiding the group but not imposing on the group than I was early on."*

I also helped my action research team to continually recognize the complexity of the problem we were tackling inside of a complex system— there were no simple answers to improving new teacher retention. By beginning the construction phase with system mapping (see Figure 14 in Chapter 3) as a form of data analysis, I built awareness among the research team of the complex adaptive system (CAS) in which induction teachers work and the myriad factors and nested systems that affect new teachers' job satisfaction and efficacy. Ann said in her interview,

> *You [Erica] were really creative in coming up with tools like the system mapping to move us forward and to facilitate the conversation…And I think about how often when we're trying to solve complex problems or address complex issues, we don't do it alone. And how do you bring people together in a productive way?*

Process Complexity in Action Research

Not only were the school system and research problems complex, but leading the action research process was also a complex endeavor. When making decisions about data collection, who to include in meetings, how to share our work, etc., the action research team always had to consider many factors. For example, we had to distribute surveys at times when teachers were not overburdened with mandatory testing and grading deadlines.

Leading a study that involved two institutions added additional layer of complexity to the action research process. Each organization's culture and leaders had to be considered when making key decisions, and each institution's priorities affected our decisions as well. This required continually communicating about the work to stakeholders in both organizations and appropriately sharing data with different stakeholders throughout the process to maintain buy-in from both the school district and the university.

Action researchers also have to create conditions that generate emergence and innovation. Matthew and I devoted significant time and energy building dense social networks among educators involved—as a result, the collaboration among the learning communities generated exciting and unexpected innovations. The summer Online Community Building and Facilitation Workshop that grew out of the research was a great example of emergence that was responsive to a major need. This workshop also sparked the idea of continuing professional learning with the Induction Support Team (IST) in the fall semester to build their capacity to support new teachers—our second action research intervention. These interventions unexpectedly emerged from the collaborative process and being responsive to system changes due to the impact of Covid-19. Rachel described the group's response to this exciting emergence, saying,

> *And we had a moment of synergy in the action research team meeting where we were all in a space of surprise and wonder. Because we recognized that what had been built and implemented in the summer was unique and special and important and it was impacting the fall work. It grew out of the action research cycle.*

Finding 3: To achieve positive outcomes from action research, the study's leader must sustain a persistent commitment to the purpose, process, and people.

For action research to be successful, the lead researcher must remain committed to the reason for the study, using the methodology with rigor, and tending to relationships with everyone involved. Staying focused on the purpose builds momentum and commitment. Careful and constant attention to the action research process helps to ensure rigor. Relationships with people involved must be nurtured, since the quality of human relationships impacts the process and outcomes from the study. These three focus areas are described within the context of my study in the section below.

Purpose

First, the study found that ongoing communication about the purpose of the study to the action research team and others who were involved was critical to our success. We never lost sight of why the research was important in our context. My key message was that if we developed support programming that was responsive to new teachers' needs, they would be more effective and innovative teachers, and P-12 students' engagement and learning would increase as a result. By focusing on teachers' and students' learning and success in every meeting, data collection and analysis effort, and program design process, we sustained and even increased our collective momentum and commitment, despite challenges we faced. Kate described this focus on our research purpose:

> *It's like this sense of urgency was driven by we need to prepare these teachers so they can be the best people they can for the kids. I feel like so many times when you work with leaders, they will say it's for the kids, but then they will make decisions that are really better for organizations or leaders. And I don't ever believe that was the case in our*

work. It was always, 'How can we help support teachers?' We need to make sure that the teachers are happy because happy teachers will help teach children better.

Process

Secondly, I discovered that lead researchers must give the action research process constant attention for it to be successful. To guide the phases of each cycle with fidelity and rigor, while being mindful of internal and external forces that affect the research, requires the lead researcher to tend to the research on daily basis. This continuous work included frequently documenting the research process, effectively managing data collection efforts, communicating regularly and clearly with stakeholders, navigating organizational politics and conflicts, planning productive and engaging action research team meetings, and managing relationships among the school and university partners. In an early research reflection memo I wrote,

Leading action research requires giving attention to so many facets of the process simultaneously that it feels like a massive multi-tasking exercise…But, thanks to coursework in the doctoral program, I now have the tools to better handle difficult situations, continuous change, and an ambiguous future…I trust the process to unfold in the way that works for the people, organization, and current context involved.

People

Finally, and most importantly, my data analysis showed that the lead researcher must continually nurture relationships with all people involved in the research process to achieve the goals of the study. Most importantly, the action research team members need to feel valued and supported in the process, which required more than monthly meetings. I communicated individually with members in between meetings to bounce ideas off of them, share information and resources, and build personal relationships.

As new educators got involved with designing and implementing interventions, I made sure they understood the purpose of the research and how their diverse perspectives enriched and strengthened the intervention designs. I also thoughtfully attended to research participants in focus groups and surveys to make sure they understood the study's purpose and how much their feedback was valued and appreciated. In addition, the educators who participated in interventions were informed about the data that had contributed to the program design, and I frequently asked for their feedback for continuous improvement. Ann spoke to the importance of building human relationships for effectively leading action research, saying,

> *This stuff is so hard and so complex. You have to bring people to the table. No one entity can solve this. And so it's the process of constructing the work and of you [Erica] creating a space for the relationships to build the human part. So there was both the construction and substance of the work and the facilitation of the working relationships. I really have reflected on that…I learned a lot.*

My sustained attention to these "3 Ps" resulted in impactful outcomes in my study, and novice action researchers will likely benefit from committing to these core concepts throughout the process.

What is learned at the group level?

Finding 4: Educator learning communities that prioritize building trusting relationships and developing inquiry mindsets are more likely to generate impactful programs.

Learning communities are fairly easy to form, but a key finding from this study is that learning communities collaborate much more effectively to create change when time and energy is devoted to building trusting relationships and developing inquiry mindsets among members. In the context of this study, the term "inquiry mindset" refers to individuals' actions with group

settings, such as respectful dialogue, active listening, and personal and group reflection, that contribute to ongoing learning and growth. The interaction between trusting relationships and inquiry mindsets built dense social networks, which resulted in group social capital that was essential to productive group collaboration.

Trusting Relationships

The data analysis related to the three learning communities that were studied most in-depth (the action research team, the NTO Design Team, and the Induction Support Team) showed consistently that building trusting among team members was foundational to future productive collaboration. The theme of trust was coded 55 times in the data analysis, and trust was often referenced as a critical component of learning community effectiveness.

Trust in the Action Research Team. The trusting relationships among action research team members helped to fuel the work we did together. Nina described how important trust was to the group:

> *The key ingredient to what we accomplished together was trust. Trust was number one. Trusting ourselves as educators from all these different walks of life and different roles that we're serving. Trusting ourselves, trusting one another and, trusting the process—there are three components of trust. I think that comes first.*

Rachel explained the trust that she experienced in the group, saying,

> *You also had trust inside the team that every player was committed to it. We were all looking to the same outcome. We all were bought in to what that would be. And it's why we could also talk honestly and openly with one another about what wasn't working. And that usually never happens, especially in research team meetings.*

Trust in the NTO Design Team. Trust was also important to the collaboration among the NTO Design Team, as Matthew described in a written reflection:

> *We developed a trusting team that now seems to hold mutual respect for each other and for the knowledge that each member brings to the table. The time spent engaging in building community was key to ensuring that others in the group felt valued, heard, and seen. Building community and trust is key in making groups of people work collaboratively and effectively together. I feel like I was able to do this!*

Trust Within the Induction Support Team. Within the Induction Support Team (IST), all three facilitators agreed in written reflections that the monthly gatherings had created community and trust among the teams of school-based induction support leaders. This collegiality helped them to create strong new teacher and mentor learning communities at their schools.

Elements That Built Trust. This research also found that learning communities need regular, sustained time together in order to build these trusting relationships. Relationship-building included regular personal check-ins with one another and time for small group conversation within meetings to get to know one another as human beings. Trust was also built through intentionally developing group norms and acknowledging the diversity of backgrounds and experiences in each learning community. Our learning communities all included diversity of age, gender, race, professional experience and job roles, which offered a variety of perspectives that contributed to designing more effective programming.

Inquiry Mindsets

Inquiry mindsets among group members was another key component that made the three learning communities effective and productive. As mentioned earlier, an inquiry-orientation

within the research context was evident through respectful group dialogue, active listening, personal and group reflection, and an orientation towards ongoing learning from one another. Group leaders, such as myself and Matthew, modeled these behaviors and practices, but the learning communities incorporated inquiry mindsets into their norms so that everyone involved developed an inquiry-stance towards the collaborative work.

Group Dialogue. Isaacs (1999) provided a helpful distinction between discussion and dialogue in group conversation. While discussion is about making a decision and seeks closure and completion, dialogue "seeks to open possibilities and see new options…Dialogue is about evoking insight and…through dialogue we learn how to engage our hearts" (Isaacs, 1999, pp. 45-47). Respectful dialogue was a prominent theme in the data, as educators who engaged in the learning communities recognized that having trusting, open conversations with one another was critical to gaining new insights and generating innovative ideas. Kate described one example of how group dialogue resulted in more impactful programming, saying,

> *And I think because of the Design Team conversations, our action research team was able to say, "Equity is not the separate thing," for example. "How can we weave it through every single thing we do all in these [online learning] modules?"*

As a result, equity issues became a core component of both the online learning modules and the synchronous NTO content. Matthew also mentioned the power of dialogue in the action research team, saying, *"When I think about the [system] map that we created—we were able to really just engage in that discourse. I think that was really powerful. And I think as a group, we found ourselves we were stronger together."*

Active Listening. According to Isaacs (1999), "the heart of dialogue is a simple but profound capacity to listen" (p. 83). Listening requires cultivating silence within ourselves and

"receiving the meanings that well up from deep within in us" (Isaacs, 1999, p. 102). Within the learning communities in the study, active listening was an inquiry mindset that helped the groups to take perspective of the web of relationships among the people in the group. Isaacs (1999) referred to this as "listening together…for common understanding and communion" (p. 103). Group facilitators and members listened to one another without interrupting and often repeated back to the speaker what they believed was being said to clarify its meaning and gain deeper understanding. Elizabeth explained how important this was in the action research team:

> *Everyone was so willing to listen to what other people said, really hear it, and then move that forward. You often feel like in group settings that some people are just listening to prepare for their next point. And I don't feel that way in our group. I always feel like there's true listening, internalizing, and moving the conversation based on the work of others. And that only happens because the trust that's built.*

Reflection. Individual and group reflection was another core inquiry mindset that was cultivated in all of the study's learning communities. Meeting time was dedicated to journaling, and reflective prompts for individual learning and group discussion were embedded in meeting agendas and group learning activities, such as data analysis. This reflection-oriented mindset then transferred seamlessly into the learning experiences that were designed for the new teachers, including segments in the online learning modules dedicated to reflection and time set aside for reflection in the NTO small group learning communities. After NTO, one teacher commented in the survey, *"I enjoyed what other teachers had to say about their reflections, stimulating my own thinking and premises of teaching."*

Social network theory, which is discussed in more detail in Conclusion 1, guided the study's interventions and played a major role in the learning community processes. The

combination of trusting relationships and inquiry within learning communities built social networks, as each individual developed ties with other members. By meeting together regularly over time, the social networks then generated group social capital as individuals exchanged knowledge and expertise. Communities learned together through activities such as data collection and analysis and provided one another emotional support. This group social capital then generated productive collaboration in groups. To summarize this finding, without the combination of trusting relationships and inquiry mindsets within group learning communities, the interventions that were designed and implemented would not have resulted in such impactful programming and support for novice teachers.

Finding 5: Group social capital helps educators more effectively navigate system complexity and respond to induction teachers' needs.

Education researchers who have used complexity theory (David & Sumara, 2006; Martin & Dismuke, 2018; McGee & Edson, 2014; Uhl-Bien & Arena, 2017) have found that key human competencies needed to navigate complex adaptive systems (CAS) include being:

- adaptive to constant change (flexible and resilient)
- responsive to dynamic (uncertain and non-linear) environments
- able to navigate and manage multiple nested systems, such as the classroom, school, district, and community systems
- open to emergence from self, group, and system

This study found that within all the learning communities involved in induction support, educators built group social capital that developed these "complexity competencies" that helped them better navigate the challenges of a complex system As discussed in Chapter 1, resources exist in social relations, and social capital is built through the quality of ties in a social system.

Creating social networks that develop group social capital in an organization may build the organization's capacity to enact change. The section below describes how educators in three learning community contexts developed social capital that assisted them in navigating system complexity and responding effectively to induction teachers' needs.

NTO Design Team Learning Community and Complexity

The NTO Design Team learning community was an excellent example of how group social capital helped educators navigate complex systems. This team approached their work with a clear understanding of the uncertainty in the current context due to Covid-19, which forced both the school district and the university to close their doors and teach students remotely. Designing an all- virtual orientation for new teachers was a novel concept with no playbook. Instead of being daunted by the task, the group was adaptive to the dynamic situation and embraced the challenge as an opportunity to innovate. By inviting additional educators from both the university and the school district into the Design Team, social capital was built among diverse educators across departments and institutions that facilitated emergence of innovative programming, as described in Chapter 3. Mary described the exciting emergence that occurred in the NTO Design Team:

> *Someone would say, "We could do this…" and then that would lead to asking Julie and Leah to be included in the group. And then they would join us and hear the conversation and get excited and say, "We could also do this…" and we would do that…What came out was so much more thoughtful, more substantive, and more accurately and appropriately addressed the needs of new teachers.*

New teachers felt welcomed, connected to another, and equipped with resources as a result of this powerful Design Team collaboration.

NTO Facilitators Learning Community and Complexity

The summer Online Community Building and Facilitation Workshop led by university faculty (Nina and Rachel) developed group social capital among NTO facilitators, including many mentor teachers, that helped them support new teachers in a dynamic environment. The workshop's content included developing core competencies related to navigating system complexity. Nina and Rachel modeled adaptive leadership and helped to build NTO facilitators' confidence to flexibly respond to ever-changing conditions and unanticipated needs from new teachers. As a result, multiple data sources from the NTO learning community sessions showed that facilitators often pivoted and were flexible and adaptive to the questions and concerns of new teachers, even when these were not related to the content they had prepared for the sessions. One of the themes NTO facilitators shared during an NTO debriefing meeting was, *"We adjusted mid-stream to changing situations and needs."*

New teachers were enthusiastic about the competence of the NTO facilitators. One teacher commented, in the survey, *"All facilitators were welcoming, excited, and full of life. Most districts seem to have facilitators that have compassion fatigue or apathy. ACSD's NTO was motivational, inspiring, and informative."*

Induction Support Team (IST) Learning Community and Complexity

Within the context of the Induction Support Team (IST) learning community, both facilitators and participants continued to build their capacity to be adaptive to a dynamic, unpredictable school year. During each month's professional learning session, facilitators (Nina, Rachel, and Matthew) adapted to constant change by designing content relevant to the challenges IST members were experiencing when supporting new teachers. Nina and Rachel also focused some sessions on becoming comfortable with uncertainty and showing vulnerability, which

helped to build the IST members' capacity to manage the complex challenges they and the new teachers were facing. They encouraged IST members to share their personal difficulties with the new teachers and mentors and question the assumption that just because they had more teaching experience, they had to have all the answers. This helped the IST members feel more flexible with how they might address new teachers' challenges during a year when they were experiencing unprecedented difficulties themselves due to the impact of the pandemic. Over the course of the fall semester, this virtual learning community that included more than 50 educators in 21 schools became a dense social network. The network was formed through small group breakout room discussions, interactive chat sessions, and sharing instructional resources. In a written reflection, Nina wrote,

> *I think the idea of being responsive to the ebb and flow of a challenging year was successful in the IST. I think that came out of the nature of our action research team and our vision for the IST professional learning…I think my takeaway is to lean into the unknown with openness and a willingness to grow with the IST. At times I was growing anxious about what to prep and the direction but trusting the process and the people involved was a helpful reminder of the power of community.*

Rachel described the complexity of the IST work in her interview, saying, "*We were looking at multiple contexts and multiple needs of induction teachers and multiple ways of response and support by the folks who were doing that work."* One IST member described a takeaway from the session related to managing uncertainty, saying, *"We should try to be comfortable having all the answers all the time but smart enough to use our resources and collective wisdom to come up with an out-of-the box solution."*

In summary, this study found and inextricable link between social network theory and complex adaptive systems theory within the context of group learning communities. Within these communities, educators built social capital that helped them be more adaptive to constant change and responsive to an uncertain, dynamic environment. They also navigated complex nested systems more effectively, which resulted in the emergence of new ideas that influenced the system.

Finding 6: A diverse, actively engaged action research team is critical to generating positive outcomes from the research process.

Within the context of our school-university partnership no one had previously engaged in a collaborative action research study until this study. Analysis of action research team interviews and meeting minutes confirmed that the action research team remained highly engaged throughout the two-year process—the group sustained momentum and remained focused on designing, implementing, and evaluating induction support interventions. A key finding from the study is that a diverse, actively engaged research team was critical to generating positive outcomes from the research process. Many of the same concepts discussed in Finding 4 are relevant to this finding. Dedicating time to building trusting relationships and inquiry mindsets facilitated the active engagement among the action research team that sustained the study's momentum.

Diversity

One of the team's assets was its diverse membership, including diversity in race, age, educational backgrounds, and positions with the university and school systems. The diversity of the eight members brought many different perspectives to the problem of new teacher support, which helped the team learn about the complexity of the problem. Both school district

administrators and university faculty also recognized the value in collaborating across institutions to address the complex, pressing problem of new teacher retention.

Each team member also had diverse strengths and skillsets that were used effectively for different parts of the research process. For example, Nina had the expertise needed to implement an induction support intervention, Elizabeth advised us frequently on how school administrators should be involved and invested in the induction activities, and Ann contributed state-level education information and policies that helped to inform our decisions. In interviews at the end of the study, several members of the action research team shared how much they valued the team's diversity. Elizabeth reflected,

> *I think that there was such a wide range of expertise within the group, and there was a sharing of that knowledge and skill. I just learned so much from each individual that I hope that some of the group takeaway was just drawing on other people's expertise as we all move forward with decision-making, whether it's the collective decisions we're making, or whether it's things we do individually carrying off of this [action research].*

Matthew added,

> *We all had varied experiences with teacher prep type programs. And we all had varied experiences around the types of supports that we received during our individual experiences, but also we were able to come together as a group to really come to consensus based on those experiences.*

Trusting Relationships and Inquiry Mindsets

Reinforcing the concepts of trust and inquiry discussed in Finding 4, a key reason that the team remained actively engaged were the trusting relationships and inquiry mindsets that were built during our monthly meetings. Everyone on the team saw themselves as an equal co-

researcher who had important contributions to make to the learning community. The team agreements (norms) that the group co-constructed included being respectful, "equity of voice," "trust," "open communication," and "active input," among other norms. These agreements fostered collective commitment to ongoing learning and ultimately resulted in productive collaboration and impactful action. The team genuinely enjoyed working together—each person valued everyone else's contributions and learned from one another, which contributed to the group's active engagement throughout the course of two years. Kate described her experience with team, saying,

> *When I think about my positive experiences, it's feeling like there was like mutual respect and like things were happening. It was truly generative, you know? And it felt so good…to be feeling like I'm a part of really building something that's going to help teachers and kids. And this isn't adversarial. It's not all the politics—none of that was present in our group.*

Mary also reflected on the commitment of the action research team:

> *Even with changes that had happened at UA, even with changes that had happened at ACSD, I felt like those of us in the action research group were true partners and that we were representing areas and units that were committed to this partnership—to trying to figure this work out…I think that allowed the action research process to play out.*

Reinforcing the core action research principle of team members as co-researchers in the inquiry process, Nina said,

> *It's this whole collaborative thing where everyone becomes an expert on the thing together and then brings whatever they're bringing to the table. So that along the way*

was really powerful to get to witness—how everyone is a researcher within themselves. They just show up as a researcher.

Dedicated Time and Sustained Momentum

The team members also recognized that the issue of new teacher support required dedicating significant time and focused attention on the issue. Everyone agreed that the work we were doing was extremely important—our clear sense of purpose and passion for new teacher support fueled members' commitments to two-hour monthly meetings and work in-between meetings despite many other competing demands. When Covid-19 shut down the university and school district, the group shifted effortlessly to meeting virtually and remained committed to the process. Five team members devoted significant time throughout an entire summer to designing and implementing interventions because they believed so strongly in the work (most were unpaid during this time). Kate emphasized the sense of urgency that propelled the team:

I think that belief system [to help teachers so they can help students] was shared in our whole team, of course, and permeated how Matthew organized NTO. And then all of the supports after that…we need to make sure teachers feel nurtured so that they can go in the classroom, nurture children and teach children like that. It's just that sense of urgency undergirding everything for all of us.

After successfully implementing our interventions, action research team members also recognized the potential for us to keep building momentum and use our collective energy to benefit all educators, especially during a particularly challenging time for the education profession. Despite institutional barriers limiting the sustainability of our interventions and the induction collaboration, action research team members made presentations at the regional, state, and national level over the course of 2021-22 to share findings that could benefit induction

support in other school-university contexts. They also continued to advocate for induction support in their professional contexts, and some members continued to support new teachers through individual coaching and professional learning.

What is learned at the system level?

Finding 7: New teachers a) need opportunities for ongoing collaboration with other educators and b) benefit from school-university partnership induction support.

Ongoing Collaboration with Other Educators

As Nguyen, et al. (2019) found in their meta-analysis, comprehensive induction programs include multiple opportunities for teachers to collaborate. These researchers urged educators and policymakers to consider "creating school environments where strong administrative support, consistent teacher collaborations, and regular and meaningful professional development" (Nguyen, 2019, p. 34) help keep teachers in the profession. In this study, the induction program was designed to welcome new teachers into a learning environment that valued teacher collaboration from their first day in the district. The NTO new teacher learning communities gave teachers an immediate opportunity to make connections with other new teachers and build relationships with experienced educators in their schools who were well-prepared to answer their questions, offer advice and emotional support, and provide them with instructional resources. Teachers greatly appreciated the induction program's culture of collaboration during orientation and the opportunity to learn from a variety of veteran educators through monthly school-based learning communities. The ongoing data collection from new teachers showed that induction activities they were most interested in all involved collaborating with other educators to grow and learn.

This research also found that school administrators, especially principals, need to play an active role in supporting induction teachers and creating conditions for collaborative learning, including giving teachers time for co-planning, co-teaching, observing each other's classrooms, and engaging in professional learning together with mentors. When asked to identify the most important induction support, one teacher in a focus group with first-year teachers said, "*Well, I would probably say the most important thing now is collaborative planning. I think that's the thing that helps us all out."* Another induction teacher said,

> *I think it [observing other teachers] should be kind of like our collaborative planning where it's kind of built in where, especially for new teachers. I come away from watching other teachers with SO many ideas and so like, "Oh, I could do this, I could do that."*

At the end of NTO, one new teacher commented in the survey, *"It is important to have a network of connections or teachers you can learn from and gain support."*

School-University Partnership Induction Support

Comprehensive induction research (Smith & Ingersoll, 2004) also shows that induction teachers who have access to "packages" (p. 706) of support that include both mentoring and group induction activities are less likely to leave their positions. In the context of this study, the interventions that supported new teachers were designed and implemented with the active involvement of university faculty working collaboratively with district educators. The school-university partnership facilitated gathering feedback directly from new teachers and mentors through surveys and focus groups, which guided the design of all induction supports created during the research process. University faculty expertise in the areas of classroom management, equity issues in schools, and online facilitation and community building significantly enhanced new teachers' experiences in all components of ACSD's induction program.

For induction programs to effectively impact teacher retention, they need to include multiple layers of support, including formal programming and informal opportunities for teachers to collaborate with other educators who have variety of different backgrounds and experiences. School-university partnerships can play an important role in strengthening induction support, especially in school districts that lack the resources to implement comprehensive induction programs.

Finding 8: Engaging in collaborative action research is mutually beneficial for both school districts and universities involved.

A key concept that undergirds school-university partnerships that use the Professional Development Schools (PDS) model is that partnerships should be mutually beneficial for both institutions (NAPDS, 2021, p. 13). This reciprocity means that the relationship is not one-sided and that both partners "share the work and benefit from the collaboration" (NAPDS, 2021, p. 13). This study found that both the action research process and the outcomes benefited the school district and the university systems.

Benefits to Atlantic County School District (ACSD)

The research impact on the ACSD system was significant. The study occurred at the same time the district was starting a new induction program, and the research helped to inform the design and implementation of the new program. Positive outcomes that benefited ACSD educators are summarized in Table 27 and described below.

Table 27

Study's Positive Outcomes

Positive Outcomes
An innovative virtual New Teacher Orientation built community among new teachers and provided instructional resources and emotional support.
New teachers participated in ongoing school-based learning communities in 2020-21 where they received instructional and emotional support from a diverse team of educators.
School-based educators who supported new teachers built their professional capacity and grew as teacher leaders through ongoing professional learning.
Planning induction programming in diverse learning communities broke down silos, built educators' professional capacity, and strengthened the school-university partnership.

The study's major intervention, the innovative virtual New Teacher Orientation that was designed and implemented in July 2020, resulted in positive outcomes. The orientation built community among new teachers and provided them with instructional resources and emotional support. New teachers built social networks and gained new knowledge that helped them be more successful in their first year of teaching in the district. Another positive outcome was that new teachers participated in ongoing school-based learning communities in 2020-21 where they received instructional and emotional support from a diverse team of educators who had learned how to effectively facilitate induction learning communities. Access to these social networks built new teachers' capacity to navigate a challenging school year.

The study's second intervention, the Induction Support Team (IST) professional learning, resulted in positive outcomes for educators who supported new teachers and new teachers. School-based educators, including lead mentors, instructional coaches, and behavioral specialists, built their professional capacity to provide more effective induction support through ongoing professional learning over the summer and through the monthly IST learning

community sessions. They developed as teacher leaders who were more prepared to effectively and flexibly support new teachers in a complex system. They also became a dense social network among themselves—they built group social capital across schools, including offering one another resources and emotional support.

Finally, designing induction programming in diverse learning communities broke down silos among district departments, across schools, and between university and school district educators. All educators involved experienced ongoing learning and built their professional capacity to respond to new teachers' needs. The school-university partnership was also strengthened as a result of the collaboration.

Action Research Team Influence. The action research also facilitated unexpected emergence that benefited ACSD. For example, Elizabeth, an action research team member, shared her knowledge of effective induction support with her middle school leadership team, which resulted in deciding to use federal funding allocated to the school to hire an induction-focused instructional coach for 2021-22. Elizabeth explained that her involvement in the action research impacted this decision, saying, *"I do think it [hiring an induction coach] was completely born out of this team's work and focus on new teachers and definitely would put it in that category of an unanticipated spinoff of the work."*

Secondly, the action research team collected and analyzed important data from new teachers and mentor teachers that influenced how the district's new induction program was designed and implemented, and this data was shared with different levels of the system. Mentors learned more about the needs of new teachers in their schools from the survey data, and principals also used the data to inform how they structured induction support in their schools. Sharon described the impact of this in her interview,

> *As a building leader, I think one of the high points in this [action research] was getting principals to understand how their support of an induction program is crucial to teacher retention. And making themselves available or being present during some of these professional learning opportunities so that those teachers see you value what they do…So that was my epiphany.*

New teachers in the district also had not been surveyed in many years and appreciated being asked to give input. Sharon said, *"New teachers really valued people asking for their feedback."*

Benefits to University of the Atlantic (UA)

Though the action research interventions were focused on the district side of the partnership, the study found that UA faculty's involvement in the process also benefited the university. First, the study's focus on induction brought more induction conversations into the UA teacher education programs. For example, when the UA SOE formed an induction working group to develop a five-year plan to support induction teachers, data from the action research was used to inform the proposal. Survey data from the study was also used by university administrators and teacher education faculty to learn more about recent UA graduates' perceptions of their teacher preparation program experiences.

Secondly, university teacher education faculty described how the research also influenced the design of their master's programs for induction teachers and the design of undergraduate and graduate teacher preparation courses. Rachel described the impact on UA teacher preparation programs, saying,

> *I think that the action research process allowed us all to feel like we were responding and influencing both of the systems that we were parts of. And I do think that that work changed all of us who were in teacher education. It impacted how we were working in*

> *our [UA] methods classes, guarantee it. And how we were thinking about what student teaching might be and how we were thinking about what the early experiences needed to be for anybody who was in the induction program.*

Nina described redesigning a summer graduate-level course for UA master's students who had not yet begun their first year of teaching,

> *Now [after being involved in the action research] we're actually thinking about the course as in deliberate supports for them as they think about their new year and before it was like literally nothing. There was no thought to it as a program.*

Finally, as described in findings at the individual level, university faculty involved also built their professional capacity through engaging in the action research process, which benefits the teacher educator profession.

Mutuality

In addition to the benefits for each institution, the action research process also built mutuality among the partners, which strengthened the school-university partnership. Bradbury, et al. (2019) described how action research can facilitate sharing power, saying, "Action research builds in potential for transformative action because of the unusual emphasis on the relational and emotional nature of the learners and a willingness to practice more mutually transformative power" (p. 5). School-university partnerships should consider using action research methodology to address issues of mutual concern, as the process is likely to result in mutual benefit and strengthen partnership collaboration. Rachel described the benefits of using action research in a partnership:

> *This action research team makes so much sense as a mechanism to be doing better things inside of school-university partnerships. It is a critical learning community that has*

shared commitment, shared discourse, and a norm structure to it that has practices and rituals of belonging. It has a cycle that you're following through and has shared trust.

Finding 9: Leaders with boundary-spanning competencies catalyze positive change within school-university partnership contexts.

According to Weerts and Sandmann (2008, 2020), boundary spanning leaders have core competencies that include considering the needs and perspectives of both institutions in a partnership, building trusting relationships, collaborating to solve problems and generating new ideas, effectively communicating internally and externally, negotiating compromise, prioritizing teamwork, being adaptive to changing conditions and open to emergent possibilities, and having an inquiry-oriented mindset. Ernst and Chrobot-Mason (2011) stressed that boundary spanning leaders must work at the margins where groups intersect to promote integration and harness "multi-dimensional expertise at the juncture between groups" (p. 25). They must create the needed linkages to facilitate cross-organizational collaboration and move resources and ideas where they are needed most.

A key finding from this study is that boundary spanning leaders who had the core competencies described above were critically important to catalyzing positive, impactful change. In this study's context, two important boundary spanning leaders were myself as the leader of the action research study and Matthew as the leader of the district's induction program. Data showed that we consistently used boundary spanning competencies to lead the school-university partnership change efforts, and our trusting relationship with one another also influenced the success of our interventions. Both of us valued building relationships and trust before jumping into planning and action. We also respected the diverse perspectives of each person involved and frequently communicated the purpose and vision of the action research process. University

faculty and school district leaders who became involved in designing and leading induction support interventions were also boundary spanners who valued collaborative work.

My Boundary Spanning Leadership

Analysis of my researcher notes throughout the process shows that I used boundary spanning competencies frequently throughout the action research. I consistently focused on building trusting relationships across institutional boundaries, collaborated with others to solve problems, and maintained an inquiry-oriented mindset throughout the research. For example, after my first action research team meeting, I wrote in my research journal, *"I achieved my main goal, which was to build community and trust…I allowed plenty of time for dialogue and opinions so that we can start to learn from each other—the first step in forming a learning community."*

In action research team interviews, several members mentioned that I often considered the perspective of both institutions involved, which had a positive impact on the research. For example, Mary said,

> *What we actually accomplished, it's really incredible. It's very powerful. It's a testament to your leadership. Your ability to navigate different spaces and negotiate with various actors who can be territorial…you're really good at listening to people and bringing ideas out of people and kind of almost like, sort of matching them together, putting them together. And it led to some really innovative work.*

She also added, *"I admire your ability to work between various groups. Not everybody's got that…Institutions have their own goals and helping people kind of get on the same page and work together is often not easy."* Sharon built further on this theme, saying, *"You spearheaded this study by soliciting Matthew's support because you were insightful in recognizing that his*

role was crucial in reconnecting the collaborative efforts between Atlantic County and the university. This partnership was a great catalyst for growth and development of induction teachers."

These comments also reinforced my identity as a community engaged scholar who is committed to working collaboratively with partners to generate new knowledge. Action research scholars who have an engagement orientation toward research and boundary spanning competencies will likely have more success adhering to the democratic principles at the core of action research.

Matthew's Boundary Spanning Leadership

Just as important as my leadership in the research process was Matthew's boundary spanning leadership as the district's induction program director. He strongly supported partnering across institutions and believed that cross-organizational collaboration would result in more impactful program design. Building trusting relationships with everyone involved in the process and consistently communicating the purpose and vision of our collective work were also essential competencies that built investment and momentum. After the NTO, one teacher commented on the survey, *"Matthew did a wonderful job helping build community and helping us feel seen/heard."* Another teacher wrote,

> *I have never ever seen a professional learning of any type get as much praise as people gave it in the chat box today. And honestly—I think it's 100% due to Matthew…he certainly made me feel like I was in the right place at the exact right time—and he did it all digitally. No small feat!*

Action research team members also reinforced Matthew's boundary spanning leadership in their interviews. Kate said, "*Matthew was trying to create a culture of collaboration and collegiality,*

not just in ACSD, but also between UA and ACSD." Elizabeth added, *"Matthew was so involved with the action research team…really listening to what people said and building his work off of the research—that influence was huge on the new teacher systems."* Matthew shared his personal experience with learning across institutional boundaries, saying,

> *[In the action research team] you had these professors who are amazing from the University of the Atlantic and I was able to sit in that space with them and share ideas and provide feedback and also receive feedback. And that helped me build my capacity.*

Mutual Trust

Building mutual trust among the two of us as leaders of the change process was critically important. Matthew and I met weekly to maintain momentum and keep lines of communication open, which increased our trust in each other over time. In my research journal I frequently mentioned how excited I was after our meetings with one another. For example, I wrote:

> *I had another great meeting with Matthew—he is such a great partner to work with and I honestly probably would not be doing my action research without him! In the process of planning a presentation we further strengthened our relationships and even more clearly articulated how our work together is enhancing both sides of our partnership. I appreciate how engaged he is in our meetings and also receptive to feedback and suggestions…*

Ultimately, the combination of our boundary spanning leadership competencies and the trusting relationships we had with each other was critical to the success of the action research process within our school-university partnership context. Our co-leadership catalyzed the productive action of the more than 60 educators who were involved in some way with new teacher support. Though we catalyzed action, implementing induction interventions was carried

about by many other boundary spanning leaders who worked well in the "third space" (NAPDS, 2021, p. 12) where university and district educators collaborated. In particular, the action research team members all had boundary spanning competencies, which were used to effectively lead induction interventions, advocate for the work at both the school district and the university and participate in data collection with partners from both institutions, among many other actions.

Finding 10: Institutional leaders at the highest levels must value school-university partnership collaboration and provide resources for joint initiatives to sustain positive outcomes.

As teacher educators and researchers Dresden and Thompson (2021) found, "For partnerships to be sustainable, partners must collaborate, communicate, and commit to shared goals" (p. 16). Though the partnership's executive committee served as the Project Sponsor for the study, the top leaders in both institutions did not prioritize partnership work or building collaborative, trusting cultures within their organizations. Thus, despite the fact that the action research resulted in positive, impactful programming, it was not sustained. The collaborative cultures that were developed in micro-spaces where the induction work happened were not reflective of the overall cultures of the school district and university involved in the study. Both institutions were hierarchical, bureaucratic, and siloed through departments that typically did not collaborate with one another.

The school-university partnership was also in an uncertain state throughout the research due to leadership turnover at both institutions. The top institutional leaders were unsure about whether to continue to the PDS partnership model and had not developed a clear vision and goals for the partnership due to competing priorities and the overwhelming demands of the Covid-19 pandemic. Structures that had helped to sustain the model when many educators were actively

involved were dismantled. This instability of the partnership at-large significantly stalled the momentum that had built throughout the action research. Top leaders did not recognize the potential of the research to contribute to a new vision for the partnership and did not contribute resources to support the new initiatives.

All action research team members recognized that the institution's top leaders had power over the sustainability of the collaboration and were discouraged by their disregard for the impactful programming and new support structures that had been developed. In every interview at the end of the study, team members shared their frustration. For example, Kate commented on the impact of leaders' power and lack of trust, saying,

> *There's no such thing as a structure that's independent of human beings because the minute you have a human being with power that comes in, if they don't like it…the structures are going to go by the wayside…Structures by themselves are not going to like sustain programs. We had all these structures built for the induction program and then it didn't matter. It's a flawed way of thinking… that structures will support sustaining things.*

Ann also commented on the leaders' lack of value for the work and missed opportunities for the partnership, saying,

> *The low point was seeing the kind of implosion at the leadership level—frankly at both institutions. The work was so promising and now there's just this huge question mark. And what, what if anything will survive? And that really speaks to the institutions, not to the work of the group itself. They [the top leaders] didn't value it and they didn't pay attention to it...It's the value piece. They didn't make it part of what they do. You know, this was an opportunity for…us at the institutional level to learn how to work together so*

that a research partnership becomes how we work. This is not just a project but…a stepping stone to really doing some rich work in the future, but…they didn't see the possibility.

Additionally, the Covid-19 pandemic had a significant effect on both systems. Partnership leaders had to respond to an unprecedented crisis. Developing a new partnership vision was put on the back burner, and partnership ties weakened as other demands took priority. The state also cut the university's budget, which limited funds that could be used to support faculty who wanted to engage in partnership work. By the end of the study, both boundary spanning leaders, myself and Matthew, had left our institutions due in part to lack of support from our institutional leaders.

Finally, it should be acknowledged that sustaining change is difficult in most bureaucratic organizations. Institutional inertia is a powerful force that works against innovation, and systemic change often takes many years to achieve.

Conclusions

The study's 10 findings were analyzed to draw broader conclusions, which are actionable knowledge for researchers and practitioners in similar contexts. This section of the chapter includes three conclusions, which include a) prioritizing social network theory-informed approaches in complex adaptive systems, such as P-12 school districts, b) the essential role that school-university partnerships have to play in responding to complex problems in P-12 education systems, and c) the significance of collaborative research methodologies for addressing challenges in P-12 education systems. These conclusions answer the study's overarching research question: *What is learned at individual, group, and system levels that advances theory*

and practice in the induction phase of teacher development in a school-university partnership context?

Conclusion 1: Social network theory should guide P-12 education systems design to accelerate educators' learning and build their capacity to navigate complex systems.

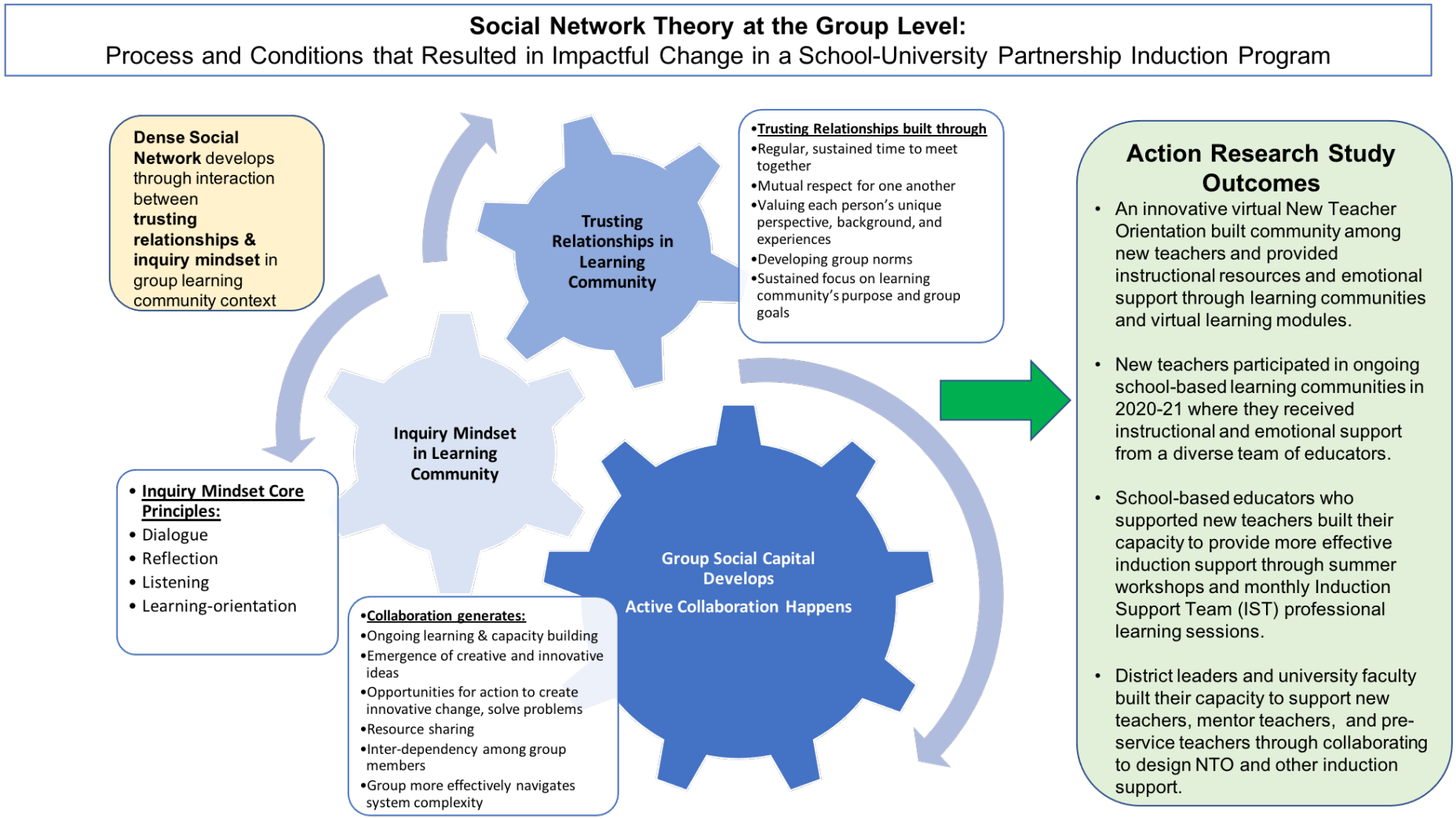
Collaboration that results from human connection, or "networked interactions," must be placed at the forefront of organizational design, especially in human-centered educational systems, such as P-12 school districts. As shown in this study, social network theory-informed approaches can have a positive impact on teachers' learning and growth and build their capacity to navigate systemic complexity. As discussed in-depth in Chapter 1, multiple studies using social network theory found that the more connected teachers were to one another, the higher their job satisfaction and self-efficacy. Bryk, et al.'s (2015) Networked Learning Communities (NIC) are excellent examples of how broad educator networks can also more effectively accelerate school improvement. As Bryk, et al. (2015) said, "today's problems cannot be solved through isolated individual actions. Each participant [in a NIC] holds expertise that is valuable in solving a given problem, but each also recognizes that he or she must join together with other to solve it" (p. 17).

This research makes an important contribution to how social network theory at the group level can accelerate learning and build educators' capacity to make positive systems-level change, as illustrated in Figure 17. As the left side of the graphic shows, the ongoing interaction between trusting relationships and inquiry mindsets (represented by two light blue cogs) within learning communities built dense social networks. Over time, these communities developed social capital that facilitated active collaboration (represented by dark blue cog). Active collaboration among the learning communities generated ongoing learning, resource sharing,

inter-dependency among group members, the emergence of innovative ideas to solve problems, and increased capacity to navigate system complexity. Ultimately, the active group collaboration resulted in positive outcomes for new teachers and the educators who supported them, as shown on the far right side of the graphic and discussed in Finding 8.

Figure 17

Social Network Theory at the Group Level: Process and Conditions that Resulted in Impactful Change



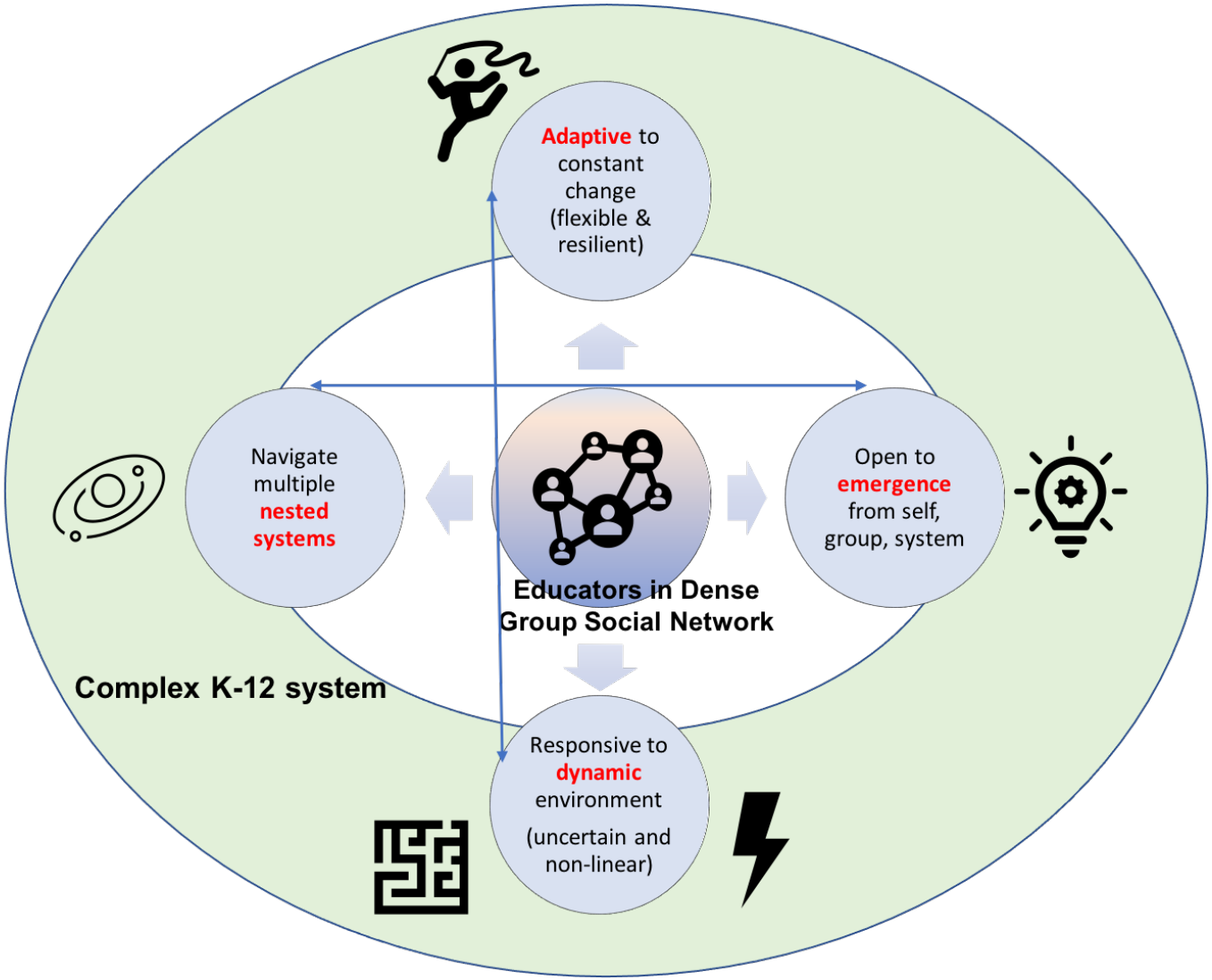
While this study contributed to social network theory research at the group level, it also found a powerful interaction between social network theory and complex adaptive systems theory in P-12 systems. Educators in dense group social networks built social capital that enabled them to more effectively navigate the P-12 district, a complex adaptive system, as shown in Figure 18. The center of the diagram shows how dense social networks can help groups of educators to be more adaptive, responsive to dynamic environments, navigate nested systems, and be open to emergence. Adaptivity is necessary for responding to dynamic, uncertain environments, so these concepts are closely related, as indicated by the bi-directional arrow between these two competencies. Likewise, when groups effectively navigate nested systems, including understanding how one system affects another, emergence is more likely to occur, as illustrated by the bi-directional arrow between these two competencies.

Figure 18

Key Theoretical Variables Interacting

Interaction between social network theory and complex adaptive systems theory in K-12 school systems:

Educators in dense group social networks build social capital that enables them to more effectively navigate complex adaptive systems, such as school districts and universities



As school districts and partnerships reinvent and redesign educational systems post-pandemic, leaders should design systems that prioritize collaboration and develop dense social networks at all levels. Teachers should have ongoing opportunities to collaborate with each other to design lessons and curricula, solve instructional problems, and grow as teacher leaders. All educators' professional learning should include on-going relationship-centered learning communities focused on increasing student learning. When teachers value community and collaboration with one another they are also more likely to build relationships with their students and create community in their classrooms that encourages students' engagement with their learning and one another. Though this systems redesign may not be a panacea to our education system's many problems, group collaboration builds educators' sense of agency, commitment to and investment in their school community, and capacity to navigate systemic complexity. These competencies ultimately contribute to improving and enhancing teachers' instruction, which benefits students' learning.

Conclusion 2: School-university partnerships should be leveraged to respond to the complex challenges P-12 school systems face.

In a recent study on the impact of Covid-19 on teacher education, Van Nuland, et al. (2020) found "there has never been a time when initial teacher education programs and their various partners in elementary and secondary school (P-12) systems and universities have had to function amidst such uncertainty" (p. 449). The pandemic further exacerbated problems in an already struggling U.S. educational system with no easy solutions. As described in Chapter 1, school districts are complex adaptive systems (CAS) that include many inter-related nested systems that impact one another. Thus, teaching is an increasingly complex profession in a dynamic, every-changing environment that requires constant adaptivity. Under such challenging

circumstances, school-university partnerships are an imperative now more than ever. School systems do not exist in isolation—they are inextricably linked to university teacher preparation programs, and a large body of research shows that both institutions benefit from working together to better meet the needs of educators and students in the 21st century. Partnerships bring multiple perspectives to the table and create joint ownership for tackling complex challenges and redesigning and transforming educational systems.

This study found that within the CAS of the school district, school-university partnerships are also complex inter-organizational systems that may or may not function effectively within the school district CAS. Each school and university have differing cultures, needs and priorities, and leadership styles that must be openly addressed. However, with focused attention on cross-institutional relationship building and a commitment to a common goal, this research showed that partnerships can become "third spaces" (NAPDS, 2021, p. 12) where interactions among educators are rich and exciting. Working in these collaborative spaces can help educators carefully examine issues and catalyze change. Within these third spaces, school-university partnership educators can also develop their competencies to become adaptive leaders. For example, they could study Heifetz and Linsky's (2017) six dimensions of adaptive leadership to build the partnership's capacity to more effectively address complex problems together.

Another way that partnerships can tackle complex challenges and develop innovative solutions is through collaborative research—this study is a clear example. By engaging in action research or another collaboration-oriented methodology, research groups that include both school and university educators bring diverse experiences, expertise, and skillsets to complex problems. In particular, collaborative partnership research can help address the multi-faceted issues related

to the crisis in the teaching profession, including recruitment, induction (as in this study) and long-term retention, including developing teacher leaders.

Recently, Strom and Viesca (2021) encouraged education researchers to incorporate complexity theories into their research. They argued that a complexity perspective is an "ethical imperative" (Strom & Viesca, 2021, p. 1) that can help educators understand how systems are working to facilitate or inhibit effective practices. This research also found that complexity theory can benefit research in school-university partnerships. Complexity theory helped partners understand that effective change processes are non-linear and require flexibility and open-ness to emergence. For example, the learning communities in the study gained a collective understanding of the multiple nested systems that impacted new teacher job satisfaction, which helped them to design more adaptive, innovative interventions to support new teachers within an uncertain and ever-changing environment.

Both school district and university leaders must recognize that school-university partnerships have an important role to play in responding effectively to 21st century challenges in education. With a commitment to building trusting relationships and developing a clear purpose and vision, partnerships can be leveraged to transform school and university systems. Nina summarized this well in a written reflection:

> *Some conclusions that I draw from this work is that we can and should be working across institutional lines now, more than ever…The action research team might be able to… bolster other ways of accessing expertise in either institution to contribute to renewal and regeneration of our profession and the learning experiences of P-20 [Pre-Kindergarten through college senior] students.*

Conclusion 3: To address complex problems in P-12 education systems, researchers should use collaborative methodologies, such as action research, that prioritize human relationships and multiple data collection methods.

Reason and Bradbury (2006) defined action research as seeking "to bring together action and reflection, theory and practice, in participation with others, in pursuit of practical solutions to issues of pressing concern to people and more generally the flourishing of individual persons and their communities" (p. 1). Central to the quality of this methodology are human relationships— "good knowing rests on collaborative relationships" (Reason & Bradbury, 2006, p. xxiii), they argued. As demonstrated throughout this research, human collaboration was central to the success of both the action research process and the study's impact and outcomes. This study provides an example of action research as dynamic, collaborative learning process that grew individual and group capacity, which contributed to positive systemic change.

Reason and Bradbury (2006) also acknowledged resistance to action research from traditional academic researchers, yet they advocate that this methodology has growing importance to address society's major 21st century challenges, such as climate change. They argued that "faced with complex systemic issues" (Reason & Bradbury, 2006, p. xxx), positivistic research has limitations to creating knowledge that we desperately need. "We find our universities continuing to increase the fragmentation of knowledge by rewarding specialization unmediated by a concern for 'the whole.'…at a time when 'seeing the whole' and acting appropriately in light of the insights is so important," (Reason & Bradbury, 2006, p. xxx) they wrote. It is precisely "seeing the whole," including dedicating significant time and effort to understanding the complexity of new teachers' challenges, that generated the positive change in this study, as described in detail in Chapter 3.

Perhaps the most important strategy that researchers have for "seeing the whole" is multiple data collection methods among a variety of research participants. The learning communities involved in this study engaged in ongoing collaborative inquiry to fully understand the issues from multiple stakeholder perspectives (new teachers, mentors, university teacher education faculty, etc.) through multiple methods, such as surveys, focus groups, and observations. Without this combination of collaborative inquiry and robust data collection and analysis, the interventions and support that resulted from this study would not have been nearly as impactful.

Though this study was a "single case," that occurred in one school-university partnership context, it has many broader implications and enhances a larger body of empirical action research studies that offer hope and strategies for tackling complex problems. I agree with Gustavsen, as cited in Bradbury and Reason (2006), that action research needs to move beyond single cases and instead create "a series of events interconnected in a broader stream—which we can see as…social capital" (p. xxvi). Studies like this one should be formally linked with similar studies to create a large body of evidence for educators to use to advocate for reimaging and transforming educational systems.

Implications for Future Research, Theory Development, and Practice

This study makes an important contribution to several different areas of research, including action research studies, school-university partnership research, induction support research, and social network theory and complexity theory research in P-12 education settings. The study also contributes findings that benefit educator practitioners who lead school-university partnerships, P-12 school systems, and induction programs. The implications for research and theory section includes four recommendations for future research and theory development based on the

conclusions from the study and supported by empirical studies. The implications for practice section includes four recommendations for practitioners and leaders of change based on the conclusions from the study, which are also supported by empirical literature. These recommendations are summarized in Table 28 below.

Table 28

Study's Recommendations

Implications for Theory and Research	Implications for Practice
The Relationship Between Social Network Theory and Complexity Theory Should Be Studied in Educational Systems	Education Systems Should Use Collaborative Learning Communities to Catalyze Individual, Group, and Systems-Level Learning and Change
More Research is Needed on How School-University Partnerships Benefit Induction Programs	School-University Partnerships Must Prioritize Induction Support to Strengthen the Teaching Profession
P-12 School Systems and School-University Partnerships Would Benefit from Action Research that Address Challenges at the Systems Level	The Action Research Methodology Should be Leveraged to Address Complex Problems in P-12 School Systems and School-University Partnerships
Within School-University Partnerships, the Connection Between Collaborative Leadership and Sustainability Requires Further Research	School-University Partnership Leaders Must Develop Boundary Spanning Competencies to Sustain Impactful Programs

Implications for Research and Theory

Recommendation 1: The Relationship Between Social Network Theory and Complexity Theory Should Be Studied in Educational Systems

This study contributes to research related to the interaction of social network theory and complex adaptive systems theory, as illustrated in Figure 18. This study builds on Uhl-Bien and Arena's (2017) research related to organizational adaptability, which found that organizations that foster networked interactions have "collaboration capability" (p. 95) that supports and

sustains the innovation process. Complex systems are also more adaptable to change as result of the collaborative structures (Uhl-Bien & Arena, 2017).

In the field of induction research over the last five years, an increasing number increasing number of education researchers have used social network theory to study new teacher support. Similar to the findings in this study, several recent studies (described in Chapter 1) found that induction teachers do better when they build social networks that provide them with both instructional and emotional support. However, the interaction of social network and complexity theories is in the early stages of exploration. Two studies using social network theory in P-12 schools found that teachers' social capital is associated with innovation and navigating challenges associated with system complexity. Moolenaar and Sleegers (2010) found that teachers in dense school teams perceived their school climate as more innovative. Within social networks, educators also developed trust that was associated with taking more risks to improve the school (Moolenaar & Sleegers, 2010). Fox and Wilson (2015) found that social capital new teachers developed helped them cope with complex challenges they faced as new teachers. Though these studies are promising, P-12 and higher education leaders would benefit from further research on the linkages between these theories.

Researchers also need to consider using social network theory and complexity theory in school-university partnership contexts. Breault's (2012) meta-synthesis of PDS research showed that school and university stakeholders "need to use…their social capital to form strong ties with one another. Stronger ties within PDSs will increase the potential for greater trust, stronger commitment, and more productive and meaningful outcomes" (p. 96). In a promising study that applied social network theory in a school-university partnership context, Cornelissen, et al. (2017) found that research-engaged networks between university faculty and teachers in a

secondary school in the UK significantly increased collegial interaction. The teachers who built social capital in networks engaged in research activities that influenced their educational beliefs and teaching practices. School-university partnership leaders could benefit from more research using social network theory and complexity theory to inform partnership design, structures, and activities.

Recommendation 2: More Research is Needed on How School-University Partnerships Benefit Induction Programs

This study contributes to school-university partnership literature that shows new teacher induction programs benefit from partnership collaboration. As discussed in Chapter 1, thirteen empirical studies related to induction support in school-university partnership found benefits from university involvement in different areas, such as strengthening mentoring, retaining new teachers, and improving novice teachers' self-efficacy. Surprisingly, since Hunt (2014) conducted her literature review on induction support in school-university partnerships in 2014, very few empirical studies on this topic have been published in peer reviewed journals. This study makes a significant contribution to the literature, but much more research is needed, especially as university teacher preparation programs are increasingly called on to play an active role in supporting novice teachers.

Partnership leaders need more research-based induction models and programs they can adapt to their contexts. Research could also provide evidence that leaders need to advocate for more institutional resources for induction support, such dedicated time for university faculty members to engage with school district induction programs. As more teachers leave the profession due to the stress and burnout Covid-19 has caused, it is imperative that induction

support be given increased attention and resources to ensure new teachers feel supported and remain in the profession.

This study also showed how school-university partnerships can leverage action research to improve induction support. No other researchers have published studies that use action research methodology to improve induction at the system level within partnerships; however, two classroom-level action research studies conducted within partnerships (Stanulis & Ames, 2009; Davis & Higdon, 2005) found that action research can assist novice teachers in systematically improving their practice, as well as build mentors' capacity to support new teachers. Gilles, et al. (2010) also found that an elementary school's professional community was deepened through the interaction new teachers and mentors had about action research they conducted in their individual classrooms. Thus, partnerships can also play a role in improving induction support through action research studies at multiple levels of P-12 systems.

Recommendation 3: P-12 School Systems and School-University Partnerships Would Benefit from Action Research that Address Challenges at the Systems Level

In P-12 settings, action research is commonly used by individual teachers at the classroom level to improve instruction and student learning outcomes. Though action research is a powerful tool for teachers' learning, this study demonstrated the potential of action research to address a pressing problem and generate organizational change in a P-12 system. Manfra (2021) advocated for educators to conduct action research at the system level, saying "much can be gained from action research projects that span multiple layers of the educational system" (p. 28).

Within school-university partnerships, action research is a particularly good fit for systems-level research because partnerships often include a similar focus on collaborative

inquiry. Within PDS partnerships in particular, one of the "nine essentials" of this type of partnership (Essential #5) states, "A PDS is a community that engages in collaborative research and participates in the public sharing or results in a variety of outlets" (NAPDS, 2021, p. 15). Further, PDS research collaborations are "guided by a culture of inquiry and continuous improvement" (NAPDS, 2021, p. 15) and seek to "simultaneously renew schools/school districts and universities/colleges of education" (p. 15).

Very few studies have been published related to systems-level action research in school-university partnerships. However, Kirschner, et al.'s (2009) research provides an excellent example of how action research can be used for systems change in a PDS partnership. A team of university faculty and school district educators used action research to successfully restructure a teacher preparation program and subsequently used the methodology for many years to support their collaborative work. Though challenging and time-consuming, the co-researchers found that collaborative action research "furthered our goals to enhance the quality of schooling through research and development and the preparation of career professionals in teaching" (Kirschner, et al., 2009, p. 212). In a review of action research studies in PDS partnerships, Tunks (2011) stressed the importance using action research to "transform collaborations" (p. 478):

> It is imperative for deans of colleges of education …to support and promote this form [action research] of research if change in education in schools and colleges of education is going to come about in a meaningful way. This will require the restructuring of instructional time to allow university personnel to build relationships and trust with school personnel so that teachers are willing to pose and implement action research projects in partnership with interns, university personnel, or teacher research teams in

> schools…the continuation of action research in the PDS is vital to the continuation of the field. (p. 478)

Research Practice Partnerships (RPP) are another common model of school-university partnerships that bridge the divide between researchers and education practitioners through long-term collaborations that focus on researching problems of practice and developing solutions for improving school district outcomes (Coburn & Penuel, 2016). The results of this study suggest that action research should also be considered as useful methodology for structuring and conducting systems-level research within RPP contexts.

More research is needed on how to effectively use action research to tackle problems and create transformative organizational change at P-12 system levels and within school-university partnership contexts. Action researchers who are already engaged in P-12 settings should be encouraged to form learning communities and regional or national professional networks to share research successes and challenges and to advocate for using the action research methodology at multiple levels to reinvent outmoded systems that are not effectively serving the learning needs of today's educators and students.

Recommendation 4: Within School-University Partnerships, the Connection Between Collaborative Leadership and Sustainability Requires Further Research

As this study found, leaders at all levels of school-university partnerships must value collaborative engagement for change efforts to be sustainable. Boundary spanning leader competencies, such as building trusting relationships, negotiating compromise, prioritizing teamwork, and having an inquiry-oriented mindset, facilitate productive partnership work. University leaders could benefit from using Weerts and Sandmann's (2010) research-based model (p. 651) showing the multiple boundary spanning roles needed at public research

universities to engage effectively with community partners. They found that boundary spanning is not just the work of individuals, but broader institutional engagement strategies must include principles such as community-based problem solving and building capacity for engagement work. These researchers also stressed that "institutional leaders must recognize that building relationships with community partners is complex" (Weerts & Sandmann, 2010, p. 651).

Within the context of PDS partnerships, several studies related to boundary spanning roles further reinforced that educators in a variety of positions within partnerships, including principals, teachers, university faculty, and doctoral students, need to value collaboration for partnership work to succeed. In a meta-analysis of empirical studies related to boundary spanning in PDS contexts, Burns and Baker (2016) found that "collaboration and community was an integral component of boundary spanners' roles and responsibilities" (p. 34). They also found that these roles are "highly complex and challenging," (p. 35) especially related to building community.

In Smedley's (2010) literature review of impediments to school-university partnerships, she cited many studies that found a prerequisite for partnerships is mutual respect among partners, as well as trust and a sense of being valued. Studies she reviewed also confirmed the importance of ongoing dialogue and collaborative goal setting (Smedley, 2010). My study provides an example of this—while the induction collaboration was impactful, the work was not sustained in large part due to the lack of ongoing dialogue and mutual goal setting among the partnership's top leaders.

When leaders at all levels of a school-university partnership value collaboration, positive organizational is more likely to be sustained. As Fisher and Many (2014) found in their study, skillful boundary spanning leaders can have a profound impact when they

"negotiate relationships, support inquiry, develop collaborative processes for reflection, and re-imagine the partnership between the too often disparate worlds of the university and the public school in ways that shape the pedagogy, disposition, and practices of teachers and students" (p. 61).

However, more research is needed on the connection between collaborative leadership and the sustainability of partnerships and partnership programs. This should include research on how partnership leaders build their capacity for effective boundary spanning. Studies that examine the conditions under which school-university partnerships sustain impactful programming are also needed.

Implications for Practice

Recommendation 1: Education Systems Should Use Collaborative Learning Communities to Catalyze Individual, Group, and Systems-Level Learning and Change

Within the three learning communities that designed induction support programming, this research found that educators built group social capital that enhanced their professional capacity, helped them navigate complexity, and resulted in impactful programming, as shown in Figure 17. The learning communities in this study were not officially called Professional Learning Communities (PLC), but they were structured much like typical PLCs in P-12 settings, which are focused on collaborative inquiry to improve practice among small groups of educators (Vescio, et al., 2008). Promising research on PLCs in schools shows how these communities can facilitate individual and group learning and organizational change. For example, Tam (2015) found that all the teachers who participated in a PLC for three years shifted their beliefs related to the curriculum, teaching, learning, roles of teachers, and learning to teach. In a study of school-wide PLCs, Thompson, et al. (2004) found that after two years, all teachers and principals believed

their schools were learning organizations and data showed that the PLCs had a positive effect on student learning.

Related to the virtual nature of the learning communities in this study, research also shows that online PLCs and social networks are having positive effects on teacher learning. Lieberman and Pointer Mace (2010) found that participating in online learning communities can lead to positive outcomes, such as "transformation of practices, philosophies, instructional time, and collegial interactions" (p. 80) among teachers. Baker-Doyle and Yoon (2010) found that teachers who engaged in online collaboration using a social network software platform actively shared expertise and sought advice and support from one another across schools in the same urban school district.

School-university partnerships should also consider using collaborative learning communities to further educators' growth and development and generate innovative programming. In a three-year study of PLCs within a school-university partnership network, Hoffman, et al. (2009) found that PLCs "served as a catalyst for synthesizing best-practice research, contextualizing complex issues, and developing strategies for proactive change" (p. 42). Partnership PLCs can be structured many different ways for cross-institutional dialogue, including university teacher education faculty and teacher PLCs, pre-service teacher and teacher PLCs, or PLCs that include variety of educators from different levels of the system (i.e. instructional coaches, directors of professional learning, and university teacher education faculty). Online PLCs could be particularly useful for to district and university partners who are more geographically separated.

Induction Support Through Professional Learning Communities. A growing number of studies also show that PLCs embedded within induction programs can have a positive effect

on new teacher development. According to Fresko and Nasser-Abu Alhija (2015), research on induction teacher PLCs shows that these communities can enhance new teachers' knowledge base, contribute to their feeling of self-efficacy, and "lead to their empowerment" (p. 38). Lovett and Cameron (2011) found PLCs that create a sense of community through collaborative discourse can help new teachers to build important relationships with colleagues. The collegiality of the communities gives teachers the opportunity to discuss teaching and learning practices "within a community of learners in a manner that allows the development of pedagogical expertise" (Lovett & Cameron, 2011, p. 91).

One of the key recommendations from this study's action research team was that induction programs should include school-based new teacher communities of practice that are co-facilitated by a university faculty member and a school leader. In other studies, induction teacher learning communities supported by school-university partnerships were also shown to benefit new teachers. Hartman, et al. (2016) found that new teachers who engaged in monthly professional learning seminars led by university educators significantly improved their self-efficacy and built resiliency over the course of a year. Chubbuck, et al. (2001) also found that a university-led support program provided a safe space for new teachers to learn from each other without pressure of school district evaluation.

Partnerships should consider incorporating cross-institutional PLCs into induction programming to support ongoing growth and learning and help new teachers and mentors navigate the challenges and complexities of teaching. School leaders should also give new teachers multiple opportunities to collaborate with colleagues through professional learning, observing other teachers, co-teaching lessons, etc.

Recommendation 2: School-University Partnerships Must Prioritize Induction Support to Strengthen the Teaching Profession

This study found that a school-university partnership made a positive impact on induction support programming. Partnership leaders at the highest levels need to continue to prioritize collaborative induction support and must be willing to dedicate resources to induction programming to retain and grow teachers and invest in the future of the profession. Based on their experiences in this study, the action research team recommended that within a school-university partnership structure at least one university educator and one school district educator have significant time in their workload to devote to induction programming. These personnel need to have ongoing trust and support of institutional leaders and must have financial resources for induction work, including funds to buy out faculty members' time to support induction programs.

This study's findings also reinforced the importance of building professional capacity among the educators, especially mentor teachers, who support new teachers. Working collaboratively, school district administrators and university faculty played an important role in developing and implementing professional learning that built mentoring and facilitation skills among teacher leaders. Similarly, Evertson and Smith (2000) found that mentoring workshops led by university faculty had a positive impact on developing mentors' knowledge and skills. Induction teachers who had mentors who participated in the university's mentoring program were more effective at managing instruction and establishing routines at the beginning of the year than induction teachers whose mentors had not participated in professional learning (Evertson & Smith, 2000).

This study's action research team also recommended that university faculty should be involved in developing and implementing content-based professional learning for induction teachers together with district partners. Multiple surveys conducted in this research confirmed that new teachers want more subject-specific pedagogical content knowledge, and university teacher education faculty have much to contribute in this area of teacher learning. This recommendation is supported by Luft, et al.'s (2003) finding that teachers who participated in university-led science-focused induction support program taught more inquiry science lessons, including more laboratory lessons, than new teachers who were in general induction programs or had no formal support.

This study also that found new teachers are interested in continuing professional learning related to equity and diversity issues. The school-university partnership collaboration played a key role in developing equity-centered professional learning for induction teachers, and partners agreed that equity issues must be addressed throughout all areas of professional learning, including instructional strategies, classroom management, content-centered learning, etc. Universities need to partner with schools related to equity issues not only to address new teachers' needs but also to help teacher preparation programs prioritize equity issues in schools.

As discussed in Chapter 1, Feiman-Nemser (2001) emphasized that learning to teach should be seen as a continuum that beings in pre-service preparation programs and then extends into the first few years of teaching. Universities need to play a role in this continuum of support so that teachers have all the support they need to begin careers successfully so that they will stay and thrive in the teaching profession.

Recommendation 3: The Action Research Methodology Should be Leveraged to Address Complex Problems in P-12 School Systems and School-University Partnerships

Research Recommendation 3 argued that action research should be used at the systems level to address challenges. This related recommendation for practitioners emphasizes that the action research methodology is accessible to practitioners and stakeholders at all levels and is not exclusive to traditional university-based researchers. Thus, school district leaders should consider using action research to address complex, pressing issues that impact students' learning, including problems exacerbated by the Covid-19 pandemic. The methodology could be used to engage parents more actively in their children's learning, help teachers use technology effectively to support project-based and student-centered learning, and design programs that support teachers' mental health and well-being. To do this effectively, diverse stakeholders should be included on action research teams and implementation teams, including community members, teachers, staff, and students. Manfra (2012) also encouraged community members and students to be included in action research to help bring about school change. By working participatively with all stakeholders, educators can use action research to develop "mutually transforming power" (Bradbury, et al., 2019, p. 9).

Within the context of school-university partnerships, Catelli (2011) urged educators to think more broadly about using action research to "inform, change, and improve the interlocking or interrelated aspects of the partnership" (p. 494). She suggested that the methodology could even be used across partner schools in a district or across partnerships in regions of a state or states (p. 494). School-university partnerships that already use professional learning communities for collaborative learning are especially well-positioned to incorporate the action research methodology to solve problems together. According to Manfra (2012), "Since inquiry and

change are both hallmarks of PLCs…it is likely that members of well-functioning groups will be able to pick up the research cycle and use it to more systematically study issues of importance" (p. 25). PLCs could also be organized around the action research structure (Manfra, 2012).

Related to induction support, the action research processes and structures used in this study's context could be replicated in other school-university partnerships to address induction teachers' needs. A central theme is that building novice teachers' social capital is critical to their professional growth and well-being. Education leaders should be urged to use collaborative, community-centered approaches when planning and implementing induction support activities with the goal of "collective thriving" (Bradbury, et al., 2019, p. 9) for all educators.

In this study a university partner brought the action research methodology to the school-university partnership context. University faculty who use action research should offer professional learning to school and district leaders to share the action research methodology, including the benefits of using it to create change. For principals who are interested in school-wide change, it could be particularly powerful if used simultaneously at the classroom and school-levels to address a common issue, such as students' motivation to learn.

Recommendation 4: School-University Partnership Leaders Must Develop Boundary Spanning Competencies to Sustain Impactful Programs

Given this study's findings related to the importance of boundary spanning leadership, school districts and universities should prioritize developing relational skills among leaders at all levels. Kamler, et al.'s (2009) study on leadership in school-university partnerships supports this, as they found that collaboration skills are necessary for these partnerships to flourish. In addition, a metasynthesis of educational leadership studies found that relationship development is critical

to 21st century leaders, including "communication, collaboration, flexibility, shared leadership, affirmation, and support" (Kamler, et al., 2009, pp. 111-112).

PDS research studies (Breault, 2012; Smedley, 2010) also show that partnership leadership teams must dedicate time to building trusting relationships with one another and develop common vision and shared values for partnership work to be impactful and sustainable. Breault (2012) also found that "shared empathy, or social intelligence, is an important first step for sustained PDS partnerships" (p. 96). Leaders must also design partnership structures that promote ongoing dialogue and continuous improvement to maintain momentum and assess the impact of joint initiatives. Based on Walker's (1999) experience leading a complex PDS collaborative, he found that many leaders of school-university partnerships aren't familiar with organizational development and lack skills needed for collaboration. This includes knowing how to facilitate meetings, build trust, and "engage in dialogue and practice advocacy and inquiry" (Walker, 1999, p. 303). He suggested partnership leaders need to build new capacities, including the ability to deal with conflict.

Clearly, partnership leaders would benefit from professional learning to develop their boundary spanning skills. One recommendation from Weerts and Sandmann's (2008) research is that universities develop "engagement academies" (p. 99) that train and socialize university faculty and administrators to develop boundary spanning competencies necessary for effective collaboration with external partners. Guided by findings from this study, professional learning for university and school district leaders should include strategies for developing trusting relationships and ideas for modeling and cultivating inquiry mindsets among educators, including effective dialogue, listening, and reflection. Equipped with these competencies, leaders are more likely to support and sustain impactful programs.

Limitations

Similar to other action research studies, this study has several limitations that are important to address. One limitation was that this study was conducted in a single school-university partnership context involving a large public university and mid-sized public school district that had a well-established partnership. More induction-centered research is needed in different types of school-university partnership contexts that have varying levels of longevity and partnership structures.

Another limitation of the study is that I had extensive work experience in the research context prior to conducting the study. I was an experienced boundary-spanning leader who had built many relationships in the school district and university that facilitated the process and contributed to recruiting and sustaining a highly effective action research team. Doctoral student researchers may not have this advantage when entering into their research context; thus, the relational facets of the action research process may be more challenging and time-consuming and more support from university faculty may be needed.

Though social network theory guided this study, quantitative data collection using social network research software, such as UNICET, was not used to measure the density of social networks. This study would have been strengthened if teachers' social networks could have been systematically mapped in order to examine the social ties that made the biggest impact on teachers' job satisfaction and self-efficacy. In addition, ACSD teacher retention was difficult to obtain at the end of this study, so I was not able to use retention as an indicator the study's impact.

Finally, much of this research occurred in the context of the Covid-19 pandemic. The pandemic's impact on the study's process and findings was not specifically studied, and under "normal" circumstances, the study would likely have evolved very differently.

Final Reflection

As I was completing this dissertation, Brené Brown published her latest book *Atlas of the Heart* (2021), which concluded with her new grounded theory on cultivating meaningful connection. One of the three core elements for cultivating meaningful connections included "the courage to walk alongside" (Brown, 2021, p. 261). She described this as being other-focused and "using language in the service of connecting, practicing compassion, empathy, and non-judgement" (p. 262). This new theoretical framework deepened my understanding of why the human connection theme was so prevalent throughout this research process and why the research mattered. New teachers need colleagues, administrators, and university faculty to "walk alongside them" and when these educators do so, social networks begin growing, and each teacher's knowledge, confidence, and resilience increases through these human relationships. Trusting and respectful human relationships are the foundation for educators' learning and growth at the individual, group, and systems levels.

I believe this study reinforces how human relationships have the power to either make or break teachers' careers, school-university partnerships, and action research studies. Our educational systems are broken and no longer serve educators or students, so we must reimagine them with human relationships at the center. For those of us deeply engaged with schools, partnerships, and/or education research, it behooves us to prioritize cultivating meaningful human connections throughout all facets of our work and systems design. I dream of a future where educators and students around the world share compassion, support, and knowledge

among each other through a vast, glowing network of connected energy. Bryk, et al.'s (2015) Networked Learning Communities, Scharmer's (2018) global learning "hubs" facilitated by the Presencing Institute (https://www.presencing.org/), and Bradbury's (Bradbury, et al. 2019) Action Research for Transformation (ART) online learning community (https://actionresearchplus.com) are inspiring models that guide the path toward my inter-connected vision.

Leading this study has been a powerful learning experience that will serve me far beyond earning a doctoral degree. My knowledge and experiences related to human relationships, leadership, theory, partnerships, action research, and induction have become integrated into my core identity. I am now a scholar-practitioner change agent who is ready for my next challenge. I hope to conduct additional action research studies in P-12 education systems to "walk alongside" educators as they redesign more relational and learning-oriented organizations. Wherever I land, I plan to answer Bradbury, et al.'s (2019) call to "yoke our efforts to a commitment to inquiry that makes a positive difference…Let us practice mutually transforming power in service of a more beautiful world" (p. 9).

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APPENDICIES

Appendix A

ACSD New Teacher Survey-July 2019

The Atlantic County School District and the University of the Atlantic are partnering to improve ACSD induction programming. The purpose of this survey is to receive feedback from teachers who are new to ACSD in 2019-20. Topics include New Teacher Orientation, new teacher support, and teacher preparation programs.

This confidential survey should take no more than 10 minutes to complete.

Research Consent
I understand that by taking this survey, I am giving permission for my feedback to be used for UA and ACSD research purposes.

This research is voluntary and your permission to participate or not participate will not affect your employment. Any questions about the research can be directed to Erica Gilbertson, doctoral student researcher in the UA School of Education [email withheld for confidentiality reasons].

If you have specific questions about your rights as a research participant in research approved by the UA Internal Review Board (IRB), please see [website address withheld for confidentiality reasons].

- ○ Yes
- ○ No

Background Information

Do you have additional teaching experience in other districts?

- ○ Yes (If yes, how many years?)

_____

- ○ No

Name of the school you where you will teach this year (2019-20):

(School names were omitted in this appendix for confidentiality reasons)

What grade(s) will you teach this year? Check all that apply:

- [ ] Pre-K
- [ ] Kindergarten
- [ ] 1st Grade
- [ ] 2nd Grade
- [ ] 3rd Grade
- [ ] 4th Grade
- [ ] 5th Grade
- [ ] 6th Grade
- [ ] 7th Grade
- [ ] 8th Grade
- [ ] 9th Grade
- [ ] 10th Grade
- [ ] 11th Grade
- [ ] 12th Grade

If you will teach at the secondary level, what subject(s) will you teach?

- ☐ Math
- ☐ Science
- ☐ English/Language Arts
- ☐ Social Studies
- ☐ Foreign Language
- ☐ Special Education
- ☐ Agriculture/Family and Consumer Sciences
- ☐ Physical Education
- ☐ Music
- ☐ Art
- ☐ Theater
- ☐ Other/Electives (please list here)

_____

Where did you receive your teaching preparation/degree? Check all that apply:

(university names were omitted in this appendix for confidentiality reasons)

I identify as:

- ○ Male
- ○ Female
- ○ Other _____

New Teacher Orientation

The new teacher orientation provided me with tools that will assist me in creating systems/procedures in my classroom during my first year.

- ○ Yes _____
- ○ No _____

The new teacher orientation gave me a clear understanding of the district's goals and priorities.

- ○ Yes _____
- ○ No _____

The new teacher orientation helped me to learn more about the student population I would be teaching.

- ○ Yes _____
- ○ No _____

The new teacher orientation helped me make connections with other new teachers.

- ○ Yes _____
- ○ No _____

Page Break

Classroom Confidence

Please rate your level of confidence for each of the following as you prepare to begin teaching in ACSD.

	Very confident	Somewhat confident	Confident	Not very confident	Not confident at all
My ability as a teacher.	○	○	○	○	○
My ability to inspire and engage all students in learning.	○	○	○	○	○
My ability to build positive relationships with my students.	○	○	○	○	○
My depth of content knowledge in the subject or grade level I am teaching.	○	○	○	○	○
My ability to use a variety of instructional strategies and teaching methods.	○	○	○	○	○
My ability to differentiate instruction for diverse learners.	○	○	○	○	○

My ability to develop and promote students' inquiry and critical thinking skills.	○	○	○	○	○
My ability to use a variety of assessment strategies and tools to monitor student learning.	○	○	○	○	○
My ability to analyze student data to modify instruction.	○	○	○	○	○
My ability to create an environment that is safe and culturally responsive to all students.	○	○	○	○	○
My understanding of my students' cultural identities and backgrounds.	○	○	○	○	○
My ability to reflect systematically on my practice to improve my teaching and improve outcomes.	○	○	○	○	○

My ability to complete additional professional responsibilities, such as submitting grades.	○	○	○	○	○
My ability to communicate effectively with parents, family, and community.	○	○	○	○	○
My ability to integrate technology into the instructional and assessment process.	○	○	○	○	○

Induction Support Activities

Please rank order the induction support activities below in order of importance to you by dragging and dropping the items into an ordered list with the most important activity at the top and least important at the bottom (1 being the most important and 7 being least important):

_____ Collaborative planning time

_____ Regular designated time to meet with my mentor during school hours

_____ Release time to observe other teachers' classrooms

_____ Access to principals and other administrators

_____ Monthly face-to-face afternoon or evening support community for new teachers in the district

_____ Monthly face-to-face afternoon or evening professional learning community where I could discuss an reflect on my teaching practice with teachers who have varying levels of experience

_____ Ongoing online/virtual support community for new teachers in the district

Please rank order the following professional learning topics below in order of importance to you by dragging and dropping the items into an ordered list with the most important topic at the top and least important at the bottom (1 being the most important and 9 being least important):

_____ Content-based or subject-specific professional learning

_____ Classroom management

_____ Social emotional learning/building relationships with students

_____ Diversity and equity issues in the classroom

_____ Instructional strategies for differentiated instruction

_____ Instructional planning

_____ Assessment strategies

_____ Data analysis to inform instruction

_____ Instructional technology

Teacher Preparation Program

My teacher preparation program prepared me well for:

	Yes	No
The curriculum and content in my subject area and/or grade level	○	○
Using a variety of instructional strategies to differentiate instruction	○	○
Using a variety of assessment strategies	○	○
Analyzing data to inform instructional decisions	○	○
Creating an academically challenging environment	○	○
Classroom management strategies to create a positive learning environment	○	○
Understanding social emotional learning and how to build positive relationships with students	○	○
Understanding diversity and equity issues in my school/classroom	○	○
Communicating with parents, families, and communities	○	○

Please describe the top 3 aspects of teaching that you wish you had received more preparation in before you begin your career as a teacher.

_____

_____

_____

Please provide any other comments about beginning to teach in ACSD that you would like to share.

_____

_____

_____

_____

_____

Appendix B

ACSD New Teacher Orientation: Coaching Conversation Sessions Observation Form

Date: _____
School(s):_____
Number of Participants: ___
Focus of the Coaching Conversation: _____

Co-Researcher's Purpose: To learn from new teachers and facilitators in New Teacher Orientation coaching conversation sessions as a participant-observer. Descriptive notes and personal reflections will help to inform future action research team UA-ACSD partnership induction support interventions.

Descriptive Notes on **Participants'** involvement in Coaching Session, which may include: *Questions, Concerns, Level of Engagement, Body Language (including choice of camera turned on or off), Method of Participation (verbal or chat), and Level of Content Understanding:* I noticed…
Reflective Notes on **Participants'** involvement in Coaching Session (your interpretations/impressions/questions about the session): I wonder…

Descriptive Notes on **Facilitators** in Coaching Session, which may include the following elements of facilitation:

- **Pedagogical** - Develop and facilitate engaging discussions that focus energy on critical concepts, principles and skills (example: provide multiple ways to participate, use effective guiding questions)
- **Social** - Build community (example: icebreakers); ensure safety when the conversation requires nuance.
- **Managerial** - Clarify objectives, policies, timelines, and rules (example: setting norms for discussion).
- **Technical** - Troubleshoot anyone's issues/challenges with Zoom and their connectivity.

I noticed…

Reflective Notes on **Facilitators** in Coaching Session (your interpretations/ impressions/ questions about the session):

I wonder…

Follow-up recommendations:
Ideas for future induction support that will be needed:

Appendix C

Action Research Process Key Activities (March 2019-June 2021)

Action Research Process Key Activities
March 2019-June 2021

Color Coding Key
Data Collection Activity
AR Team Meetings
Interventions Activities

Cycle and Phase	Date	Activity	Activity Description
Pre-Study	March 2019	Secured Project Sponsor	• Atlantic Professional Development Schools (APDS) executive committee agreed to serve as the study's Project Sponsor
	May/June 2019	Action Research (AR) Team Recruitment	• Held 4 AR team recruiting sessions: 2 at the University of the Atlantic (UA) and 2 at Atlantic County School District (ACSD)
	July 2019	Research Study Approval	• Research approved by UA Internal Review Board (IRB) and ACSD Research Office
Cycle 1 Construction	May 2019	Induction Teacher Survey	• 258 ACSD 1st, 2nd and 3rd year teachers participated in Induction Teacher Survey to gather baseline data about induction teachers' experiences
	July 24-25, 2019	New Teacher Orientation Observation	• Took field notes at New Teacher Orientation to gather initial data about district's induction program and new teachers
	July 2019	New Teacher Survey and Document Collection	• 178 new ACSD teachers participated in the New Teacher Survey at the end of orientation to gather initial data about incoming new teachers • Collected documents related to ACSD induction program and state-level induction guidance for partnerships
	August 29, 2019	AR Team Meeting 1	• Team relationship building • Reviewed the AR process and project goals • Explored the concept of teacher induction and why each team member invested in it
	September 16, 2019	AR Team Meeting 2	• Team relationship building • Reviewed district induction program components (document review) • Analyzed results from the two induction teacher surveys through personal and group reflection and discussion exercises
	October 22, 2019	AR Team Meeting 3	• Developed team agreements • Group system mapping activity to analyze the induction teacher survey comments about teacher challenges • Data analysis informed team decision to recruit a principal to the AR team
	November 21, 2019	AR Team Meeting 4	• Engaged in 2nd group system mapping activity to analyze the induction teacher survey comments about job satisfaction • Compared two system maps and identified overarching themes and system complexity
	December 10, 2019	AR Team Meeting 5	• Discussed current district leadership changes and volatile context • Discussed system mapping data analysis in context of other initial data analysis to identify overall emerging themes • Began discussion of planning interventions
Cycle 1 Planning Action	January 14, 2020	AR Team Meeting 6	• New principal joins team • Discussed theory of change and desired state • Reviewed data as a whole and voted on top intervention ideas • Refined lead mentor focus group questions and Mid-Year New Teacher

Cycle 1 Planning Action (continued)	January 30, 2020	Focus Groups with Lead Mentors	• Conducted two focus groups with 6 lead mentors
	February 4, 2020	AR Team Meeting 7	• Began initial planning for Community of Practice facilitator development intervention and New Teacher Orientation intervention • AR Team mid-year group process reflection
	February 2020	Mid-Year New Teacher Survey	• 95 new ACSD teachers participated in Mid-Year New Teacher Survey
	February 14, 2020	Conference Presentation	• Four AR team members presented about the research study at the annual conference of the National Association for Professional Development Schools (NAPDS) in Atlantic City, NJ
	March 2, 2020	AR Team Meeting 8	• Analyzed lead mentor focus group themes • Began planning for Community of Practice and New Teacher Orientation interventions
	Mid-March 2020	Covid-19 forces schools and university to close	• Both UA and ACSD temporarily shut down due to the Covid-19 pandemic
	April 7, 2020	AR Team Meeting 9 (first virtual meeting)	• AR team regrouped in virtual format • Decided to focus major intervention on redesigning July 2020 New Teacher Orientation into virtual format with focus on community building
	April 2020	NTO Design Team Forms	• 18-person NTO Design Team, including 5 AR team members and 2 additional UA faculty members, met every two weeks from April through July • Team designed Online Learning Modules for new teachers; 3-day virtual, synchronous NTO; and virtual professional learning for NTO facilitators
	May 5, 2020	AR Team Meeting 10	• Sharing from NTO Design Team members and further NTO planning with AR Team • Reviewed Mid-Year New Teacher Survey results
	June 9, 2020	AR Team Meeting 11	• Planned data collection for NTO intervention • End of year reflections on AR study
Cycle 1 Taking Action	June 19 & July 17, 2020	Online Community Building and Facilitation Workshop	• 2 UA faculty designed and implemented 90-minute virtual Online Community Building and Facilitation Workshop for 25 ACSD educators to prepare them to facilitate NTO learning communities
	July 22-24, 2020	New Teacher Orientation Intervention	• NTO Intervention implemented for 175 new ACSD teachers (plus an additional 25 teachers who were hired mid-year in 2019-20) • 3-day synchronous Zoom format with focus on community building
	End of July 2020	New Teacher Survey	• 201 new ACSD teachers participated in the New Teacher Survey at the end of NTO
		NTO Coaching Session Observations	• 5 AR team members are participant observers in NTO small group coaching conversation sessions
		NTO Facilitator Survey and NTO Debriefing Meeting	• 21 NTO facilitators participated in the NTO Facilitator Survey after NTO • 40 educators involved in NTO held a debriefing meeting, analyzed New Teacher Survey data, and celebrated successes
Cycle 1 Evaluating Action	August 2020	AR Team Critical Incident Reflections	• AR team members who had been involved in NTO wrote Critical Incident Reflections about the experience
	August 31, 2020	AR Team Meeting 12	• Analyzed the NTO data and discussed Critical Incident Reflections • Celebrated successes • Used NTO data to inform new Induction Support Team (IST) intervention to extend summer induction activities
Cycle 2 Planning Action	August 2020	Planning for Induction Support Team (IST) Intervention	• 3 AR team members (2 UA faculty and 1 ACSD administrator) plan IST intervention, which includes monthly half-day virtual professional learning sessions to build capacity of school-based educators to support new teachers, especially with virtual instruction

Cycle 2 Taking Action	September 25 2020	Induction Support Team (IST) Intervention launches	• Half-day professional learning for 56 school-based educators • Focus on community and relationship-building • Sharing challenges educators are facing, primarily related to Covid-19 instructional disruptions
	September 30, 2020	AR Team Meeting 13	• Analyzed the New Teacher Survey data • Discussed many new challenges new teachers facing • Details about Online Community Building and Facilitation summer workshop were shared with AR team, including how this work was being extended in IST intervention
	October 28, 2020	AR Team Meeting 14	• IST facilitators and ACSD administrators shared more about induction challenges during Covid & how schools addressing these • Began working on developing content-based professional learning intervention for spring semester
	October 16, 2020	Induction Support Team Intervention	• Half-day professional learning focuses on modeling/practicing effective mentoring conversations with induction teachers • Small group sharing about support being provided to induction teachers & mentors in school-based monthly learning communities • Read and discussed article related to becoming more vulnerable with sharing challenges with new teachers
	December 2, 2020	AR Team Meeting 15	• IST intervention updates and ideas for spring interventions • Reviewed grant application for induction collaboration sustainability
	December 11, 2020	Induction Support Team Intervention	• Discussed ACSD Induction Director leaving the district • Members shared ideas for how they are offering school-based induction support
Cycle 2 Evaluating Action	September-December, 2020	Ongoing IST Data Collection	• IST meeting notes and chat records • IST member informal surveys • IST Facilitators' written reflections
	January 14, 2021	AR Team Meeting 16	• Reviewed/analyzed IST data collection • Processed challenges/emotions related to ACSD Induction Director leaving the district for another position and impact on the study
Cycle 3 Planning Action	February 9, 2021	AR Team Meeting 17	• Sustainability planning, including reviewing draft overview of the study and activities to share with new Induction Director • Planned spring data collection, including focus groups and End of Year Survey • Shared information about UA faculty partnering with one middle school for social studies and ELA professional learning with teachers
	March 8, 2021	AR Team Meeting 18	• New ACSD Induction Director joined meeting to learn about the study and team's work • Finalized plans for focus groups
Cycle 3: Taking Action	March 10 & 16, 2021	First-Year New Teacher Focus Groups	• Conducted 2 virtual focus group with 6 first-year middle school teachers
	March 31, 2021	AR Team Conference Presentation	• 5 AR team members presented at virtual National Association for Professional Development Schools (NAPDS) annual conference
Cycle 3: Evaluating Action	April 21, 2021	AR Team Meeting 19	• Discussed changes and disruption in UA-ACSD partnership and partnership structures, including impact on research
	May 7, 2021	AR Team Conference Presentation	• 5 AR team members presented at state-wide Induction Summit • State DOE recognized work as exemplary
	May 2021	End of Year New Teacher Survey	• 100 new teachers participated in the End of Year New Teacher Survey
	June 4, 2021	AR Team Meeting 21	• Analyzed Focus Group Themes and End of Year Survey results • Closure with the AR team • Final reflections and hopes for the future

Appendix D

ACSD Induction Teacher Survey-Summary of Key Qualitative Results (May 2019)

n=258 First, Second-, and Third-Year Teachers

Themes from induction teachers' comments on top 3 challenges

Student behavior/discipline problems	N= 65 comments Example: "highly disruptive students"
Classroom management	N=38 comments
Not enough planning time	N=37 comments Example: "no time to meet with the team that taught the same students as me"
Wellbeing (personal time management/ stress/isolation/burnout/work-life balance)	N=26 comments Example: "having to work 13 hours a day"
Lack of administrative support	N-=19 comments Example: "no administrator support for aggressive students!"
Poor communication	N=11 comments Example: "inconsistent support from administration and instructional coach"

Themes from induction teachers comments on supports that would increase their job satisfaction

More administrative support	N-=53 comments Example: "knocked down by district leadership"
Behavior support/consistency	N=49 comments Example: "support from administrators with students that display challenging behaviors is needed"
Mentor support/classroom observations	N=17 comments Example: "making mentors actually act as MENTORS will help"
Classroom management support	N=15 comments

Appendix E

ACSD New Teacher Survey Summary of Key Quantitative Results (July 2019)

n=178 New Teachers

	Teachers' level of experience
No teaching experience	81 (46%)
Prior teaching experience	97 (54%)
Average number of years of prior teaching experience	8.6 years

Top 4 induction support activities that are important to them:

- Collaborative planning time
- Regular designated time to meet with mentor during school hours
- Access to principals/administrators
- Release time to observe other teachers' classrooms

Top 3 professional learning topics they are interested in:

- Classroom management
- Content-based or subject-specific professional learning
- Social emotional learning/building relationships with students

Teachers feel most confident in	Ability to build positive relationships with students	89% agree or strongly agree
	Ability to create an environment that is safe and culturally responsive to all students	86% agree or strongly agree
Teachers feel least confident in	Ability to use a variety of assessment strategies and tools to monitor student learning	73% agree or strongly agree
	Ability to use complete additional professional responsibilities, such as submitting grades	73% agree or strongly agree

Teacher preparation

Where new teachers received teacher preparation	University of the Atlantic	Local private college	State's alternative certification program	Other universities
	51%	8%	11%	39%

Appendix F

ACSD Mid-Year New Teacher Survey Summary of Quantitative Results (February 2020)

n=95 New Teachers

Top 3 challenges for you as a teacher this year

- 23%- Student behavior/discipline problems
- 16%- Student motivation
- 15%- Not enough planning time
- 10%- Personal time management/ stress/work-life balance
- 9%- Classroom management

Top 3 supports that are most needed in increase job satisfaction in ACSD
(# of teachers that listed the support in their top 3)

- 66- Student behavior support/ consistency
- 32- More collaborative planning time
- 30- Classroom management support
- 21- Induction support: time with mentor, classroom observations, professional learning community
- 24- More appreciation for what I do from school and district administrators
- 22- More substitute teachers

The results from the New Teacher Survey you took in July showed that teachers who started working in ACSD in 2019-20 were most interested in four induction support activities. Please indicate your level of satisfaction with each of these areas:

Question	Very unsatisfied	Somewhat unsatisfied	Neutral	Somewhat satisfied	Very satisfied	Total
Collaborative planning time	3%	12%	19%	36%	30%	94
Regular designated time to meet with my mentor during school hours	9%	24%	24%	18%	26%	93
Access to principals/administrators	7%	11%	20%	26%	36%	94
Release time to observe other teachers' classrooms	16%	20%	27%	17%	20%	94

The results from the New Teacher Survey you took in July showed that teachers who started working in ACSD in 2019-20 were most interested in three professional learning areas. Please indicate your level of satisfaction with the professional learning in these areas:

Question	Very unsatisfied	Somewhat unsatisfied	Neutral	Somewhat satisfied	Very satisfied	Total
Content-based or subject-specific professional learning	13%	14%	30%	27%	17%	94
Classroom management	12%	18%	27%	25%	19%	94
Social emotional learning/building relationships with students	10%	15%	33%	20%	22%	94

Appendix G

ACSD New Teacher Orientation (NTO) Facilitator Survey Summary (July 2020)

n=21 New Teacher Orientation Facilitators

Online Facilitation and Community Building Workshop

The workshop helped me understand the four facilitator roles (Pedagogical, Social, Managerial, and Technical) that I need to consider when facilitating online learning and community building.

- Strongly agree-52%
- Agree-38%
- Disagree-10%

The workshop was beneficial in helping me plan interactive and engaging NTO coaching sessions.

- Strongly agree-62%
- Agree-29%
- Disagree-10%

New Teacher Orientation Coaching Session Facilitation Experience

Overall, I felt well-prepared to facilitate the coaching sessions as a result of the professional learning over the summer.

- Strongly agree-50%
- Agree-45%
- Disagree-5%

The new teachers were interactive and engaged in the coaching sessions.

- Strongly agree-55%
- Agree-45%
- Disagree-0%

Our team of facilitators effectively built community among the new teachers and helped them make connections with one another.

- Strongly agree-75%
- Agree-25%
- Disagree-0%

Overall, the coaching sessions were beneficial for the new teachers in our group.

- Strongly agree-70%
- Agree-30%
- Disagree-0%

I enjoyed collaborating with a facilitation team to lead the NTO coaching sessions.

- Strongly agree-85%
- Agree-15%
- Disagree-0%