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A Multiple-Site Case Study of Two University Teacher Induction Programs Using Different
Methods of Delivery

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of
Philosophy at Virginia Commonwealth University.

by

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Dedication

This dissertation would not be possible without the love and encouragement from those around me. I dedicate this work to my husband, Travis, who has provided me with endless support and, at times, the necessary push needed to complete this process. He has been by my side through all of my proud moments and believed in me when I've felt discouraged. I've always been determined to do and be more for him. I also dedicate this work to my parents, Paul and Robin. They have loved and supported me in all of my educational and personal endeavors. My husband and parents are my biggest cheerleaders and words cannot express how much I appreciate them.

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Finally, I would like to thank all of my participants. They openly shared their personal and professional experiences in a way that illuminates the struggles new teachers face everyday. Further, they courageously did so while dedicating their time and efforts to high need schools. I hope I have been able to share their experiences in a way that honors them.

It should also be noted that this material is based upon work supported by the National Science Foundation under Grant Nos. DUE-1340012 and DUE-1339939. Any opinions, findings,

and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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Abstract

A MULTIPLE-SITE CASE STUDY OF TWO UNIVERSITY TEACHER INDUCTION PROGRAMS USING DIFFERENT METHODS OF DELIVERY

By Molly M. Henschel, M.A.Ed.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2016.

Major Director: Jacqueline T. McDonnough, Ph.D., Department of Teaching and Learning

The literature shows that up to 50% of teachers will leave the profession within their first 5 years of teaching (Saka, Southerland, Kittleson, & Hutner, 2013). Although reasons for departure vary by teacher, Johnson and Kardos (2005) found schools with high-poverty and high-minority students display excessive rates of teacher turnover, which has costly consequences for students, teachers, and the school system. Teacher induction programs were established to assist beginning teachers as they transition into their new professional career in an attempt to increase retention rates. Unfortunately, induction programs systematically vary across the United States and efforts are needed to explore teachers' experiences with induction when employed at high-minority and high-poverty schools.

This research aimed to explore beginning teachers from high need schools' experiences with university-based PLC induction. A total of 23 teachers participated in the induction programs during the 2015 - 2016 academic year. This research provides findings from three

different data sources: interview transcripts, surveys, and focus group transcripts. Data was collected to understand beginning teachers' experience with induction, the types of support offered by the programs, their intentions to remain at their school, and their attitudes towards the method of program delivery.

Findings indicate that the majority of the teachers had positive experiences with the two induction programs. Mostly, the teachers felt that induction provided emotional and personal support, as they believed the meetings to be well-organized therapy sessions. Although the teachers reported additional supports offered by the program, there were numerous challenges associated with working at high need schools that induction could not address. According to the novice teachers, administrative support had the largest influence on their intentions to stay or leave their high need schools. As a result, the teachers provided mixed results as to induction's impact on their decision to stay or leave their current school. Finally, the majority of teachers prefer in-person models to virtual models although there were advantages and disadvantages to both types of programs. Lastly, this study provides practical applications from this research and future directions for research.

Chapter 1: Introduction

In recent years, the population and demographic makeup of the United States has significantly changed. As a result of these demographic shifts, American teachers are seeing transformations of the “typical” classroom. Since the enactment of the immigration Act of 1965, African, Asian, and Latin American immigration to the United States has flourished (Hatton, 2015). Resulting from this act and other subsequent immigration policies, the number of non-Hispanic whites in the United States is decreasing. This is especially true for the younger populations, including school-aged children. As the student population continues to grow more diverse and the teacher workforce remains predominately White (NCES, 2013), the racial mismatch could pose challenges for beginning teachers in U.S. schools.

Research repeatedly shows challenges with preparing, recruiting, and retaining effective teachers (Allensworth, Ponisciak, & Mazzeo, 2009; Hanushek, Kain, & Rivkin, 2004a; Ronfeldt, Loeb, & Wyckoff, 2013). Early career turnover is considered a major problem impacting beginning teachers in American schools (Guarino, Santibanez, & Daley, 2006; Henke, Zahn, & Carroll, 2001; Ingersoll & Perda, 2010; Kirby, Berends, & Naftel, 1999; Podgursky, Monroe, & Watson, 2004). More than half of the teachers in high-poverty, high-minority, and urban schools leave or move to another school within 5 years (Adamson & Darling-Hammond, 2012; Allensworth et al., 2009). Traditionally, these school systems exhibit poor working conditions

(e.g., inadequate facilities and lack of administrative and collegial support) that decrease teachers' job satisfaction (Quartz et al., 2008). Additional studies suggest these schools also have greater teacher-student racial mismatch, which is when the teacher is a different race than the majority of the student population. This mismatch could influence a teacher's decisions to move to a different school or leave the profession altogether. Excessive turnover rates have costly consequences for the teacher, students, and the school at which he or she is employed. Therefore, reform efforts were established to assist beginning teachers as they transition into their new professional role.

One such initiative is the National Science Foundation's (NSF) Robert Noyce Scholarship Program. This program is designed to encourage talented Science, Technology, Engineering, and Mathematics (STEM) majors and professionals to become K-12 mathematics and science teachers. This teacher preparation program and in-service support system is dedicated to training quality STEM teachers for high need schools while providing additional supports throughout their first two years of teaching. This continual support is essential as many teachers experience a "reality shock" (Veenman, 1984) as they assume the roles of their new position. During their first years, research shows that many teachers feel a sense of isolation as much of their work is performed in the confines of their own classroom (Ingersoll, 2012). Further, beginning teachers are usually placed in the most difficult classroom placements such as classrooms with the lowest performing students, large classroom sizes, or a high number of students with learning needs. Although the first years of teaching are needed to expand knowledge about school policies, beginning teachers are expected to perform at the same level as their veteran counterparts (Saka, Southerland, & Brooks, 2009; Joerger & Bremer, 2001).

Research suggests that many of these issues are reasons novice teachers decide to leave the profession early in their career.

There is evidence that teacher turnover rates decrease when beginning teachers are provided assistance during their first few years of teaching (Smith & Ingersoll, 2004). Specifically, research has recently focused on induction programs, which provide “support, guidance, and orientation for novice teachers during the transition into their first teaching job” (Smith & Ingersoll, 2004). Unfortunately, these induction support systems often vary in length, frequency, and types of support (Ingersoll, 2012; Johnson & Kardos, 2005). In addition to providing transitional support, the current era of induction focuses on building teacher skills and knowledge to increase the quality of learning for all students. To provide structure to these induction sessions, some programs use a professional community to integrate beginning teachers into their new role (McDonnough & Henschel, 2015; O’Malley, 2010; Saka et al., 2009). Professional Learning Communities (PLC) provides teachers a means to communicate with others and reflect on their teaching in a structured format. Although these meetings have historically taken place in-person, virtual learning communities have recently emerged.

Statement of the Problem

The United States school systems face a significant problem with teacher turnover. According to Saka, Southerland, Kittleson, and Hutner (2013), up to 50% of teachers leave the profession within the first 5 years. The national cost of teacher turnover for America’s public schools is estimated to be over \$7.3 billion a year (The National Commission on Teaching and America’s Future, NCTAF, 2007). This cost analysis does not include the district’s cost for teachers who move between schools in pursuit of a better position. Unfortunately, not all U.S. schools experience this disparity equally; therefore, costs associated with teacher turnover effect

schools differently. Some U.S. schools have waiting lists for their teaching positions while nearby schools have difficulties filling open positions.

Numerous studies show challenges preparing, recruiting, and retaining effective teachers in low-income and high-minority schools (Allensworth et al., 2009; Hanushek et al., 2004a; Ronfeldt et al., 2013). Some research focusing on turnover from highly diverse school systems emphasized teachers' discontentment with their students and the student-teacher racial mismatch (Hanushek, Kain, & Rivkin, 2004b; Renzulli, Parrott, & Beattie, 2011). Other research provides evidence that teachers are not escaping lower-income and lower-performing students of color, but they are leaving due to poor working conditions commonly associated with these environments (Allensworth et al., 2009; Auguste, Kihn, & Miller, 2010; Johnson, Kraft, & Papay, 2012). Without a specific and clear understanding of why teachers are leaving these schools in pursuit of whiter, wealthier, and higher performing schools, it becomes difficult to focus reform efforts on retaining teachers in these environments.

While it is well established that beginning teachers benefit from comprehensive induction programs during their first few years in the profession, few teachers participate in such formalized programs (Weiss & Weiss, 1999). Beginning teacher induction programs often vary in duration, frequency, and types of program supports (Ingersoll, 2012; Johnson & Kardos, 2005). As an online presence becomes more common and convenient, some induction programs are being held online. Although it is important to have an adaptive induction program encompassing societal changes, little is known about how the method of program delivery (i.e., face-to-face vs. online) impacts beginning teachers' experiences with induction, feelings of support, and their intentions to stay or leave their high need school. The current study addresses this gap.

Program Description

Two Mid-Atlantic universities were selected for this study. At both sites, the Robert Noyce scholarship programs were developed to provide science and mathematics teachers a rich conceptual understanding of the research, theory, and practice behind effective teaching in high need schools. Upon graduation, all Noyce scholars were invited to participate in monthly induction meetings. Participation was voluntary and offered to teachers during their first two years of teaching.

Both study sites held induction sessions during the 2015 -2016 academic year. These meetings spanned from September 2015 to May 2016, totaling eight sessions for each program. The first seven sessions at University A (Univ-A) and the first six sessions at University B (Unvi-B) provided teachers an opportunity to develop session norms, share professional problems and successful lessons, and learn from expert guest speakers. Implementation rubrics were developed and used to understand the application of McDonald and colleagues' (2007) Norm Setting, Descriptive Consultancy, and Successful Analysis protocols, as well as the guest speaker session, at each university site. Findings from this measure were used to determine any differences in program implementation. The seventh session at Univ-B was a panel discussion with current pre-service teachers and was omitted from this study. The remaining session at each site was a focus group, in which teachers were able to share their experiences in the induction program. The same focus group protocol was used with both study sites. Each session was approximately 90 minutes in length.

Purpose of the Study

The purpose of this multiple-site case study was to explore beginning teachers' experiences with university-based PLC induction. Specifically, this study sought to understand beginning teachers from high need schools perceptions of program supports and induction's influence on beginning teachers' intentions to stay or leave the profession. Lastly, this study examined teachers' involvement in two university-based PLC induction programs implementing similar program procedures and activities using either face-to-face or online delivery. By understanding how different methods of delivery affect beginning teachers' experiences with induction, implications for future research and practice can be established.

Research Questions

Using mainly interview transcripts to understand beginning teachers' experiences with university-based PLC induction, this multiple-site case study was guided by an overarching question and additional sub-questions:

1. What experiences do beginning teachers from high need schools have with university-based PLC induction?
 - a. How do beginning teachers from high need schools perceive induction support?
 - b. How does PLC-based induction influence teachers' intentions to stay or leave high need schools?
 - c. What are teachers' experiences with face-to-face or online delivery of induction?

Overview of Methodology

Qualitative methods were used to explore how beginning teachers experienced university-based induction programs. Two university sites were used to explore teachers' experiences with induction. Further, teachers' attitudes on induction support and intentions to

stay or leave high need schools were collected. Finally, cross-site analyses compared beginning teachers' experience with university-based PLC induction based on program implementation.

Data Collection

Interviews were the primary method of data collection. Eleven beginning teachers who participated in 2015 – 2016 induction were interviewed. Experts reviewed and provided feedback on the semi-structured interview protocol. After feedback was incorporated, the protocol was piloted with three teacher volunteers. Based on the expert panel and pilot interviews, all necessary changes were made to the interview protocol before the interviews are conducted for the current study. The semi-structured interviews allowed participants to have similar questions, while allowing the interviewer and interviewees an opportunity to respond to any additional follow-up questions. These interviews were intended to capture teachers' experiences with induction. Teachers were asked to participate in the individualized interviews during the March induction sessions as well as in a follow-up email. All interviews were audio recorded and transcribed for a more accurate account of the teachers' responses.

In addition, the Noyce staff from both universities provided the researcher with existing data, which was used to support interview findings. This data included online survey results about novice teachers' intentions of attrition at three time points over the year as well as existing focus group transcripts. As part of the Noyce program, teachers completed the Teacher Attrition Scale (Cashwell, 2013; Heckman, 2011). The survey was administrated electronically and consisted of three sections: 1) factors that would cause you to leave the profession; 2) intentions to leave the profession; and 3) rank ordering the six attrition factors (i.e., personal factors, working conditions, administrative support, salary, accountability, and teacher preparation). The online survey also included demographic questions. In addition, data from existing focus groups

were used for this study. During the focus groups, teachers were asked to report on various experiences associated with participating in the induction program. Both the existing survey and focus group data were used to support the primary interview data source for this study.

Data Analysis

Audio recorded interviews were transcribed, organized, and managed using Atlas.ti. Each interview transcript and focus group transcript was coded using systematic and open-ended coding (Yanow, 2014). This allowed themes to emerge based on the literature review and interpretative findings (Rippner, 2014). For comparative findings, transcript data was analyzed within-cases and cross-cases. In addition, frequency tables for quantitative survey data were developed using SPSS (Statistical Package for the Social Sciences). This information, along with qualitative focus group data, were triangulated with interview findings and used to support the interpretative findings.

Summary

In sum, the transition for novice teachers is difficult without effective supports. Research shows that up to 50% of teachers will leave the profession within their first 5 years of teaching (Saka et al., 2013). Teacher turnover is currently a major and costly problem in our country. Schools classified as high need, which usually have a high population of poor students of color, are most affected (Allensworth et al., 2009; Hanushek et al., 2004a; Ronfeldt et al., 2013). As the demographics of our nation continue to become more diverse, teachers need to be prepared to interact with students from different racial and cultural backgrounds. To assist with this transition, two university-based PLC induction programs were developed and designed to assist teachers in high need environments. This study compared the two programs for insights into beginning teachers' experiences with the programs.

Definition of Terms

For the purpose of this study, the following operationalized terms are defined:

Facilitator: A program manager who regularly communicates with participants and guides each induction session using protocols.

High Need School: Any school meeting at least one of the following criteria: 1) A high percentage of individuals from families with incomes below the poverty line; 2) a high percentage of secondary school teachers not teaching in the content area in which they were trained to teach; or 3) a high teacher turnover rate (National Science Foundation, NSF, 2014, p.5).

New/Novice/Beginning Teacher: Teachers in their first two years of teaching.

Racial Mismatch: The majority of the schools' students are of a different race or ethnicity than the teacher (Renzulli et al., 2011).

Retention: A systematic attempt to create an environment that encourages teachers to remain in the classroom and not to seek other employment.

STEM Teacher: A science, technology, engineering, or mathematics teacher at the elementary school or secondary school level (NSF, 2014)

Turnover: The loss of teachers as a result of death, retirement, disability, and other voluntary or involuntary exits (Kirby et al., 1999)

Chapter 2: Literature Review

The purpose of this chapter is to investigate historical and recent influences in the United States' school systems that are influencing beginning teachers' decisions to stay in their current school, move to another school, or leave the profession altogether. Specifically, this review of the literature highlights research on teacher-student interactions and working conditions in high need school environments. The next section of this chapter examines induction programs, which are a commonly studied support system for novice teachers during their first few years of teaching. Although the literature does not provide a universal model for induction, this chapter discusses a theoretical framework used to structure the induction programs for the current study. In the final section of this chapter, this review examines the recent shift in induction literature regarding method of program delivery. Lately, induction programs are incorporating more online components as educational systems become more reliant on virtual communities. This review of the literature creates the context for this study.

The Demographic Shift in the United States

When President Lyndon Johnson signed the Immigration Act of 1965, few could imagine the demographic changes America would undergo. In signing the law, the national quota system, which heavily favored immigrants from Western Europe was abolished (Kennedy, 1966). This meant that immigrants could compete for American immigration visas on a first-come, first-served basis without regard to country of origin (Keely, 1971). Since the 1960s, this law has helped increase the flow of immigrants from Africa, Asia, Latin America, and other parts of the

world (Hatton, 2015). For instance, from 1950 to 1959 the majority of the U.S. immigration population was from Europe (56%), while 37% were from the western hemisphere, 5% from Asia, and 0.5% from Africa. In 2013, Europeans only made up 9% of the immigration population, while immigrants from the Americas accounted for 40%, 39% of immigrants were from Asia, and 10% were from Africa (United States Department of Homeland Security, 2014). As a result of the Immigration Act of 1965 and other subsequent immigration policies, the demographic makeup of America has greatly shifted.

For the first time, non-Hispanic Whites account for the minority of births in the United States. The 2010 US Census showed that minorities accounted for just over one-third of the nation's population, an increase of 29% since 2000 (Humes, Jones, & Ramirez, 2011).

According to Passel, Livingston, and Cohn (2012), part of the growth explanation is the difference in median age across races. In 2011, non-Hispanic Whites had a median age of 42.3. In contrast, Hispanics, which are the largest growing minority, had a median age of 27.6. Non-Hispanic Blacks and Asians also had lower median ages than Whites with 32.9 and 35.9, respectively. As a result, there are higher percentages of childbearing-aged women within minority populations.

Another social change that could account for the demographic shift within US-born births is the increase in interracial relationships. In 2010, 9% of non-Hispanic Whites married someone of a different race, which is nearly triple the rates from 1980 (Wang, 2012). Using the 2009 Pew Research Center Survey, 35% of adults said they have a family member who is married to someone of a different race (Wang, 2012). All of these factors contribute to the rapid change in racial and ethnic demographics within our nation. As the racial composition of our nation's

youth continues to transform, schools need to be able to adapt to the increasingly diverse student population.

The Changing Racial Composition of U.S. Schools

Within the next 50 years, the United States is projected to experience even more major demographic shifts. Currently, the non-Hispanic White population is considered the majority as it is the largest racial group and comprises over 50% of the nation's population. According to Colby and Ortman (2014), this group is projected to only represent 44% of the total population by 2060. As a nation, this majority-minority crossover is expected to occur in 2044; however, this crossover is already occurring in younger generations. Currently, American public schools are entering into a new demographic era. In 2014, the National Center for Education Statistics (NCES, 2013) expected the number of Hispanic (25.8%), African-American (15.4%), Asian (5.2%), American Indian (1.1%), and multi-race students (2.8%) in public K-12 classrooms to outnumber non-Hispanic Whites (49.8%). However, this change does not mean that all U.S. schools will become more diverse.

Numerous school districts, even individual schools within diverse districts, still remain very segregated. This racial separation is challenging for school systems as high-minority schools have been strongly linked to high-poverty schools (Orfield, Frankenberg, Ee, & Kuscera, 2014). In 2011-12, 45.8% of all public school students were eligible for free and/or reduced-price lunch. However, over 75% of students who attended high-minority schools were also enrolled in a school with more than 70% of students living in poverty. By contrast, students who attended predominately Asian and non-Hispanic White schools (i.e., <10% black and Latino) had only 4% of students living in poverty (Orfield et al., 2014). Across the nation, the racial concentration of school poverty is so severe that middle- and upper-middle-class White students

attend a completely different school system than poor students of color (Orfield, Kucsera, & Siegel-hawley, 2012). As a result, White children are most often characterized by attending low-poverty schools. This racial and economic inequality is challenging for school systems for two reasons. First, high-poverty schools are more likely to lack educational resources (Orfield & Lee, 2005). This means the students who need the most are concentrated in the schools least likely to provide the resources they need. Second, U.S. public school teachers remain predominately White (82%) according to the National Center for Education Statistics (2013). Therefore, many of America's public school teachers are less likely to have had previous experiences in high-minority or high-poverty school systems before entering the workforce.

As the student population continues to grow more diverse, the teacher-student racial divide will likely widen. Research suggests, this racial mismatch could influence the performance of students from high-minority and under-resourced communities. Notably, Ferguson (2003) found that many middle- and upper-class White teachers who were paired with lower-class Black students were biased in their perceptions and expectations. A commonly examined teacher perception bias is known as self-fulfilling prophecy (Oates, 2003). Within the school context, self-fulfilling prophecies occur when teachers' expectations lead students to act in ways that confirm their predetermined expectations (Tauber, 1997). Therefore, preconceived stereotypes of Black students' intellectual inadequacies cause teachers to underestimate Black students' performance more than White students (Ferguson, 2003). As a result, White teachers can miss opportunities to improve Black student performance. Consequently, positive student-teacher relationships are helpful at improving academic performance. Unfortunately, building positive multicultural relationships between teachers and students becomes even more difficult if teachers leave or never chose to enter those high-minority school systems.

Factors Influencing Teacher Turnover in High-Minority and High-Poverty Schools

Since the early 1990s, teacher turnover rates have increased by 28% (Richard Ingersoll & Merrill, 2010). According to Kirby, Berends, and Naftel (1999), teacher turnover is defined as the loss of teachers as a result of death, retirement, disability, and other voluntary or involuntary exits. According to Saka, Southerland, Kittleson, and Hutner (2013), 9% of new teachers do not complete their first year, 14% leave after their first year, 30% leave the classroom within 3 years, and up to 50% leave within 5 years. Therefore, early career turnover is considered a major problem impacting the number of qualified teachers in U.S. schools (Guarino, Santibanez, & Daley, 2006; Henke, Zahn, & Carroll, 2001; Ingersoll & Perda, 2010; Kirby, Berends, & Naftel, 1999; Podgursky, Monroe, & Watson, 2004). Although teacher turnover is a major factor affecting many school systems, not all U.S. schools experience this issue in the same way. Some schools have extensive waiting lists of qualified candidates for their teaching positions while nearby schools, sometimes in the same district, have trouble filling job openings.

Research repeatedly shows challenges related to recruiting and retaining effective teachers in low-income and high-minority schools (Allensworth et al., 2009; Hanushek et al., 2004a; Ronfeldt et al., 2013). For instance, Boyd, Lankford, Loeb, and Wyckoff (2005b) found evidence that teachers prefer selecting schools similar to where they originally grew up. Since the majority of the teacher workforce is White and middle-class (Ingersoll et al., 2014), high-minority and low-income schools are witnessing a high percentage of White teachers changing jobs to schools with lower proportions of minority students (Perda, 2013). As student demographics increasingly represent a more diverse population and characteristics of the teacher workforce remain stable, these job changes will continue to be a problem if not addressed.

Other research focusing on turnover from highly diverse school systems specifically emphasize teachers' dissatisfaction (Hanushek et al., 2004b; Renzulli et al., 2011). According to Renzulli and colleagues (2011), teacher job satisfaction is linked, in part, to the racial compositions of the school. They found evidence that White, public school teachers showed lower levels of job satisfaction when racially mismatched to students of color. In their study, the results indicate that difficulties with interracial interactions decreased levels of job satisfaction. These teacher-student interactions and preconceived biases towards students of color may have negative impacts on student learning, which is also associated with job dissatisfaction (Downey & Pribesh, 2004; Ferguson, 2003; McGrady & Reynolds, 2012; Oates, 2009; Renzulli et al., 2011). In a 2009 study by Oates, teachers who held more favorable student-perceptions enhanced academic performance. Unfortunately, teachers in this study held moderately less favorable academic perceptions of their Black students. Hunt (2007) believes these views are not an innate inferiority of Blacks or racism. Instead, White teachers' view the socioeconomic status gap between Blacks and Whites as "a lack of will or effort on the part of the Blacks" (p. 392). In sum, teachers may perceive their Black students as less motivated than other students. These lowered expectations subject students of color to become more susceptible to the self-fulfilling prophecy.

Teachers' predispositions may inadvertently contribute to instances of student misbehavior and increased disciplinary referrals. Hinojosa (2008) found that Black students are 286% more likely to receive out-of-school and 127% more likely to receive in-school suspension than their White peers. These misbehaviors might be a result of teacher expectations for students based on race. For example, Tenenbaum and Ruck (2007) found teachers had the highest expectations for Asian American students, followed by Whites, Latinos, and the lowest expectations for Black students. In the same study, Black students had a higher number of

disciplinary referrals than White students. According to Ingersoll and May (2012), student disciplinary problems are strongly linked to teacher turnover. Teachers report problem behaviors, such as disrespect and inattentiveness, to be significantly related to job satisfaction (Grayson & Alvarez, 2008). Therefore, evidence suggests that teacher expectations and student disciplinary are a major problem for teachers in high-minority school systems.

Although geographical location and student demographics play an important role in teachers' career choices (Auguste et al., 2010), other studies provide evidence that teachers are leaving because of negative work environments (Allensworth et al., 2009; Johnson, Kraft, & Papay, 2012). According to this research, teachers are leaving negative work conditions commonly associated with high need environments. According to Quartz and colleagues (2008), these conditions include poor facilities, less administrative support, and organizational structures that limit teachers' input into instructional decisions. Ingersoll (2011) found that over half of the teachers who moved or left their jobs at challenging schools stated their decision was directly linked to job dissatisfaction with poor working conditions.

In 2005, Johnson and Kardos found many teachers purposefully moved away from schools with high concentrations of poor, minority, and low-achieving students because these environments fell short at enhancing learning opportunities due to ill-equipped classrooms. They also found evidence that many teachers in disadvantaged middle and high schools are often assigned classes outside of their trained discipline. Ingersoll (2002) supports these findings and reports, "teachers in disadvantaged schools are...far more likely to be misassigned than are those in advantaged schools" (p. 17). Most new teachers will experience some degree of a learning curve (Perda, 2013), but allocating teachers to subjects outside of their training is a major disadvantage to both teacher and student.

Although a well-maintained facility is important for teachers, social conditions also play a vital role in their decision to stay or leave. The work of first year teachers is often done in isolation and is frequently associated with a “lost at sea” or “sink or swim” experience (Ingersoll, 2012; Saka, Southerland, & Brooks, 2009). Novice teachers are commonly left to succeed or fail on their own with little support from colleagues or administration (Ingersoll, 2012; Weiss & Weiss, 1999). In a qualitative study, Johnson and Birkeland (2003) found many teachers moved around searching for schools that provided supportive principals and colleagues. Other studies found that teachers’ decisions to change or leave schools was directly tied to the school administration, even when differences in school demographics was taken into account (Boyd et al., 2011; Ladd, 2011). According to Boyd and colleagues (2011), teachers favored an administration that was “supportive and encouraging,” but the quantitative data lacked richness on specifically what that means. This lack of connectivity and support with fellow colleagues and administration can be very stressful for a new teacher and, at times, lead them to search for new professional endeavors. Although some turnover is inevitable and normal, the significant loss of beginning teachers can be detrimental for many school districts.

Consequences of Teacher Turnover

Excessive turnover has costly consequences for both the teacher and the school at which he or she is employed (Grayson & Alvarez, 2008). Although the average salary of new teachers is on the lower end of the continuum, school systems must still incur the costs associated with the recruitment, selection, and training of a new hire. According to The National Commission on Teaching and America’s Future (NCTAF; 2007), the national cost of teacher turnover for America’s public schools is estimated to be over \$7.3 billion a year. In a study of five school districts, the cost per teacher leaving ranged from \$4,366 in Jemez Valley, New Mexico to

\$17,872 in Chicago, Illinois (NCTAF; 2007). Unfortunately, the cost analysis does not include the district's cost for teachers who transfer or move to other schools in pursuit of a more desirable position.

Costs associated with teacher turnover affect schools differently based on their demographic makeup. In 2013, Ronfeldt and colleagues found that high turnover rates have a greater impact on low-performing, African-American students than for their higher-performing classmates. To make matters worse, schools with high populations of minority students also have high proportions of novice teachers, who often are less effective at teaching. Henry, Fortner, and Bastian (2012) and Kane et al. (2006) found that teachers' effectiveness at improving their students' test scores increases significantly through their first several year of teaching. Therefore, if a high percentage of teachers continue to leave the profession early in their career or move to better performing schools, the quality of student learning in disadvantaged schools will be hindered.

To support teacher effectiveness, many school districts require teachers to participate in professional development. Unfortunately, the constant churning of teachers limits the influence of early professional development. Professional development is implemented with the intentions that teachers remain teaching. As teachers move or leave schools, those skills leave with them and schools are left to constantly fund discontinuous professional development (Allensworth et al., 2009). This revolving door can inadvertently diminish any trusting relationships among teachers (Ronfeldt et al., 2013; Simon & Johnson, 2015). When teachers collaborate with one another, they exchange knowledge about teaching, students, and school culture. As teachers leave, there is a loss of institutional knowledge that could be used for supporting student learning (Ronfeldt et al., 2013). Further, stable relationships allow teachers to improve instructional

quality, student behavior, professional conduct, and parental involvement (Bryk, Sebring, Allensworth, Easton, & Luppescu, 2010; Bryk & Schneider, 2003; Ronfeldt et al., 2013). All of which are all associated with student success, especially for low-income students.

Efforts to Prepare, Recruit, and Retain Teachers in High Need Schools

With increased recognition that turnover negatively impacts school systems, especially in impoverished areas, there is growing interest in the preparation, recruitment, and retention of qualified teachers. Since many college students obtaining degrees in education have limited exposure to diverse populations and their cultures (Settlage, 2011), the realities of these classrooms can be a cultural shock. To alleviate distress in these new environments, teacher preparation programs traditionally prepared pre-service teachers for diverse environments through the provision of coursework. In a 2011 study, Siwatu warns that multicultural coursework might not be enough to alter pre-service teachers' views of diverse students. After an extensive review of the literature, Sleeter (2008) argues that pre-service teachers cannot become equitable and effective teachers of economically disadvantaged students without preparation programs implementing the following three pillars: (1) university-based coursework that promotes cross-cultural awareness and self-awareness of being a "cultural being;" (2) field placements in a culturally diverse school; and (3) community experiences in cross-cultural settings. As a result, some programs are now beginning to foster multicultural competence coursework with diverse practicum placements and student teaching (Goff, Matkins, & McDonnough, 2014; Matkins, McDonnough, & Goff, 2014, 2015; Matkins, McDonnough, Goff, Riesbeck, & Ottolini, 2011).

A major initiative focused on recruiting, preparing, and retaining teachers in low-income, high-minority schools is the National Science Foundation's (NSF) Robert Noyce Scholarship

Program. This program is designed to encourage talented Science, Technology, Engineering, and Mathematics (STEM) majors and professionals to become K-12 mathematics and science teachers. Originally authorized under the NSF Authorization Act of 2002 and reauthorized in 2007 under the America COMPETES Act and the America COMPETE Reauthorization Act of 2010, the Robert Noyce Teacher Scholarship program aims to support beginning mathematics and science teachers with overcoming challenges inherent to teaching in high need environments (National Science Foundation, 2014). This pre-service preparation and in-service support system is not only dedicated to recruiting and preparing quality STEM teachers, but it also aims to retain teachers by providing continuing support throughout their first two years of teaching.

With a goal of recruiting STEM teachers who might not otherwise consider teaching, the Robert Noyce Teacher Scholarship program provides funds to institutions of higher education for annual scholarships for STEM undergraduate majors and STEM professionals who will obtain teacher licensure. To receive NSF funding, institutions of higher education must provide evidence of: (a) genuine collaboration between faculty in STEM departments and education faculty; (b) exemplary teacher preparation and development efforts and must include evidence of an infrastructure that is supportive of new teachers, especially during their induction years; (c) activities and support mechanisms that will be available to recipients to ensure they become highly effective STEM teachers in elementary/secondary schools and are able to fulfill their teaching service commitment (National Science Foundation, 2014, p.4).

Teachers who accept the funding are required to complete two years of teaching in a high need school district for every year of support. If the teacher fails to fulfill this requirement, they are required to repay the money allowance in full. In order for a school to be considered a “high need school,” at least one of the following criteria must be met:

1. A high percentage of individuals from families with incomes below the poverty line;
2. A high percentage of secondary school teachers not teaching in the content area in which they were trained to teach; or
3. A high teacher turnover rate (National Science Foundation, 2014, p.5)

Although the Robert Noyce scholarship does not stipulate pre-service education requirements, a comparison study of two Noyce pre-service programs demonstrate the importance of including both multicultural coursework and pre-service placements in racially and culturally diverse schools. In this study, Matkins and colleagues (2014) found teachers who were immersed in high need schools during practicum and student teaching exhibited a dip in science-specific and culturally responsiveness self-efficacies once they began student teaching; whereas, teachers in field placements in more affluent schools did not show a midstream dip. Teachers in the more diverse practicum placements faced a more realistic, situation-specific, and culture-sensitive experience once they entered their classrooms than the pre-service teachers in the other program. However, these teachers were able to rebuild confidence at the conclusion of student teaching. Therefore, field placements in high need environments provides pre-service teachers a better understanding of what it is like to teach in these schools before obtaining employment in similar environments.

Research on Teacher Induction Programs

Teacher pre-service programs are intended to prepare teachers for success in the profession, but these programs cannot be considered the end of training for novice teachers. Pre-service, which refers to “the education and preparation candidates receive before employment” (Ingersoll & Strong, 2011, p. 203), are designed as a training process to prepare candidates to become teachers. Teacher preparation programs do not allow sufficient time for teacher

candidates to develop the skills and knowledge necessary for successful practice (Ingersoll, 2012). According to Feiman-Nemser (2003), novice teachers must learn additional skills that cannot be understood outside the contexts of teaching. In-service teaching signifies the “professional development opportunities to develop teachers’ skills after they have settled into their careers” (Kapadia, Coca, & Easton, 2007, p. 4). The first years of teaching, also known as the induction period, represents a significant transition for new teachers. Robert Schaeffer (1967) recognized that beginning teachers need support to ease their transition into full-time teaching. He realized that teachers graduating from teacher preparatory programs were not finished products and still had much to learn. Therefore, induction programs are often considered as a bridge from student of teaching to teacher of students (Ingersoll & Smith, 2004).

Although induction and mentorship supports have, at times, been used interchangeably to describe the same program, there are marked distinctions between the two. Unlike induction, mentoring is more individualistic, usually consisting of a veteran teacher and a beginning teacher in a school (Ingersoll & Strong, 2011). Selection to be a mentor can be voluntary or a semi-mandatory assignment. The mentor and mentee may only meet once at the beginning of the school year or have frequent meetings over a couple of years. In contrast, induction promotes professional development by fostering interdependent collegial support. Smith and Ingersoll (2004) define induction as “support, guidance, and orientation for novice teachers during the transition into their first teaching job” (p.681). According to Breaux (2003), a truly systematic induction program is a thoughtful training system that assists novice teachers with acquiring skills, knowledge, and outlooks necessary to become a successful teacher. These systems of support often vary in length of time, but typically these programs continue to assist novice teachers throughout their first two to three years of teaching (Breaux, 2003). To further examine

the influence of induction in the United States, it is helpful to understand the origins of such programs.

Overview of Teacher Induction Programs

Over the past few decades, the literature on induction reveals distinctive shifts in thinking about what induction is and what it should accomplish. In 1962, the term induction was first referenced as entry into the school system as a beginning teacher (Lawson, 1992). Two decades later, Florida became the first state to mandate a state-level induction program (Feiman-Nemser, Schwille, Carver, & Yusko, 1999). Schools and school districts mostly administered the early state-initiated induction programs (Huling-Austin, Odell, Ishler, Kay, & Edelfelt, 1989; Wood & Stanulis, 2009). These programs were largely informal, loosely organized, and often unfunded (Wood & Stanulis, 2009). According to Feiman-Nemser (2012), induction was originally viewed as a temporary bridge designed to ease new teachers into the profession. These programs were aimed at increasing teacher retention and decreasing stress and problems inherent to beginning teachers.

The 1980s marked rapid growth in induction programs (Huling-Austin et al., 1989). By the early 1990s, 40% of new teachers reported participating in a formal induction program (Feiman-Nemser, 2012). Prompted by the implementation of the Interstate New Teacher Assessment and Support Consortium's (INTASC, 1992) standards for teacher induction and state teaching and/or curricular content standards, new teachers' performance became more organized and standards-based (Wood & Stanulis, 2009). This influenced the next induction reform effort, which called for greater professionalism and understanding of teacher learning. According to Feiman-Nemser (2012), induction was now seen as individualized professional development. These programs were designed to increase new teacher retention, enhance teacher competency,

improve learning for all students, and increase teacher satisfaction.

The most recent data from the Schools and Staffing Survey, collected during the 2007-2008 school year, shows that 89.4% of new public school teachers receive either mentoring or induction support (Ingersoll, 2012). In the current era of induction, educational leaders view these programs as a process of integrating new teachers into collaborative professional communities (Feiman-Nemser, 2012). These programs are focused on the continuous learning of teachers, collective responsibility for teaching and learning, quality learning environments for students, and student achievement.

Unfortunately, induction participation still varies depending on the state, district, and school (Johnson & Kardos, 2005; Weiss & Weiss, 1999). In their 2011 analysis of all 50 states' induction policies, Goldrick and colleagues (2012) found that 27 states required some kind of induction program for new teachers. They also found that “no single U.S. state has perfected its induction policy to ensure the provision of high-impact, multi-year induction support for all beginning educators” (p. iv). Moreover, only half of the states authorized induction support for all novice teachers. Unfortunately, comprehensive induction is the exception for most beginning teachers rather than the rule.

Purpose of Teacher Induction Programs

Many teachers experience a “reality shock” (Veenman, 1984) as they assume the roles and responsibilities associated with their new profession. Unfortunately, new teachers not only have to handle an abundance of stress and anxiety during their first year, but these years also mark a critical learning stage in their career. In their first years, teachers need to expand their content-specific knowledge, acquire knowledge about school norms and policies, and develop their professional identities. Therefore, an induction program should be viewed as a continuum

starting with personal and emotional support, moving towards task-specific or problem-related support, and ending with being critically reflective (Stansbury & Zimmerman, 2010).

In addition to understanding their new role as teacher, novices often express concerns regarding low opportunities for socialization, demands to perform like veteran teachers, and a lack of ongoing formative assessment (Kestner, 1994; Odell, 1986). While concerns of being compared to expert teachers around them, they do not feel that they have the formal structures and administrative feedback necessary to support their professional growth needs. In a study by McDonnough and Henschel (2015), novice teachers reported instances when their veteran counterparts were not welcoming. This was sometimes exacerbated by the age gap between the new teachers and their colleagues. Through participation in this induction program, the teachers felt they were granted the opportunity to get substantive feedback, improve reflective practice, and socialize with peers in similar working situations. This is critical when many of these teachers reported receiving little to no formal observations from administration (Henschel & McDonnough, 2015).

In addition, novice teachers are frequently assigned to challenging teaching situations and need opportunities to enhance their teacher competency (Foster, 2004). As the student population continues to grow more diverse, novice teachers continually need to learn strategies to adapt to ever-changing schools. Darling-Hammond and Mclaughlin (1995) reported beginning teachers who participated in teacher induction programs developed positive interpersonal relationships with their students. In addition, Ball and Cohen (1999) found that novice teachers who were given ample learning opportunities, such as induction, used appropriate strategies to meet the needs of diverse populations. By applying learning theories into their practice, these teachers

were able to confront classroom challenges relating to the personal, cultural, and academic needs of diverse students (Byrnes & Kiger, 1996; Foster, 2004; Stroot et al., 1999).

Induction programs were developed to not only support new teachers, but to also keep them in the classroom. Smith and Ingersoll (2004) examined a variety of induction supports and their effects on teacher retention. Using the 1999-2000 Schools and Staffing Survey, they found beginning teachers who participated in induction activities were less likely to move to other schools or leave the teaching profession after their first year. Further, teachers who were provided opportunities to participate in more than one induction activity at a time, such as mentoring and collaborative practices, were more likely to remain teaching (Ingersoll & Smith, 2004). Unfortunately, not all induction programs are systematically designed with structured components, implementation, and objectives.

Types of Teacher Induction Programs

Since the mid-1980's, induction programs have developed into common practice for many novice teachers. Despite the nationwide increase of participation, the setting, types of support, quality, and frequency of formal induction programs vary. Individual schools, school districts, and university-based teacher education programs provide differing sites for the management and supervision of such programs. Currently, most induction programs are run by districts or schools, which are typically independent programs that cannot provide external supports (Brady et al., 2011). Conversely, few programs are based out of university teacher preparation programs (Hunt, 2014). The context of the induction program often influences the purpose and structure of the meetings.

School or District-Based Induction. The most frequently studied setting for induction occurs within the individual school or school district. In a recent study, Feiman-Nemser (2012) recommends four overarching goals for school-based induction. These goals include: (1) a reduction in teacher isolation; (2) integration into the school community; (3) the promotion of effective teaching and learning for all students; (4) and a reduction in the achievement gap. These objectives can be linked to teacher outcomes using a variety of induction activities.

Richard Ingersoll (2012) examined the responses from 3,235 novice teachers, to determine the most common induction activities. During the 2007-2008 school year, regular communication with principals, administrators, or their department chair was the most frequent induction activity reported by teachers. In the same study, 81% of teachers indicated support or guidance from a mentor as the second most common activity. Other collective responses included common planning time with other content-specific colleagues and novice teacher seminars. Additionally, the beginning teachers were often exposed to increased workloads, more class preparations, and fewer teacher aids. Findings also showed that various types of induction rarely occurred alone. Furthermore, as the number of induction components increased the likelihood of teacher attrition decreased.

Unfortunately, most school-based induction programs have no curriculum and are often composed of “discrete and disconnected events” (Feiman-Nemser, 2001, p.1049). While some induction programs only meet during a single orientation at the beginning of the school year, others are multi-year programs that offer a wider range of assistance opportunities (Kapadia et al., 2007). Research suggests that programs involving longer, more intense, and more in-depth support to beginning teachers are more effective (Ingersoll & Strong, 2011). Although there is evidence of increased retention and improved teaching practices for those in highly-intensive

induction programs, there are only a small number of teachers who actually participate in such well-structured and high-quality programs (Feiman-Nemser, 2012; Kapadia et al., 2007; Smith & Finch, 2010).

Another problem faced by school-based induction programs is the intimate contextual setting. Often times, beginning teachers are paired with more experienced teachers or school officials as part of induction. Brock (1998) found teachers who participate in school-based induction worry about school administration serving as their mentor. In this model, teachers feared that administrators would use personal input or private conversations against them when it came time for evaluations. As a result, some induction programs are moving away from schools and districts and into a more neutral setting.

University-Based Induction. There is less research examining the benefits and drawbacks of university-based induction. According Hunt (2014), the extension of university support into the first few years of teaching provides a basis for designing ongoing professional development that addresses teachers' learning needs. Unfortunately, there is little evidence of common practice or the use of a strong conceptual framework within such programs. Therefore, specific recommendations for university-based goals or activities are less prevalent.

In 2014, Van Zandt Allen conducted a week-long Summer Curriculum Writing Institute (SCWI) designed to support novice teachers during their first two years of teaching. The goals of this university-based program included: (1) curriculum writing support; (2) teacher efficacy; (3) connectedness; and (4) retention. In another study, Stanulis, Burrill, and Ames (2007) used an advisory board of recent program graduates, veteran teachers, and administration to develop their university-based program goals. The program was intended to provide beginning teachers with skills in: (1) managing classroom activities; (2) establishing classroom norms; (3) student

knowledge; (4) family and community interactions; (5) subject-matter knowledge; (6) curriculum trajectory across grade levels; (7) assessment; (8) decision-making capabilities; and (9) developing teacher leaders. Although university-based induction programs include theories and practices linked to teacher success (Luft & Patterson, 2002), these studies often cater their goals to context or content-specific activities rather than universal practices.

Although university-based induction programs are evolving with the waves of induction, it can be bounded by its context. A drawback to university-based models might include disconnects to individual school contexts. Although teachers may feel safer sharing more personal information without the fear of repercussions (Fresko & Nasser-Abu Alhija, 2014), many teachers might get misguided advice or insights due to the lack of institutional knowledge. Regardless of induction meeting context, it is important to have structured objectives to build skills and knowledge for successful teaching.

Goals of Teacher Induction Programs

Induction goals have evolved to adapt to changing teacher needs. Initially, induction was intended to help ease the transition from pre-service to in-service teaching. It became important that new teachers were introduced to the essential requirements and expectations of their new position (Bloom, 2014). Additionally, induction programs offered emotional support to address problems faced by beginning teachers (Feiman-Nemser, 2012). As induction transitioned into the second phase, a professional development model, the goals shifted to include teacher development (Feiman-Nemser, 2012). This phase included goals such as: (1) improving teacher performance; (2) increasing high-quality teacher retention; (3) promoting the personal and professional well-being of beginning teachers; (4) satisfying the requirements for induction; and (5) acculturation into the school (Stansbury & Zimmerman, 2010; Wood & Stanulis, 2009).

Mentoring, administrative support, and observations were also introduced during this phase of induction (Bloom, 2014; Feiman-Nemser, 2012).

In the current phase of induction, program goals still vary considerably. Some programs are interested in acculturating new teachers into their schools, while others are designed to improve instructional practice (Kapadia et al., 2007). Regardless of setting or type of program, retention remains a major goal for many induction programs (e.g., Bang, Kern, Luft, & Roehrig, 2007; Carr & Evans, 2006; Gaikhorst, Beishuizen, Korstjens, & Volman, 2014; Hutchison, 2012; Long et al., 2012). Other commonly reported induction goals include: (1) improved teacher effectiveness and efficacy (Bang & Luft, 2014; Gaikhorst et al., 2014; Long et al., 2012); (2) socialization support (Wood & Stanulis, 2009); (3) personal and professional well-being (Stansbury & Zimmerman, 2010; Wood & Stanulis, 2009); and (4) improved instructional competency and reflective practice (Luft & Patterson, 2002; McFadden, Ellis, Anwar, & Roehrig, 2014). Some program variations are intentional so different models can be studied, such as the California New Teacher Program (Olebe, 2001), while others are tied to funding deficiencies (Feiman-Nemser et al., 1999). Regardless of the location or structure of the induction program, researchers must continue to examine different components of induction to determine which are most effective at supporting and retaining beginning teachers.

Recently, some induction programs have incorporated professional learning communities to provide systematic structures to their program. A successful learning community has clear goals, promotes a safe and trusting environment, allows for constructive collaboration between its members, and emphasizes reflective dialogue (Borko, 2004; Lieberman & Pointer Mace, 2008; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). It is a promising framework to promote retention, enhance teacher effectiveness, and improve student learning.

Conceptual Framework: Professional Learning Communities (PLC)

Teachers constantly have to modify their classroom practices to adapt to changing student demographics and the ever-changing reform movements centered on student learning. This requires a great deal of learning on the part of the teacher and can be difficult to achieve without support and guidance. Further, teachers mostly work out of sight of others, which provides little opportunity to confer with fellow colleagues about instructional practices (Feiman-Nemser, 2001; Ingersoll, 2012; Weiss & Weiss, 1999). As a result, educational scholars and policy-makers have increased the demand for professional development opportunities to help teachers develop instructional knowledge (Borko, 2004). Professional development is traditionally offered in two forms: (1) mandated staff development sponsored by the school district or (2) university courses offered as part of a graduate degree (Feiman-Nemser, 2001). Although well intended, most teachers view professional development opportunities as sporadic, disconnected, irrelevant to real classroom work, and lacking any follow-up (Feiman-Nemser, 2001; Lieberman & Pointer Mace, 2008). According to Markow and Horowitz (2003), only 42% of teachers felt their administration provided adequate professional development opportunities. Most professional development is not sufficient, but there is now evidence that teachers learn best when they are members of a learning community (Borko, 2004; Lieberman & Pointer Mace, 2008).

Professional Learning Communities (PLCs) provide teachers with the opportunity to think with others and reflect on their teaching within their individual context. Although there is no universal definition for PLCs, many agree that they involve a group of people sharing and critically examining their practice in an ongoing, reflective, collaborative, and learning-oriented manner (Stoll et al., 2006). According to Dufour (2004), a PLC is any imaginable combination of

individuals with an interest in education. For the professional learning community to effectively work, the participants must properly identify with three “big ideas.” The first fundamental piece of a PLC is that instruction is not ensuring that students are taught; but rather, teachers should confirm that students learn. The teachers in this model learn how to commit to teaching all students and recognize when students do not learn. According to Dufour’s (2004) second component, teachers must appreciate the culture of collaboration. The PLC focuses on working with other professionals to analyze and improve their classroom practice. For the final “big idea,” teachers must be able to effectively gauge student learning through assessments. This constant cycle of classroom practice, data collection, analysis of data, and collaboration with colleagues allows teachers to focus on students as a unit of action (Henschel & McDonnough, 2015).

By nature, PLCs encourage ongoing professional development for teachers by providing allotted time to gather and share experiences to collaboratively deal with issues in the classroom or in the school. This model represents a social process in which teachers learn and get support from others. In this setting, teachers are allowed to openly discuss problems, learn and collaborate with colleagues, ask for or provide help, link practice to theory, and build self-confidence (Fresko & Nasser-Abu Alhija, 2014). An integral part of these communities is to establish trust and mutual respect of one another. All teachers will encounter some difficulties with teaching, so they need the opportunity to think with others in a safe and non-judgmental environment. By establishing a learning community outside of school, teachers are able to share, reflect, and support one another without the fear of evaluation. In their study, Fresko and Nasser-Abu Alhija (2014) found that PLCs taking place out of school and in a familiar environment were perceived as safe havens in which teachers could express their feelings and frustrations. This sense of security built teacher confidence (Fresko & Nasser-Abu Alhija, 2014). Similarly,

Herrington, Herrington, Kervin, and Ferry (2006) found this setting boosts the knowledge of teachers, establishes a sense of efficacy, and leads to their empowerment.

The makeup of teachers participating in the PLC can be either heterogeneous or homogeneous based on grade level, subject, school type, and/or school district. According to Fresko and Nasser-Abu Alhija (2014), there is not an ideal configuration. Having a homogeneous group enables teachers with similar experiences to engage in more relevant and useful discussions pertaining to their individual contexts. Inversely, diverse group members can provide honest feedback and advice because they are not competing with each other over apparent content knowledge (Meyer, 2002). Further, they are easily able to share sensitive information such as interactions with parents, professional conduct, ethical dilemmas, and individual students.

Regardless of the group makeup, a facilitator is key to PLCs because they must possess skills essential for working with all group dynamics. According to Green (2002), groups can become “dangerous places” if the facilitator is not skilled in managing different group dynamics. The facilitator must promote reflection, coordinate group activities, manage social interactions, and know how to proceed with group discussions (Fresko & Nasser-Abu Alhija, 2014; Manning, Cronin, Monaghan, & Rawlings-Anderson, 2009). If discussions are not managed properly, PLC participants might be less likely to speak in front of the group or conversation dominance might occur. This is especially true for larger groups (Manning et al., 2009). The facilitator must be non-judgmental and respectful of differing views for masterful reflection groups.

McDonnough and Henschel (2015) highlighted the importance of protocols to guide interactions in PLC-based induction. Data from session debriefs and a focus group revealed that teachers greatly benefit from the use of structured protocols. They found the meeting structure to

stimulate productive conversations that moved towards constructive resolutions. McDonnough and Henschel (2015) also found the protocols encouraged reflective thinking. Similar to other PLC studies that advocate for reflective practice (e.g., Stoll et al., 2006), the protocols structured specific time for the teachers to share thoughts, ask clarifying questions, and brainstorm ideas, which instilled skills for deeper thinking about the problems at hand.

Although PLC-based induction has recently been studied (Fresko & Nasser-Abu Alhija, 2014; Hunter, Rossi, Tinning, Flanagan, & Macdonald, 2011; Hutchison & Colwell, 2012; Lovett & Cameron, 2011; Taranto, 2011), there is currently little evidence of how school context or student demographics might impact PLC-based induction experiences. In a 2014 study, Stearns and colleagues examined the relationship between PLCs, teacher demographics, teacher-student racial mismatch, and job satisfaction. Their results indicate White teachers typically reported less satisfaction than African American or Latino teachers when teaching in a high-minority school. However, they found PLCs to moderate the negative impacts of student-teacher mismatch on White teachers' job satisfaction. Therefore, the current study explored beginning teacher experiences with PLC-based induction when employed in high-minority and high-poverty schools. Specifically, the researcher sought to understand new teachers' intentions to continue teaching in high need schools when given PLC-based induction support using varying delivery methods.

Review of Face-to-Face and Virtual Professional Learning Communities

Today's newest teachers are considered the first generation to grow up with everyday access to technology (Taranto, 2011). In the late 1990s, most educational and communication resources involved the first-generation web or "Web 1.0." This era of technology was almost exclusively an arrangement of websites controlled by a small group of providers (Cormode &

Krishnamurthy, 2008). The common user could browse, read, or share text-based online forums, but only individuals with programming knowledge could post content (Cormode & Krishnamurthy, 2008). As a result, the web did not have the means to support a successful professional learning community. At this time, all learning communities required face-to-face interactions with the teacher and his or her peers.

Recently, technology has evolved to include interactive experiences for users. “Web 2.0,” originally coined in 2004, refers to the creation of the second-generation of web services (Peltier-Davis, 2009). According to Greenhow, Robelia, and Hughes (2009), this new technological platform includes: (1) social networks (e.g., Facebook, YouTube, Flickr); (2) collaborative knowledge development through wikis (e.g., Wikipedia); (3) creative works (e.g., podcasts, blogs, Twitter); and (4) content aggregation and organization (e.g., RSS feeds). By nature, Web 2.0 promotes collaboration and sharing among users in an interactive, two-way web. As a result of the real world and digital world merging through interactive experiences, physical boundaries are no longer an obstacle when interacting with others (Taranto, 2011). Therefore, digital learning lends itself to new teacher induction programs and the investigation of online professional development (Jones & Preece, 2006).

Face-to-Face Teacher Induction PLCs

Traditionally, professional learning communities have emphasized the use of in-person interactions to maximize success in the work environment (Fresko & Nasser-Abu Alhija, 2014; McDonnough & Henschel, 2015; O’Malley, 2010; Wellington, 2001). One of the largest components of face-to-face communication is the establishment of trust. Teachers who hold in-person conversations with peers gain mutual respect for one another, establish a sense of trust, and obtain appreciation for their colleagues (O’Malley, 2010). This builds a non-threatening

environment in which the teachers feel safe to seek out support and guidance. Fresko and Nasser-Abu Alhija (2014) highlight the importance of holding face-to-face interactions with new teachers outside of the school context, but in a familiar place, to enhance the sense of security. Face-to-face interactions promote open conversations and are often the preferred method of delivery because they provide a more personal experience. Schuck (2003) found teachers preferred face-to-face interactions to online portals because they provided a more personal experience. Therefore, researchers believe that it is only practical to replace face-to-face interactions with online communication when professional community opportunities would otherwise not exist (Rhodes, 2004; Single & Single, 2005).

Advantages. There are many advantages associated with face-to-face communication. Single and Single (2005) found that teachers who participated in face-to-face interactions showed better information transfer, psychosocial benefits, personalized attention, and educational advice. In addition, a professional network that offers in-person support is likely to increase teacher retention, encourage reflection, and enhance teacher growth (Schuck, 2003). Another benefit to face-to-face interactions is the absence of technological issues interfering with communication. Wilson and Whitelock (1998) found that satisfactory learning was contingent on the immediate accessibility of information, assistance, and feedback. When this is interrupted by technological problems, the learning process is disrupted and participants can become frustrated.

The “physical proximity argument” (Asheim, Coenen, & Vang, 2007, p. 659) states that the transfer of knowledge is most likely to occur when the context allows for multidimensional communication. This multifaceted component refers to the ability to observe, touch, and listen all at once, which allows one to gain a more holistic interpretation of the discussion (Storper & Venables, 2004). Additionally, there is interference with informational transfer of emotions,

attitudes, and characteristics when nonverbal communication is absent. According to Walther, Loh, and Granka (2005), this results in “less sociable, relational, understandable, and/or effective communication” (p.37). This also lends itself to higher occurrences of message misinterpretation (Thang, Hall, Murugaiah, & Azman, 2011).

Disadvantages. Face-to-face learning communities are not without their problems. There can be limits when professional learning communities are bounded by locality. First, close geographical proximity can be a challenge for some professional learning communities, especially for university-based programs whose graduates can get jobs anywhere across the nation. Second, there is an increased likelihood of subject or grade level variance when bounded by location. Although differing content-areas can allow for diverse perspectives and constructive conversations, teachers often benefit from having interactions with teachers within the same context. When teachers are connected with others in the same subject, they are able to share experiences, lessons, and resources with others in similar environments (Thorson, 2002). Lastly, time is a scarce and valuable commodity for many novice teachers. Face-to-face interactions require travel time, which is minimalized or nonexistent with online discussions (Baleni, 2011).

Virtual Professional Learning Community

Due to geographic locations, not all teachers have the same level of access to schools, colleges, or training providers (Higham, Haynes, Wragg, & Yeomans, 2004). To better meet the needs of all new teachers and to promote ongoing teacher interactions, some induction programs have shifted towards online (DeWert, Babinski, & Jones, 2003) or mixed-delivery methods (Schuck, 2003). With the development of Web 2.0, induction programs have the potential to engage and support teachers in new and innovative ways that might not be accomplished through traditional face-to-face models (Hutchison & Colwell, 2012).

Prior to Web 2.0, beginning teachers did not always have adequate tools to promote communication and alleviate feelings of loneliness. Increased accessibility to the Internet provides beginning teachers a chance to obtain appropriate tools and services through ongoing communication and support (Bransford, Brown, & Cocking, 2000). Further, the convenience of Web 2.0's "anytime, anywhere" environment allows teachers to cultivate personalized learning networks (Greenhow et al., 2009). Online induction programs can now focus on the quality and quantity of the interactions rather than physical proximity. Paulus and Scherff (2008) found that online communities provide beginning teachers with a platform to seek support, discuss matters they are not comfortable discussing within their schools, and discuss their frustrations or concerns with peers. Even if part of the program includes face-to-face interactions, adding an online component might be beneficial to beginning teachers. Schuck (2003) found that having online supports, such as email interactions, in between in-person meetings helped teachers develop new insights into their practice and allowed teachers to more deeply engage in the induction process.

Dalgarno and Colgan (2007) proposed three essential features necessary for effective online communications. First, professional community members need to feel connected to the group. A facilitator can establish this through effective leadership that models loyalty and respect. Second, the facilitator should keep constant contact with all members of the online community. And finally, the online forum should be created at the grassroots level and it should grow based on personal connections. The constant evolution of the program allows ownership and personal efficacy towards the program (Dalgarno & Colgan, 2007).

Advantages. The literature notes several advantages to online communities, some of which incorporate the same benefits as face-to-face interactions. For instance, Luft and colleagues (2011) found all beginning teachers participating in science-specific induction strengthened their pedagogical content knowledge (PCK) and instructional practices regardless of program delivery.

Specific advantages of online communities expressed by new teachers include: (1) overcoming isolation through engagement of shared experiences and resources; (2) ongoing support; (3) the establishment of a safe environment; and (4) sharing tools for professional discourse (Dalgarno & Colgan, 2007). Increased self-esteem, improved confidence, and subject-matter transfer opportunities were also associated with electronic communications (Single & Single, 2005). According to Dalgarno and Colgan (2007), virtual communities can help teachers learn new skills and approaches when utilizing these key features:

Meeting the needs of community members; being led by a qualified facilitator who gets involved with teacher needs; ensuring a connection to teachers' practices; nurturing a community of practice; providing mechanisms for reflection; discouraging isolation; ensuring activities are research-based; accessing exemplary resources; acquiring personal efficacy from the experience; and learning over time (p. 1056).

Research provides evidence that teachers feel less isolated when they are able to communicate with others outside of their immediate location (Maxwell, Harrington, & Smith, 2010; Zhao & Rop, 2001). In addition, the online community allows teachers to reflect on their practice at times that best suited them. Zhao and Rop (2001) argue that the written aspect of online interactions evokes more thoughtful reflection because it gives teachers time to formulate and express their views. The "on demand" responses found in face-to-face situations can rush

this process (Gareis & Nussbaum-Beach, 2007). Furthermore, the written correspondences allow users to track conversations over time. This provides a record of the interaction, which facilitates the learning process (Billingsley, Griffin, Smith, Kamman, & Israel, 2009; Mueller, 2004).

Digital convenience allows teachers to easily access an online professional community from home, school, and anywhere from cell phones. This online collaborative opportunity encourages teachers to deepen their professional knowledge, provide support to one another, and engage in constructive and professional dialog (Hutchison & Colwell, 2012). DeWert and colleagues (2003) conducted a small-scale study examining beginning teachers experiences with an online support community. They found evidence proposing online communities are an effective way to provide “social, emotional, practice, and professional support to beginning teachers” (p. 319). The teachers participating in the virtual space improved their problem-solving skills while resolving many problematic concerns. Moreover, teachers reported a decrease in feelings of isolation, an increase in teacher-related confidence, more excitement for work, increased reflection, and improved critical-thinking skills.

Disadvantages. Not all outcomes relating to virtual learning communities have been positive. Thorson (2002) highlighted some major challenges of online professional development. First, online communities can experience the same difficulties as face-to-face environments, especially if not correctly monitored by a facilitator. Schlager, Fusco, and Schank (2002) found inadequately trained facilitators could lead online activities with technological gaps and limitations. According to Thorson (2002), a second problem that could interfere with a successful online community is low-levels of teacher technological competence. Jordan (2011) found new teachers to have a limited view of online discussion and pedagogical knowledge, which is necessary when interacting in an online professional community. Finally, Thorson

(2002) warns of the possibility of teacher isolation when employing online professional development. Although online communities provide the platform for communication across any distance, teachers reported feelings of loneliness and lack of support.

Thorson (2002) argues that electronic learning opportunities should be held to the same standards as face-to-face learning in order to achieve a comprehensive program of professional learning. According to Ridout (2006), technology requires individuals to rethink traditional people-to-people interactions. Nonverbal communication, which often carries more weight than verbal cues, can be eliminated during online interactions. Segall (2000) states that the absence of nonverbal communication may provide an incomplete picture of the problem at hand. This is especially a problem for virtual professional communities as the absence of nonverbal cues may lead to a higher rate of inappropriate recommendations or solutions. If the method of communication is by email, messages can easily become misinterpreted without the presence of body language and tone of voice (Ridout, 2006). Electronic communications have fewer reinforcements that encourage strong relationships (Sproull & Kiesler, 1992). Therefore, it becomes easy to ignore email messages or follow through with program commitments. Burke and Kraut (2008) found that face-to-face and telephone interactions developed better social relationships among group members than using email. Further, the online conversations often contained more negative politeness strategies (e.g., indirect communication, pessimistic, impersonalize members), which can hinder development of a positive support structure intended by professional communities.

Finally, Schlager and colleagues (2002) found that online communities often fail due to the misalignment of online design and teacher needs. Although Hutchison and Colwell (2012) found teachers' online posts to be insightful and reflective, the teachers in the study wanted more

interactions with others. Individual interviews revealed that the teachers felt unsupported and felt the online posts were impersonal. Overall, the teachers did not feel like the online posts were beneficial (Hutchison & Colwell, 2012). Research suggests that online learning communities can support collaboration on some levels, but it is best paired with face-to-face meetings for teachers to feel supported (Hutchison & Colwell, 2012; Sheehy, 2008).

Summary

The immigration Act of 1965 forever changed the demographic makeup of the United States. As a result of this act and subsequent immigration policies, populations of younger, non-Hispanic White immigrants are increasing. This is drastically changing the face of American schools. For instance, 2014 became the first year where public K-12 classrooms were expected to house more Latino, African-American, and Asian students than non-Hispanic Whites (NCES, 2013). This demographic shift has broad implications for U.S. schools as research clearly documents challenges related to preparing, recruiting, and retaining effective teachers in high-minority schools (Allensworth et al., 2009; Hanushek et al., 2004a; Ronfeldt et al., 2013). Teacher turnover rates are especially high in under-resourced, high-minority, and urban schools (Adamson & Darling-Hammond, 2012). These school systems often exhibit negative working environments associated with increased job dissatisfaction (Quartz et al., 2008). Moreover, these schools also have greater teacher-student racial mismatches than their Whiter and wealthier counterparts.

Many teachers work within the confines of their own classroom; therefore, many teachers receive little support or guidance from their colleagues throughout the school day. There is evidence that teacher turnover rates decrease when beginning teachers are provided assistance during their first few years of teaching, especially in high need schools. Unfortunately, these

support systems, known as induction, often vary in length, frequency, and types of support depending on state, district, and school (Ingersoll, 2012; Johnson & Kardos, 2005). Regardless of program characteristics, the current era of induction focuses on building teacher skills and knowledge to increase the quality of learning for all students. Many induction programs use a collaborative professional community to integrate beginning teachers into their new role (McDonnough & Henschel, 2015; O'Malley, 2010; Saka et al., 2009). Traditionally, these professional communities used in-person interactions to maximize success in the classroom (Fresko & Nasser-Abu Alhija, 2014; McDonnough & Henschel, 2015; O'Malley, 2010; Wellington, 2001). However, not all teachers have the same level of access to schools, colleges, or training providers (Higham, Haynes, Wragg, & Yeomans, 2004). As a result of increasing accessibility to the Internet, virtual professional communities have emerged.

This study sought to understand teachers from high need schools experience with university-based PLC induction including the value of these programs, types of program supports, and their intentions to remain in the profession. Since there are advantages and disadvantages to both face-to-face and virtual communities in the literature, this study also explores the teachers' experience with method of delivery when the programs are similar at two universities.

Chapter 3: Methodology

This research used a multiple-site case study design to explore beginning teachers' experiences with university-based PLC induction. The intent of this study was, in part, to examine the connection between induction support and teachers' decisions to stay or leave high need schools when using different methods of program delivery. The multiple-site case study design was informed by Creswell (2013) and Yin (2014). Program descriptions, which include treatment fidelity and sampling techniques, are described to provide a greater understanding of the study design. Qualitative research methodology and questions guided this study's data collection and analysis procedures. Interview data was triangulated with survey and focus group data to provide supplemental support for the findings. A discussion of credibility and dependability conclude the chapter with reference to the role of the researcher and inter-coding strategies.

Purpose of the Study

The purpose of this multiple-site case study was to explore beginning teachers' experiences with university-based PLC induction. Specifically, this study sought to understand beginning teachers from high need schools perceptions of program supports and if participation in induction influenced beginning teachers' intentions to stay or prematurely leave the profession. Lastly, this study examined teachers' involvement in two university-based PLC induction models that implemented similar program procedures and activities using either face-to-face or online delivery. By understanding how different methods of delivery affect beginning teachers' experiences with induction, future programs can evolve to address these issues regardless of model implementation.

Research Questions

Using mainly interview transcripts, this study was guided by an overarching question and additional sub-questions:

1. What experiences do beginning teachers from high need schools have with university-based PLC induction?
 - a. How do beginning teachers from high need schools perceive induction support?
 - b. How does PLC-based induction influence teachers' intentions to stay or leave high need schools?
 - c. What are teachers' experiences with face-to-face or online delivery of induction?

Qualitative Methods Approach

Qualitative methodology uses personal and complex processes to learn how people know what they know (Creswell, 2013). By gathering qualitative data that is rich in description and

provides personal insights into the realities of novice teachers employed in high need schools and involved in induction programs, the researcher can better comprehend the participants' understanding of those environments. Using qualitative methods, the approach to both data collection and analysis can be layered to more deeply understand the phenomenon (Patton, 2002).

A multiple-site case study design, comparing two university-based induction programs, was used for this study. Unlike single-site case studies, multiple-site case studies are comparative in nature (Yin, 2014). For instance, single-site case studies reflect unique characteristics within one context; however, multiple-site case studies allow the researcher to examine specific questions or problems in multiple contexts (Creswell, 2013). Using multiple sites is regarded as more robust than single site designs (Yin, 2014). For the current study, two Noyce induction programs served as study sites, with individual teachers at each site serving as cases.

When studying multiple-sites, Yin (2014) suggests researchers describe the “logic of replication” within their design. By replicating the exact same procedures at each site or altering one or two experimental conditions, researchers are able to determine whether certain features of the study are important. In the present study, both sites were selected based on their similar features. The program activities were implemented similarly with the primary difference being method of program delivery (i.e., face-to-face vs. online). This replication of induction practices across multiple contexts allowed the researcher to study any contrasting results based on program differences (Yin, 2014).

Adapted from Yin (2014), Figure 1 represents the procedures used in multiple-site case studies. To begin, the case study must consist of a design theory. For the current study, a professional learning community model guided the design of the programs. Next, the selection of sites and measures were an important part of the study's design and are discussed in greater

detail later in this chapter. Following the design, data collection occurred for each individual case or participant within the two university sites. Semi-structured interviews were performed with beginning teachers participating in the induction programs. Summaries from all of the individual interview cases and summaries by program sites were the primary focus of the study's results. The individual cases indicated how each teacher experienced induction. Across sites, the report indicates any similarities or differences pertaining to induction experiences based on program delivery. An important feature of this figure is the dashed-line feedback loop. This loop represents important discoveries from an individual case study that may require the researcher to reconsider one or more of the study's theoretical positions (Yin, 2014). In the current study, adjustments to the interview protocol occurred after review from content experts and pilot interviews. This reiterative feedback process helped reduce biases associated with qualitative research.

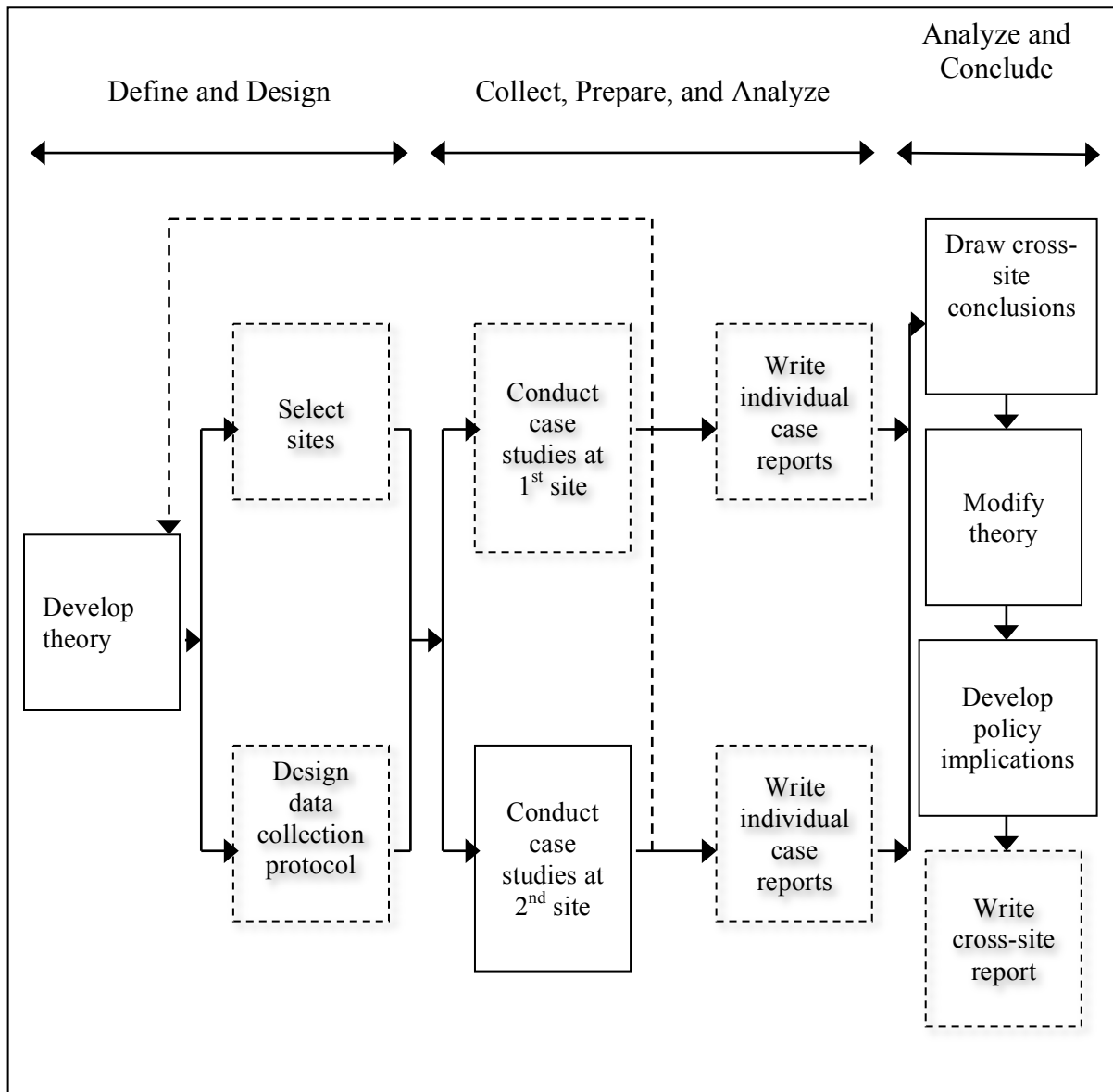


Figure 1. *Multiple-Site Case Study Procedure*

Note: Yin, R. K. (2014). *Case Study Research: Design and Methods* (5th ed.). Thousand Oaks, CA: SAGE.

Program Descriptions

At both university study sites, the Robert Noyce scholarship programs were developed to provide pre-service science and mathematics teachers with a rich conceptual understanding of the research, theory, and practice behind effective teaching in high need schools. The Noyce

program also includes an induction component, where upon acquiring their degree and obtaining teaching licensure, all Noyce scholars were invited to participate in monthly induction meetings. During the first two years of teaching, these meetings emphasized the development of a professional learning community (PLC) with peers in similar high need school contexts and who completed the same educational training. Participation was voluntary and was offered to teachers at high need schools during their first two years of teaching.

Researchers at each study site facilitated the monthly Noyce induction meetings. The induction programs operated from September to May during the 2015 - 2016 academic year, totaling eight sessions for each program. The first seven sessions at Univ-A and the first six sessions at Univ-B provided opportunities for participating teachers to share successful lessons, practice problem-solving techniques, and, during the first session, develop meeting norms to follow throughout the year. Additionally, a guest speaker, who was an autism expert, presented during the third session at each university. The guest speaker conducted an interactive session with both university-based induction programs. The seventh session at Univ-B was a question and answer panel with pre-service teachers and was omitted from this study. The eighth session, held in May 2016, was a focus group where teachers were asked to share their views and experiences of the Noyce induction program. Each induction session was approximately 90 minutes in length and was guided by a facilitator trained in McDonald et al. (2007) protocols.

Table 1 represents an overview of both programs' structure and components. This table represents the similarities and differences between the program implementation.

Table 1. *A Comparison of Induction Program Structures and Components*

Program Structure and Components	University A	University B
Structure		
Number of Eligible Teachers	12	11
Type of Teacher	1 st and 2 nd year math and science	1 st and 2 nd year math and science
Date of Meeting	The 2 nd Monday of every month	The 2 nd Wednesday or Thursday of every month
Months of operation	September 2015 – May 2016	September 2015 – May 2016
Length	90 minutes	90 minutes
Compensation	\$50.00 per meeting (\$400 total)	\$3,000.00 (Teachers must attend all meetings for full compensation)
Dinner Provided	Yes	No
Method of Delivery	On-site Campus location	WebEx
Recorded Procedures	Video-recorded	Video-recorded
Components		
Total sessions	8	8
Facilitator	3-years experience; Study Researcher	2-years experience; Program coordinator
McDonald et al. (2007) Protocols	Norm Setting; Descriptive Consultancy; Success Analysis	Norm Setting; Descriptive Consultancy; Success Analysis
Guest Speaker	Autism Specialist	Autism Specialist
Focus Group	Yes (May 2016)	Yes (May 2016)
Survey	Yes (August 2015; December 2015; May 2016)	Yes (August 2015; December 2015; May 2016)

These sites were purposefully sampled based on convenience and differences in program delivery. These sites have a history of working together regarding Noyce pre-service education and placement experiences (Goff et al., 2014; Matkins et al., 2014). For the first time, both university-based Noyce induction programs intended to implement similar activities during the 2015 – 2016 academic year. This recent change lends itself to comparative research and created a unique opportunity to examine the impact of delivery mode.

Implementation Rubrics

As part of this study, it was essential to document the implementation of both programs in order to make an assessment about the consistency of implementation or implementation fidelity. This allowed the researcher to assess any true programmatic differences resulting from program delivery. By examining the fidelity of implementation, researchers could identify whether or not and to what degree the programs were implemented as planned (O'Donnell, 2008). Given that this study involved multiple sites, there was a possibility that these programs could demonstrate some implementation differences resulting from disparities in facilitation or unique situations within the site contexts. Using implementation rubrics as an assessment tool, the researcher gained insights into the nature of any differences and why these disparities may contribute to program success or failure at each university (Dusenbury, Brannigan, Falco, & Hansen, 2003).

To assist with credibility, guiding PowerPoints were constructed to lead all session activities at both study sites. All activities, except guest lectures and focus groups, used McDonald et al. (2007) protocols. The use of protocols, with explicit steps, provided evidence that specific implementation tasks were being executed during every session at each university (Weaver, 2010). The guest speaker was required to present the same material to both programs,

with the only variation being context-specific discussions driven by individual teacher needs. Additionally, the researcher attended both university induction sessions when her schedule allowed. Any facilitation differences were noted and discussed with Unvi-B's facilitator before the subsequent meeting. These observations and debriefings helped ensure that implementation at each university was disseminated according to the guidelines outlined in McDonald et al. (2007). All program sessions for both university sites were recorded. These video recordings were coded and analyzed for any implementation discrepancies.

To examine implementation fidelity as a context for answering the research questions, the researcher developed implementation rubrics (see Appendix A) for each protocol used during the sessions. Using a rating scale of 0-3 (0 = not at all, 1 = partially, 2 = mostly, and 3 = fully), each video was analyzed for presence of the protocol step and duration. Once the protocol was complete, scores were summed and divided by the total possible score to receive a total implementation score up to 100.00%. Total implementation scores for each university's monthly induction sessions were compared for differences in scores. Additionally, the researcher recorded any observational notes that might be relevant to the study such as quality of delivery, participant responsiveness, or program differentiation. These rubrics and notes were used as evidence of treatment fidelity and help reduce researcher biases. Any insights, experiences, or challenges of the program delivery were recorded and reported.

Treatment Fidelity

Since two sites were recruited for this study, the researcher examined treatment fidelity by scoring each protocol for the 2015 – 2016 academic year using implementation rubrics. After peer debriefing with an expert researcher, overall fidelity scores and ranges were calculated for each university. Using these scores, program adherence (i.e., low, medium, or high) for each

session was reported to describe the implementation fidelity for each university. According to (Carroll et al., 2007), implementation fidelity is high when the facilitator adheres to the content, frequency, duration, and coverage prescribed by its designers. In contrast, implementation fidelity is relatively low when approximately one-half of the required time is not being spent on the activities as suggested by the rubric. Additionally, these results highlight the similarities and discrepancies between both programs' implementation.

At the beginning of the year, both universities started the first induction meeting with the Norms Setting protocol (McDonald et al., 2007). According to the rubrics, Univ-A implemented the Norms Setting protocol with extremely high fidelity (see Table 2). Following the rating scale guidelines, the facilitator reviewed each step of the protocol, followed the recommended time, and kept the discussions focused. As seen in Table 4, Univ-B had lower implementation fidelity. Although the facilitator went through each step of the protocol, three of the four steps did not meet the recommended time allocations. Further, teachers were drawing on the screen using WebEx functionalities and background noises from participants' houses caused distractions.

Table 2. *Fidelity Scores for the Norms Setting Protocol*

	Univ-A	Univ-B
September 2015 Fidelity Score	100.00%	41.67%
Overall Fidelity Score	100.00%	41.67%

During two induction sessions (October 2015 and March 2016), both universities implemented the Descriptive Consultancy protocol (McDonald et al., 2007). Univ-A had a moderately high overall fidelity score of 84.83% with a range of 79.17% - 90.48%. For both sessions, the conversations remained focused and the facilitator guided the discussions using each step of the protocol. A few steps of the protocol did not adhere to the predetermined time allocations; therefore, points were deducted from the implementation rating during portions of the meetings. At Univ-B, there was also a moderate, but lower, overall fidelity score of 66.37%

and a range of 61.90% - 70.83%. Similarly to Univ-A, points were deducted from Univ-B when time recommendations were not followed. Further, the facilitator skipped implementation of one step (i.e., response) during one of the sessions, which resulted in a slightly lower score. However, the majority of the protocol steps were fully implemented using the guidelines outlined in the rubric. A final difference between the two programs was the visual display of the protocol steps. Univ-A, which was face-to-face, showed each step using a PowerPoint throughout the meeting. Although screen sharing was a capability of WebEx, the facilitator at Univ-B did not visually display the PowerPoint because she mentioned that she could not see the teachers' faces when she shared the PowerPoint on her screen. Therefore, the implementation may have been influenced by the method of program delivery (i.e., online). Table 3 displays the individual fidelity scores for each descriptive consultancy session during the 2015 – 2016 academic year.

Table 3. *Fidelity Scores for the Descriptive Consultancy Protocol*

	Univ-A	Univ-B
October 2015 Fidelity Score	90.48%	61.90%
March 2016 Fidelity Score	79.17%	70.83%
Overall Fidelity Score	84.83%	66.37%

During the November 2015 meeting, a guest speaker presented information on children with autism and allowed for group discussion about the topic. Overall fidelity adherence for Univ-A and Univ-B were moderate and high, respectively. Table 4 shows the fidelity scores for each university. At Univ-A, the guest speaker was unable to get through her entire PowerPoint during the meeting due to more discussion from the teachers throughout the presentation. She also ended this meeting with a brief discussion. The guest speaker went through her full PowerPoint at Univ-B with fewer interruptions from the teachers. She also had a more individualized and in-depth discussion with the teachers at the conclusion of her presentation.

Overall, there were some differences between implementation (e.g., time and frequency of discussion), but the majority of the same information was delivered to both universities.

Table 4. *Fidelity Scores for the Guest Speaker*

	Univ-A	Univ-B
November 2015 Fidelity Score	79.17%	91.67%
Overall Fidelity Score	79.17%	91.67%

Finally, both universities implemented the Success Analysis protocol (McDonald et al., 2007) often during the 2015 – 2016 academic year. This protocol was administered once during the September 2015, October 2015, December 2015, and March 2016 meetings and twice during the February 2016 meeting. At Univ-A, the overall fidelity adherence was moderately high at 83.33% with a range of 72.22% - 88.89%. The September 2015 session at Univ-A was omitted from analysis because the session was not recorded. Therefore, researchers were unable to code for quality of implementation. During most other meetings at Univ-A, the facilitator implemented the protocol based on the recommended guidelines with the exception of not meeting the time expectations for a few of the steps. In addition, she skipped implementation of one of the steps (i.e., debriefing) during the March 2016 session. The facilitator at Univ-B had lower fidelity adherence with an overall score of 58.34% and a range of 50.00% - 66.67%. One of the largest differences in this program’s implementation regarded the omission or combination of protocol steps. Specifically, the facilitator did not implement step three of the protocol, which was *compilation*. As stated earlier, the facilitator reported challenges when sharing her screen with participants; therefore, she did not visually display the list of positive aspects of each presented lesson. As the year progressed, step 6, *debriefing*, was frequently omitted. However, the Univ-B facilitator maintained focused conversations during most implementations of the successful analysis protocol. Another similarity to Univ-A was the commitment to time

recommendations, with only a few steps not meeting those guidelines. Table 5 illustrates the individual fidelity scores for each Successful Analysis protocol at each university.

Table 5. *Fidelity Scores for the Successful Analysis Protocol*

	Univ-A	Univ-B
September 2015 Fidelity Score	N/A	61.11%
October 2015 Fidelity Score	88.89%	66.67%
December 2015 Fidelity Score	83.33%	55.56%
February 2016 Fidelity Score (1)	83.33%	55.56%
February 2016 Fidelity Score (2)	88.89%	50.00%
March 2016 Fidelity Score	72.22%	61.11%
Overall Fidelity Score	83.33%	58.34%

In conclusion, implementation rubrics indicated that there was slight variation in application of the two programs. Although the two programs implemented the same activities, the analysis showed some differences in the dissemination of protocols. One reason for the differences could be that the facilitator at Univ-A had more experience with the protocols than the facilitator at Univ- B. In addition, execution of the protocols at Univ-B may have been hindered by the method of program delivery. Online program dissemination could make it challenging to share screens and view participants; therefore, the facilitator at Univ-B had to modify or skip steps to adapt to the unique challenges associated with online programming. Nevertheless, it was concluded that the programs were implemented with moderate similarity, mostly resulting from deviation in protocol steps.

Data Collection Methods

For the study, the primary method of data collection was interviews. At the conclusion of the 2015 - 2016 induction year, participating induction teachers were invited to participate in a 90-minute semi-structured interview. Teachers from both university programs were interviewed to understand teachers' realities surrounding induction, especially concerning program support, reasons for staying or leaving the profession, and implementation. This method used language as

the main data source to answer the research questions (Yanow, 2014). The quotes from the interviews helped illuminate the teachers' perceptions of their induction experiences.

Existing data was used to explain and corroborate findings from the interviews. For both of the Robert Noyce scholarship programs at each university, all participating novice teachers completed an online survey about teacher attrition at three time points. This data was housed using REDCap, a secure web application for building and managing online surveys. Lastly, each university held a focus group during the eighth induction session. In the focus group, the researchers asked participating teachers about their experiences with the program. This data was provided by the Noyce staff at both universities and was triangulated with interview data during analysis.

Instrumentation

A semi-structured interview protocol was developed to serve the primary needs of the study. The interview protocol was provided to a panel of subject experts for feedback before being piloted and later administered to program participants. This provided evidence of content validity. In addition, implementation rubrics, surveys, and focus group data was collected for later analysis.

Semi-structured Interview

Semi-structured interviews were conducted one-on-one between the participant and the researcher. The interviews aimed to gain understandings of teachers' experiences with induction at each site. Other questions concerning their perceptions of working in high-need and high-minority schools were asked to provide knowledge about school context. Precautions, such as telling participants not to provide specific school or school district names, were in the protocol to keep the identity of these schools and teachers anonymous. In addition, this semi-structured

protocol (see Appendix B) allowed participants to share a set of common core questions, which helped in comparing and contrasting experiences, while also allowing the interviewer and interviewee to modify the interview questions as it developed. Open-ended questions were used to prompt conversations.

For this study, 11 individuals, six teachers from Univ-A and five teachers from Univ-B induction programs, volunteered to participate in the research. Participants were informed of the interview during the March 2016 induction meetings. A follow-up email (see Appendix C) invited teachers to participate in the study. After participants consented to participate (see Appendix D), a 90-minute interview was conducted either in-person or using Skype. Skype is an online software application using spoken conversation, which utilizes a webcam. Skype allowed the researcher to document verbal and nonverbal communication with the participant when in-person interviews could not occur. In-person interviews were preferred and occurred for eight of the interviews; but due to geographical access, Skype was used three times. The interviews were recorded using an audio recorder to ensure more accurate transcription of responses. Pseudonyms were used to protect the confidentiality of the participants.

Expert Panel and Pilot Interviews. After developing an initial version of the interview protocol, a panel of experts was consulted to determine the content validity, accuracy, and wording of the questions. A group of three experts was selected based on their expertise in induction, teacher and student racial-mismatch, and qualitative studies. Each expert was provided with a copy of the proposed study and the interview protocol. They were given three weeks to review the protocol and provide feedback. After considering their recommendations, revisions were made.

The interview protocol was then piloted with three teachers who were representative of the study's population. These teachers were Noyce scholars who participated in either university's induction program prior to the 2015 – 2016 academic year. Two teachers, with science content areas, were from Univ-A and one teacher, with mathematics content knowledge, was from Univ-B. One of the teachers from Univ-A was male and a fourth year teacher whereas the other two teachers were third year teachers and female. The interviews with Univ-A piloted teachers were conducted in the same location as the study's participants. Additionally, the pilot interview with the Univ-B teacher was performed using Skype, which is the same software used in the actual study. These teachers had knowledge of the Noyce induction programs, participated in either face-to-face or online induction formats, and had been or were currently employed in similar working environments as the study's participants.

Modifications to the interview protocol were made based on the piloted data. After the first interview, major changes to term usage and question ordering were made. For example, the use of the term "racial-mismatch" was removed from the protocol and replaced with "what is it like to interact with students from a different race/background than you?" Additionally, verbiage relating to professional learning communities was removed and more general questions about the

development of a community were developed. These changes were the result of participant confusion and feedback from dissertation committee members. After the last two pilot interviews were performed, a final interview protocol was developed based on their feedback and data. The first draft of the protocol had 21 questions with 15 additional sub-questions. The final interview protocol (See Appendix B) had 18 questions with 20 sub-questions. By the end of the pilot, multiple probes had been developed and added to the protocol to facilitate conversation.

Existing Data

The following section describes data that were obtained from each program and were used for triangulation with interview transcripts. The survey and focus group enhanced credibility of study findings by providing additional sources of information to corroborate reoccurring themes or perspectives regarding experiences with induction and intentions of early career attrition.

Teacher Attrition Survey. The modified Teacher Attrition Scale (Cashwell, 2013; Heckman, 2011) was used by both programs to survey all beginning secondary and mathematics teachers participating in the two induction programs (see Appendix E). The survey was divided into three sections. The first section used a 5-point Likert scale (1 = Would not cause you to leave the profession to 5= Would cause you to leave the profession) to rate what factors would cause the teachers to leave the profession. The survey questions in this section were grouped together by six factors commonly known to correlate with teacher attrition (personal factors, working conditions, administrative support, salary, accountability, and teacher preparation) (Heckman, 2011). The next section of the survey asked participants to rate their level of agreement regarding their intent to leave the profession using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The final section asked teachers to rank order the six attrition

factors. The Cronbach alphas for internal consistency in previous studies were .80 or higher for all six factors except personal factors, which ranged between .475 and .64 (Heckman, 2011).

Focus Group. The focus groups occurred during the May 2016 induction sessions. Unvi-A's focus group was held at a university on-site location. The focus group for Univ-B was held using WebEx. The focus groups were 90-minutes in length and consist of a set of pre-selected questions (see Appendix F). All teachers in attendance were encouraged to participate. The main purpose of the focus group was to learn about the teachers' general experiences in a university-based PLC induction program. The program facilitator at each university conducted the focus groups. Each session was audio-recorded and transcribed.

Participants

During the 2015 – 2016 academic year, all 23 beginning teachers at both universities who were involved in the Noyce induction program were invited to participate. Emails were provided to the researcher by both Noyce teams. Teachers were contacted via email to participate in the individual interviews. Table 6 represents participant demographics based on data source. Participant demographics were collected via surveys and university-developed Noyce databases with recipient demographics. All 23 teachers who participated in the induction programs took at least one survey and completed demographic data. Therefore, the survey column (column four) in Table 6 is representative of the entire Noyce Scholars sample. Based on those demographics, the table also shows that interview and focus group participants were similar to the overall participant sample for both induction programs. Finally, the last row of Table 6 represents the response rates for each data source.

Table 6. *Participant Demographics by Data Source*

Demographic	Semi-Structured	Existing Data	
	Interview (<i>n</i> = 11)	Focus Group (<i>n</i> = 12)	Survey (<i>n</i> = 23)
University			
Univ-A	54.5%	66.7%	52.2%
Univ-B	45.5%	33.3%	47.8%
Gender			
Male	27.3%	41.7%	21.7%
Female	72.7%	58.3%	78.3%
Race			
White	100%	91.7%	91.3%
African American	-	8.3%	8.7%
Number of Years Teaching			
First Year	45.5%	58.3%	47.8%
Second Year	54.6%	41.7%	52.2%
Content Area			
Math	27.2%	33.3%	34.8%
Science	63.6%	58.3%	60.9%
Both Math and Science	9.1%	8.3%	4.3%
Participation Rate	47.8%	52.2%	100%

Data Analysis

The purpose of the study was to understand novice teachers' experiences with university-based PLC induction, perceptions of program support, intentions to stay or leave the profession, and their experiences with different program delivery methods. Therefore, data was collected, transcribed, organized, categorized into codes and themes, interpreted, and reported. After collection and audio recorded data was transcribed, the researcher used the software program Atlas.ti to organize the transcripts by participant. Next, the researcher thoroughly read each interview transcript at least once to consider possible meanings and study how details within the text fit with developing themes. After an initial reading, open codes (Hsieh, 2005) were developed as well as content analysis codes using key concepts from prior literature (i.e., Berry, Smylie, & Fuller, 2008; Borman & Dowling, 2008; Fresko & Nasser-Abu Alhija, 2014; Guarino et al., 2006; Heckman, 2011; Kersaint, Lewis, Potter, & Meisels, 2007; Odell, 1986; Renzulli et

al., 2011; Stansbury & Zimmerman, 2010; Stoll et al., 2006; Veenman, 1984; Westheimer, 1999)

This process is known as using both systematic and open coding (Yanow, 2014) or inductive and deductive coding (Thomas, 2006). A codebook was developed (see Appendix G) with themes (e.g., types of support), codes (e.g., personal and emotional support), operational definitions with clarification, and examples from the transcripts. After multiple readings of the transcripts with the codebook, some codes were eliminated or revised. Next, the codebook was shared with another researcher for inter-coder reliability purposes (Miles & Huberman, 1994). Inter-rater reliability results are described later in this chapter. Finally, all identified codes, both inductive and deductive, were used to describe and interpret the data. There were two stages of analysis based on the comparative nature of the study: within-case and cross-case (Merriam, 2009). Interpretations of the study's evidence was organized and presented based on the themes.

Furthermore, scores from the Teacher Attrition Survey were analyzed using descriptive statistics calculated from SPSS (Statistical Package for the Social Sciences). Descriptive statistics from the teacher attrition survey were triangulated with interview responses and used to support qualitative findings

Organized by research question, Table 7 represents all data sources and analysis procedures for the study.

Table 7. *Data Sources and Analysis Procedures*

<u>Research Question</u>	<u>Instruments</u>	<u>Analysis</u>	<u>Comparative Analysis</u>	<u>Data Type</u>
What experiences do beginning teachers from high need schools have with university-based PLC induction?	Interview Protocol	Inductive and Deductive Coding	Within-Case	Primary Data
	Focus Group Protocol	Inductive and Deductive Coding	Within-Case	Existing Data
How do beginning teachers from high need schools perceive induction support?	Interview Protocol	Inductive and Deductive Coding	Within-Case	Primary Data
	Focus Group Protocol	Inductive and Deductive Coding	Within-Case	Existing Data
How does PLC-based induction influence teachers' intentions to stay or leave high need schools?	Interview Protocol	Inductive and Deductive Coding	Within-Case	Primary Data
	Teacher Attrition Survey	Descriptive Statistics	Within-Case	Existing Data
What are teachers' experiences with face-to-face or online delivery of induction?	Interview Protocol	Inductive and Deductive Coding	Across-Site	Primary Data

Credibility and Dependability

Using Guba's criteria for trustworthiness of qualitative research outlined in Shenton (2004), multiple steps were taken to strengthen the study's credibility, dependability, and reduce researcher bias.

Credibility

First, triangulation of the teacher survey, interview, and focus group provided corresponding evidence for beginning teachers' intentions to stay or leave teaching. These multiple sources provided credibility to the findings by shedding light on reoccurring themes or perspectives across multiple types of data. In addition, quotes were used to provide voice to the participants and to provide further evidence to support the themes. Transferability refers to the external validity of qualitative research (Shenton, 2004). Although this data is not intended to be generalizable, the use of multiple case sites reveals two different contexts for which the results were relevant. According to Yin (2014) the use of multiple cases is regarded as more robust than single-case designs. Finally, using a constructivism framework, researchers must interpret their findings based on participants' unique perspectives. As a result, researchers should recognize their subjective relationship to the research. Often, their own background experiences inadvertently shape their interpretation of the data collected and study findings (Creswell, 2013).

Role of the Researcher. In this study, the researcher served as program facilitator for one of the two program sites. At the conclusion of the 2015 - 2016 academic year, she served on Univ-A's Noyce project for three years as a graduate research assistant. The Noyce project at Univ-A includes research on Noyce scholarship recipients from pre-service through in-service teaching. For the project at Univ-A, she conducted individual interviews and collected surveys with its teachers during their pre-service training, facilitated all induction meetings, conducted

focus groups, and performed other administrative tasks. Over the duration of the program, she developed a rapport with each teacher participant. Therefore, the researcher was integrated into the program as much as she was into the current research. Consequently, her interactions with participants and interpretations of the findings during the present study could not be completely objective.

Numerous procedures were used to minimize any biases associated with the researcher's role with Univ-A's Noyce project. First, an interview protocol was constructed and validated by experts in the field to provide consistent questioning across all participants. In addition, participants reviewed their interview responses after completion of transcription. This form of member checking solicited their view of the findings and ensured credibility of the interview before analysis and reporting (Creswell, 2013). Finally, reflective commentary was also documented using memos. Each memo was recorded immediately after interactions with participants, data collection, or analysis for more accurate records (Maxwell, 2013). More specifically, any initial impressions or thoughts during the interview and patterns of reoccurring themes or biases were noted. For example, the researcher was surprised at some reoccurring themes that emerged from participants' interview responses (e.g., level of high need school affecting experience with induction). Therefore, she documented those thoughts and revisited them during analysis.

Dependability

To ensure dependability, a record of all study changes and the reasoning behind the changes were documented during the research process (Mertens & Wilson, 2012). For instance, the interview process was an iterative cycle that required some adjustments throughout study design and data collection. As a result, any changes to the interview protocol was recorded and

previously reported in the instrumentation section. Additionally, two researchers analyzed interview transcript data as well as implementation rubrics to measure the stability of numerical delegation for the implementation rubrics or quote assignment to the study's codes and themes (Creswell, 2013). The procedures are explained in greater detail in the following section.

Coding Consistency and Peer Debriefing. Dependability for the interview transcripts was achieved using multiple researchers' agreement known as coding consistency. Along with the researcher, another qualified researcher, served as the second coder for the interviews. For coding consistency checks, the researchers utilized "check on the clarity of categories" approach outlined in Thomas (2006). After the study's researcher performed initial coding of the narrative transcript data, the second researcher was provided the coding categories and operational descriptions, which were outlined in a codebook (see Appendix G). Samples of each interview (approximately 30% of the total interview) were allocated to the second coder to assign these sections of the text to the relevant coding. Checks were then made to see the extent to which the second coder allocated the same categories to the raw data as the first coder. Researchers reached an acceptable level of inter-coder agreement of 80% before the study's researcher continued to independently code the remaining text and report (Miles & Huberman, 1994).

Using the peer debriefing technique (Creswell & Miller, 2000; Shenton, 2004), program implementation rubrics were checked by two researchers for dependability. Along with the study's researcher, another researcher who specializes in evaluation and implementation fidelity analysis performed peer debriefing. First, each researcher independently coded one face-to-face (Unvi-A) and one online (Unvi-B) successful analysis protocol using the implementation rubric. All implementation rubrics were developed using McDonald et al. (2007) step-by-step protocols and descriptions of each step, along with guidelines for scoring. The successful analysis protocol

was purposefully selected for independent coding because it was administered the most during the 2015 – 2016 academic year. After each researcher separately coded the successful analysis protocol using the rubrics, the two researchers met to discuss any coding discrepancies and came to convergence on the data. Based on this process, adjustments to the rubrics were made (e.g., clarifying directions to exclude facilitator instructions from being included in time recommendations). After this process, the researcher coded all remaining protocols for each university, totaling 19 protocol rubrics across both universities. One success analysis protocol at Univ-A was unable to be scored because it was not recorded. Therefore, it was omitted from overall scoring. Once all implementation rubrics were scored, the results were shared with the other researcher for feedback. This iterative process is known as peer debriefing (Creswell & Miller, 2000; Shenton, 2004).

Summary

All data was focused on measuring beginning teachers' experiences with PLC-based induction programs. In particular, teachers were asked to elaborate on their thoughts on induction support, their intentions to stay or leave the teaching profession early in their careers, and their experience with program delivery. The researcher collected data from three sources for this study: one-on-one semi-structured interviews, online survey, and focus groups. The information received from the interviews was the main generator of data for the proposed study. The additional data sources supported the qualitative findings.

Chapter 4: Findings

The purpose of this qualitative study is multi-faceted. First, this research aimed to address the gap in research pertaining to teachers from high need schools and their experience with university-based PLC induction, which utilized either face-to-face or online delivery. Given that teachers within these contexts often leave before retirement, this study also explored specifically which factors influenced beginning teachers from high-need and high-minority schools to leave their current job placement. By exploring their experiences with induction, this study could determine the types of support these teachers receive from the program, whether induction had an impact on their decisions to stay or leave their current school, and which method of program delivery was preferred.

This chapter provides a presentation of findings with details from three different data sources: interview transcripts, surveys, and focus group transcripts. The interview transcripts served as the primary source of data collection. Having qualitative research at the forefront of this study provides a rich and thick description of participants' experiences; hence, the reader is better able to understand the participants' reality of their experiences. Guided by the four research questions, this research identified five themes that were: (1) overview of beginning teachers' experience with induction, (2) understanding the development of a community, (3) what types of support were experienced, (4) understanding the reasons why teachers' stay or leave high need schools, and (5) experience with program implementation. Table 8 displays an overview of the connections between the main themes and subthemes within this study.

Table 8. *Themes and Subthemes from Interview Transcripts*

Theme	Subthemes
1. Overview of beginning teachers' experience with induction	(a) Benefits of induction (b) Limitations of induction
2. Understanding the development of a community	(a) Community-building (b) Community-building obstacles
3. What types of support were experienced	(a) Personal and emotional support (b) Pedagogical support (c) Task/problem-focused support (d) Critical/reflective practice support
4. Understanding the reasons why teachers' stay or leave high need schools	(a) Working conditions (b) Administrative or collegial factors (c) Accountability (d) Teacher personal factors (e) Financial (f) Student factors (g) Induction support
5. Experiences with program implementation	(a) Face-to-face implementation (b) Online Implementation (c) Program implementation preferences

This chapter emphasizes participants' original words by using quotations extracted from individual in-depth interviews. This allows for the participants' viewpoints about their experiences and the programs to be captured and illuminated. The survey responses and focus

group transcripts were used to support the findings of the interviews. To protect the participants' identity, pseudonyms for all 11 participants were used. This chapter concludes with a brief summary of the findings.

Theme 1: Overview of Beginning Teachers' Experience with Induction

Beginning teachers from both university-based programs were asked to describe their overall experience with induction. In general, most of teachers said their experience with induction was positive. Comments such as, "I love induction" (Julep, Univ-A), "I really like it." (Ava, Univ-A), and "I've enjoyed the program" (Chloe and Sadie, Univ-B) were commonly used to describe their overall experience. For some of the teachers, the program had really positive impacts on their first few years of teaching and the support was comforting as they began working in high need schools.

Most of the teachers who participated in the interviews also described in detail how induction served as a support system. Daisy (Univ-A) said that she "wouldn't have had as much support" without induction, which was "a place dedicated to discussing and developing." Further, some teachers described this support system as a unique opportunity that was unlike any other professional development program. Madison (Univ-A) said:

It's been like a really good support to have, like a good outlet to have because I really don't have anything else like this...when you have people who understand what's going on...it's hard to find that. You can't just Google a group of teachers who needs help, so it's nice that it's there already.

Regardless of how busy they were as novices, most of the teachers thought induction was "really worth [their] time" (Ava, Univ-A). Daisy (Univ-A) said, "Even when it wasn't my

problem that we were working on, I could always find one of my problems in that problem. So there was never a time when I was like, this is not meaningful.”

Although the general feelings towards induction were positive, one of the interviewed teachers expressed more negative opinions about the program. According to Steven (Univ-B), his view of induction was “neutral, it’s not damaging, I don’t get much out of it.” He could not offer suggestions of improvement, as he believed the program was not poorly done. However, he did not think “it [induction] was worth it.” According to Steven (Univ-B), he was not interested in the program and did not do the best job at “buying into induction.” He would frequently grade papers, watch sports online, and was disengaged from the meetings.

Nevertheless, most of the teachers would recommend the induction program to other teachers. In fact, one teacher wished she could extend an invitation to other school colleagues or implement the protocols at her school to improve aspects within her working environment.

In summary, most of the teachers expressed having positive experiences with their induction program. For many, the program made them feel supported, worthwhile, and was often unlike any other professional development within their schools. However, one teacher described having a negative experience with induction as it increased anxiety and did not offer the support he needed.

Benefits of the Induction Programs

Regardless of their overall feelings towards induction, the teachers discussed many benefits to participating in the programs. The main benefits of the programs included the structure of the meetings, group dynamics, and making connections from the meeting into their classrooms. For some of the teachers, induction provided some much needed positivity.

First, teachers shared their opinions on the structure of the meetings and how that impacted their experiences with the program. In general, the teachers thought induction was “structured in a way that’s very beneficial” (Daniel, Univ-A). Specifically, some of the teachers discussed how the protocols helped keep the conversations organized and on task. Since the protocols were similar every time, it helped develop a routine, which was appreciated by teachers from high need schools. While working in school environments that often lack stability, Zoey (Univ-A) expressed her feelings about having consistent meetings. She said:

Induction has given me a little bit of consistency throughout the year...we can rely on having meetings every month, and at those meetings I can anticipate problem solving...so that’s been a big help because in a [working] environment that’s lacking consistency, it’s been a constant. (Zoey, Univ-A)

During the interviews, the beginning teachers also discussed how the group dynamics positively influenced their experiences with induction. First, many of the teachers disclosed how having induction peers of similar age positively influenced their experience with induction. Additionally, some of the teachers believed having everyone employed within high need school districts enhanced their experience with induction. Harper (Univ-B) described how all of the teachers being under “a high need umbrella” helped her. She said, “It’s nice that even though we all kind of fall under this high need umbrella that there are, you see all these different, I guess regional differences within that high need umbrella.” (Harper, Univ-B) In addition, the beginning teachers also liked how the programs included teachers who were outside of their schools, but could still understand their circumstances. Many teachers in the program expressed an overall appreciation for the different perspectives. Finally, the teachers appreciated having math and science teachers represented in the program. When asked if Harper (Univ-B) thought having a

mix of math and science teachers was helpful, she said, “Yeah, helpful because there were some really cool projects and ideas that some of the math teachers shared that I thought was really interesting.”

As a final and major program benefit, many teachers reported taking information from the induction meetings and incorporating it into their classrooms. Daniel (Univ-A) repeatedly incorporated ideas from induction into his classroom. He said, “You're bound to take home something that you can use from just about every meeting.” When asked how often, Daniel (Univ-A) said, “Oh yeah, like multiple times, I can think of quite a few this year.”

In sum, the teachers who participated in the induction programs reported numerous benefits of the programs including the structure of the meetings and the ability to make school connections. Nevertheless, the teachers were also willing to share ways in which the programs could improve. Those are reported in the following section.

Limitations of the Induction Programs

In addition to program positives, the teachers also reported some challenging factors that were outside of the program’s control as well as various recommendations for program improvement. For instance, many of the teachers admitted that some struggles of a first year teacher were out of the program’s control. Steven (Univ-B) and Zoey (Univ-A) discussed major problems with the teaching profession and concluded that induction simply could not help them with those issues. Steven (Univ-B) said the one thing he needed more of was time and energy, while Zoey (Univ-B) elaborated on major issues with administration. She said:

I feel like we need more administrators. And that’s something that you know, Noyce can’t help me with that...I don't think there's anything in particular that Noyce could have done that it didn't because so many of these issues are just like structural. (Zoey, Univ-A)

Regardless of induction's limited reach into these teachers' everyday work lives, the teachers also reported various negative aspects of the program or other limitations within the bounds of the programs. Steven (Univ-B) and Daisy (Univ-A) could have used a more content-specific induction program as one was not receiving that support elsewhere and the other was teaching outside of his trained content area.

Many of the interviewed teachers also commented on structural challenges of the programs. To begin, Harper (Univ-B) stated that the level of support decreased in between the monthly meetings. She said:

With the way that it's [induction is] set up for us because it's once a month, and I know everyone's schedules are ridiculously crazy, but it would be kind of cool if there was more, I guess a little bit more follow up that wasn't a month later. (Harper, Univ-B)

These feelings were exacerbated when teachers had to miss meetings due to scheduling conflicts. For instance, Sadie (Univ-B) could not make every meeting because of coaching conflicts and Madison (Univ-A) went more frequently towards the beginning of the year as she had volunteering conflicts during spring meetings.

Although previously reported as a program positive, another issue described by teachers surrounded the use of protocols. Daniel (Univ-A) believed the protocols could be restructured to improve conversations. He said:

I can see how having it not be a dialogue keeps it from spiraling into negativity. But I would say there are times where the problem solving protocol itself seems like the flow of ideas just kind of gets stalled out by the way the protocol is designed. (Daniel, Univ-A)

Furthermore, the guest speaker-led session was described as the least beneficial part of the program for many of the teachers. Harper (Univ-B) was very excited about the guest

speaker's session, as the speaker's expertise was relevant with her current student demographics. However, she was disappointed in the session.

Some teachers offered recommendations for ways that induction could improve upon its shortcomings. Ava (Univ-A) discussed how induction could incorporate a "mental dump period." Additionally, Steven (Univ-B) believed induction could be more effective if the program spent more time celebrating successes.

In conclusion, induction was a positive experience for most teachers in their first one or two years of teaching. Many of the teachers enjoyed the structure of the meetings and felt empowered by the process. Yet, the teachers also shared some of the program's shortcomings. Generally, these limitations included some structural issues and the restricted reach of induction into the teachers' school environments. However, the teachers offered recommendations for future programs as they found the programs to be helpful overall.

Theme 2: Understanding the Development of a Community

For many of the teachers, induction was viewed as a professional learning community. There were many factors that went into establishing strong relationships among induction members, which included the development of trust, feelings of togetherness, and shared experiences. However, a small group of teachers described struggling to develop relationships with certain peers from induction.

Community-Building

Most of the induction teachers described the meetings as a "safe space" to discuss issues about school or personal weaknesses. Sadie (Univ-B) described how induction was "a safe place where I could talk about if I was having immediate issues with a student or faculty member."

Further, Sadie (Univ-B) knew that no one from induction was going to judge her for her issues or weaknesses. This unbiased environment was felt by many of the induction participants.

The beginning teachers who participated in induction also believed that having common backgrounds and shared experiences with group members enhanced the development of positive relationships. Daniel (Univ-A) felt like the induction program was a safe space by “being with people with similar training, being in an environment where everyone is there to improve and no one is there to judge.” That familiarity helped Ava (Univ-A) a lot throughout the duration of the program. She said:

Last year, I think I really needed somebody familiar to me who didn't have anything to do with the school...I think it really helped me to work through a lot of my stress and a lot of my issues that I was going through so that I could kind of go back in a good positive motivated mental state the next day. (Ava, Univ-A)

Finally, the beginning teachers appreciated having a “point of reference” with their peers because they realized they were no longer alone. Specifically, induction taught the participants that other novice teachers were experiencing similar struggles and insecurities. This was very humanizing for some of the teachers. For Ava (Univ-A), this feeling of togetherness was the biggest benefit of the program. She said, “Induction has helped with understanding that I'm not the only person who is dealing with these issues...and to feel that community and know that you're supported.” (Ava, Univ-A)

To summarize, teachers reported induction as a safe space to discuss sensitive issues within their classrooms. Having shared backgrounds with other teachers from the programs often enhanced this. Finally, induction provided a community where the teachers no longer felt alone in their struggles, as they were able to discuss and share similar experiences.

Community-Building Obstacles

Given the importance of community development for PLC-based induction, teachers were asked specifically how induction hindered the development of a community. For many teachers, they lacked rapport with other participants in the program for four main reasons: forgetting others' names, being employed at differing levels of high need schools, the lack of a social component with the program, and adverse relationships with others in the program.

Since induction comprised of two separate cohorts (i.e., first year and second year teachers), a common area of concern among teachers in the programs were the inability to recall other participants' names. For some, that made it more difficult to connect with others and sometimes caused the teachers to become hesitant of participation.

Although the teachers previously reported positives with having a group comprised of different levels of high need schools, the teachers also described how this factor hindered the development of a community. Given her "higher" placement, Ava (Univ-A) felt like she was unable to connect with other teachers in the program who were from more impoverished schools. When asked how she believed her experience with induction might have differed had she been placed in a more challenging school, Ava (Univ-A) said, "I think I would have felt a little more sense of camaraderie because sometimes I feel like I can't say things because I feel like they're going to laugh at me, like oh, that's not even an issue."

Some teachers also discussed how the protocols lacked a social piece, which could at times hinder the development of a community. Julep (Univ-A) said:

I feel like the protocols could hinder...all I keep coming back to is the first one that [Teacher] came to, and she just kept talking. But she wasn't used to it yet. And I

think...that it could have ended in a way where she would have thought well, maybe I shouldn't talk at all. But the way you frame it, just reminds her, hey, remember protocol.

In some other instances, beginning teachers discussed adverse feelings towards members of the induction group. These feelings spawned from personal differences, carried over feelings from working together in the same school, or preconceived notions established during their Masters of Teaching year. For example, Ava (Univ-A) disliked one person from her cohort where even his attendance to induction meetings stressed her out

In sum, there were various factors that hindered the teachers experience with community building. Many of these challenges spawned from differences between induction colleagues that made the development of trusting relationships more challenging. Therefore, the teachers expressed a need for increased community building exercises to learn more about the other teachers. Another challenge expressed by the teachers was difficulty with abandoning previous adverse feelings towards some fellow colleagues. These feelings often carried over from the teacher preparation years.

Theme 3: What Types of Support Were Experienced

Given that McDonald and colleagues' (2007) protocols and one guest-led session guided both induction programs, four main support models from the literature were used for deductive exploration. The four types of support were personal and emotional support (Fresko & Nasser-Abu Alhija, 2014; Odell, 1986; Stansbury & Zimmerman, 2010), pedagogical support (Fresko & Nasser-Abu Alhija, 2014; Odell, 1986), task/problem-focused support (Stansbury & Zimmerman, 2010), and critical/reflective practice support (Stansbury & Zimmerman, 2010). The following section provides voice to the beginning teachers' experiences with induction support.

Personal and Emotional Support

Personal and emotional support focused on providing beginning teachers with assurance, sympathy, perspective, and advice. When discussing the university-based programs, teachers said their induction program “offers moral support” (Zoey, Univ-A), “emotional support” (Harper, Univ-B) or “helps keep you in a positive place” (Ava, Univ-A). According to Ava (Univ-A), the program helped her “keep the right mindset, calm, positive, just moving forward.”

Multiple teachers referred to the induction meetings as therapy sessions. Harper (Univ-B) also commented on how having a group of people who were going through similar experiences was like “monthly therapy in a way.” Hearing peer colleagues’ experiences supported beginning teachers in other ways including the realization that their practices and emotions were normal. In her interview, Zoey (Univ-A) said, “It just helps me retain my mental health, because I can say, oh that person is having the same issue I am and they feel equally helpless about it.” She went on to say that she “would have felt so much more isolated without induction. It would have made [her] personally feel less hopeful.”

Julep (Univ-A) talked about how this sense of togetherness also helped her build confidence and find inspiration. She said:

It does let you know that you're not alone, which I know I've said before, but sometimes it does feel like you're on this lonely island out in the middle of your classroom and you don't know where to go or what to do or that whatever you're doing is okay. And I think that this [induction] really provides that support system to build you up and help you create those successful lessons, help you deal with the problem, look at your lesson, see how to make it successful and even just give you some inspiration about where to go for planning. (Julep, Univ-A)

Multiple other teachers also discussed how induction provided them with motivation and self-confidence. During her interview, Zoey (Univ-A) talked about how hearing others' stories offered inspiration. She elaborated:

It's easy to make science like hands-on typically...So, getting to hear their [math teachers'] struggles with creating like authentic lessons that are also engaging and hands-on is another motivator for me, like okay, they're able to do it then I'm definitely able to do it. (Zoey, Univ-A)

Although Ava (Univ-A) received motivation from others' experiences, she also enjoyed sharing her successful lesson. She felt like she was helping fellow teachers, while receiving affirmation about her practice. Sadie (Univ-B) also felt a boost in self-confidence when she presented a problem regarding her assigned mentor teacher. First, she discussed how she would have approached the problem without the induction meeting. Sadie (Univ-B) said, "I would have been unsure about myself...I would have felt like, oh maybe she [mentor teacher] did have a reason or I would have self-doubted my own feelings." Sadie (Univ-B) went on to discuss how induction actually made her feel about the problem. She said:

Once I shared the situation with them, at first it was really gratifying because they were like, wow, that is messed up...So it kind of made me feel confident that I was making the correct judgment of this new character in my life. (Sadie, Univ-B)

In summary, listening to peer teachers' experiences and empathetic listening helped beginning teachers feel a sense of personal and emotional support. For some, it served as a therapy session. For others, induction was an affirmation of their teacher practice, helped boost their self-confidence, or helped put them in a positive mindset. Regardless of purpose, most of the teachers discussed experiences with increased personal and emotional support.

Pedagogical Support

Most of the beginning teachers spoke about receiving support with instructional strategies, dissemination of resources, and guidance with ideas. To begin, a number of teachers discussed instances where the induction meetings helped them share and obtain resources. Daniel (Univ-A) discussed how induction provided pedagogical support during his first two years of teaching. He said:

The induction brought a positive lesson plan that a person had come up with and basically we were looking at not only the lesson plan, but the system of organization that went into it [during the success analysis protocol]...So I came up with some strategies.
(Daniel, Univ-A)

Many teachers also discussed newly acquired instructional strategies as a result of their participation in the induction programs. For instance, Steven (Univ-B) commented on an educational technology tool *Kahoots*, which he learned from induction and frequently used in his classroom. Without induction, Sadie (Univ-B) said, “I wouldn't be using as many techniques to manage my students as I am now... I definitely pulled something out of every meeting, so I would be a couple of tools short in my toolbox.” The shared resources and instructional practices inspired many beginning teachers to improve their practice.

The teachers discussed instances where they planned on taking new instructional ideas and practices back into their classrooms. For instance, Ava (Univ-A) explained how she began using more extension activities in her classroom as a result of induction. She said:

She [induction peer] had like the extension things for her students with like the moveable pieces with contact paper for cells and stuff like that, so that gave me an idea... it kind of

gave me the idea of just having things for them to practice and kind of going back to remediate or extend. (Ava, Univ-A)

Finally, Sadie (Univ-B) mentioned how participation in the induction meetings informed her teaching practice. She said:

Whenever a teacher has brought up a technique that helped him or her with their students, I have tried my hardest to actually put it into my own classroom...someone talked about having [discussion] circles after an incident happens in the school. I definitely put those into use. So I've walked away with probably a handful of wonderful techniques to help manage behaviors. (Sadie, Univ-B)

Overall, teachers who participated in the induction program reported sharing and receiving instructional strategies and resources. Many of the teachers also discussed how they have or plan to integrate those practices into their classroom instruction.

Task/Problem-Focused Support

Given that the teachers participated in the descriptive consultancy protocol (McDonough et al., 2007), which utilized problem-solving techniques, many teachers discussed learning new approaches to solving specific problems. For Chloe (Univ-B), that meant induction served as “an outlet to discuss problems and help problem solve with other people.” Rather than “going off on tangents,” Sadie (Univ-B) stated that the guided discussions led the group to solutions and provided her with a sense of closure.

Daniel (Univ-A) compared induction to using multiple “angles of attack” when approaching a problem. He elaborated:

The way we run the inductions, we're rarely just looking at I had this problem with organization, or I had this problem with a student and then the answer is really

straightforward... There's so many different angles of attack and different angles of approach that everyone comes up with. (Daniel, Univ-A)

Without the problem solving support from induction, Julep (Univ-A) said she would be “struggling.” When asked how her experience as a novice teacher might have been different without induction, she said:

I would really be struggling probably because I wouldn't know how to truly sit down and work through a problem and break it down and attempt to view it from different viewpoints...and I think it makes me a little bit more reflective of my own work. (Julep, Univ-A)

With the guidance from others in the induction program, many teachers received help and accomplished solutions to a specific problem. Kyle (Univ-B) communicated a problem he was having with homework and how induction assisted him with his issue. He said, “I talked about how a lot of my students weren't turning in homework, and so I got a bunch of good ideas from the rest of the group about ways I could help change that.” Kyle went on to discuss how that conversation was very beneficial for him and how he believed it was beneficial for others.

In conclusion, many teachers in the induction program found it as a platform for problem-solving practices. In most cases, the teachers believed the structured environment assisted in finding solutions to problems rather than having unconstructive conversations.

Critical/Reflective Practice Support

Finally, many of the interviewed teachers discussed instances where they were able to productively self-reflect on problems or their instructional practice as a result of what they learned while participating in induction. For instance, when Daniel (Univ-A) was asked how

induction has been able to help, he said, “The main way that it's been able to help me is having a place to go to just have a time of edifying reflection on what has been accomplished.”

Daisy (Univ-A) briefly discussed how the presentation of other teachers' lessons led her to self-reflect on her own instruction. She said, “I always feel like I'm interpreting it and tweaking it in my brain whatever their suggestions are for how it would work for my students.” Although Daisy (Univ-A) did not always instantly use information obtained during the meetings due to relevancy, she reflected on how it might help her in the future.

For some of the teachers, the meetings invoked self-reflection by thinking more deeply about a current problem. Chloe (Univ-B) discussed how emailing her problem to the induction facilitator before the session invoked self-reflection. She said:

Even with emails before a meeting, which was like hey send in a problem. I actually think...what is a problem I'm facing and send it in. Even if my problem or my successes [are not discussed in a meeting]...like just by virtue of that [email] itself, it's provided a lot more avenues for reflection, but then also discussions during our meetings have made me reflect on my own teaching and someone else sharing their experiences. (Chloe, Univ-B)

Finally, Julep (Univ-A) discussed multiple ways in which induction promoted self-reflective practice and helped her to communicate better with colleagues. She said, “That's helped me in just my self-learning, because I can just take a step back and like really listen to every single word that they're [colleagues are] saying.” She went on to give a specific example:

A teacher in my quad, I didn't like the way she was referring to a student...I was able to be like, okay, there is my problem presentation, let me listen to what she's saying...So

it's kind of helped me break down these conversations that can actually be really uncomfortable. (Julep, Univ-A)

In summary, multiple teachers described instances where induction promoted self-reflection of previous, current, and potential issues in their schools or within their practice. In many cases, the teachers provided explanations of how the protocols guided them to self-learning. In one particular case, a teacher used the protocol steps to assist with difficult conversations with colleagues.

Theme 4: Understanding the Reasons Why Teachers' Stay or Leave High Need Schools

In many cases, the teachers in this study were employed at schools that qualified as high need with more than one category (i.e., high poverty, high teacher turnover, and/or high number of teachers outside their content area) along with other inherent challenges. Yet, the majority of the teachers planned to stay at their current high need school for the next three to five years. In many cases, the teachers enjoyed their school and students; therefore, they did not plan on teaching anywhere else. Nevertheless, the harsh realities of working at high need schools caused some of the teachers to reflect and discuss the possibility of leaving their current school to pursue a different endeavor in the future.

To gain a better understanding for the reasons behind beginning teachers' intentions to stay or leave their current high need school, it is important to understand what it is like to work within the context of a high need environment. As a result, many teachers participating in the interviews provided descriptions of their work settings as well as the extent to which those factors would impact their decision. This section concludes with a description of induction's impact on their decision to stay or leave.

Working Conditions

Working conditions encompassed many elements relating to teachers' working environments. In this study, the teachers reported on various factors relating to school facilities and resources, workload, isolation, and the community's perception of the school.

Resources and Responsibilities. To begin, the majority of the teachers expressed satisfaction with the schools' facilities with comments such as, "Our facilities are pretty nice" (Chloe, Univ-B) and "Our school is actually one of the cleaner schools" (Sadie, Univ-B). Only one teacher was completely dissatisfied with her schools' building. Daisy (Univ-A) was employed at an inner-city school. She said that her building was "falling apart" and it was "not a normal school environment." When asked to clarify what a "normal school" looks like, she said, "New supplies, new appliances, or close to new, operable resources for the students, and resources for the teachers because we have nothing." Many of the other interviewed teachers voiced similar challenges with obtaining adequate resources at their school. Therefore, most of the teachers purchased supplies for their own classrooms.

More so than the struggles associated with resource obtainment, some of the teachers were shocked and exhausted from the amount of tasks they felt were required of them and the lack of time to work on those responsibilities during the school day. Julep (Univ-A), who was a second year teacher, was already department chair, quad leader, seventh grade leader, garden club committee member, school culture committee member, and a member of one other organization that she could not remember. According to her, she kept "getting added onto committee after committee after committee" and she was feeling overwhelmed with the responsibilities.

Steven (Univ-B) was also experiencing high levels of exhaustion due to the number of courses he was required to teach. With a degree in science, he was asked to obtain the Master Certification in Mathematics as his school lacked a certified teacher. As a result of this certification, he was assigned three preparations. Steven (Univ-B) said this number of preparations was:

More than average - like our English department has an average of one prep [course preparation], so teaching I'm having to do extra work at home and stuff like that and it's just like, it seems like getting that accreditation in service of the school would be actually detrimental to my practice in the long run because...I'm tired and I can't keep doing it.

As beginning teachers, the participants were often starting many of their lesson plans from scratch. Therefore, in addition to concerns about multiple content preparations, the teachers expressed distress about changing preparations from year to year. Ava (Univ-A), who was a second year teacher stated, "I built my entire curriculum resources from scratch last year." Although she was still using the resources from last year, she "[felt] a whole sense of starting over from scratch," since she was working with a new colleague. Although these working environments were manageable for many of the teachers, some wanted to be in a situation with less course preparations.

Isolation. When discussing their working environment, the teachers also reported feelings of isolation. Often times, the physical arrangement of the school and their classrooms played a major role in their experience with isolation. For example, Kyle (Univ-B) was at a campus-style middle school where teachers were located in three separate buildings. He commented on this structure, “I think it would be kind of nice if we weren’t so isolated, I guess. Sometimes it feels like there aren’t a lot of teachers around you, just because it is a sprawling campus style.” Daniel (Univ-A) also noted, “We can go over a week in a building of 12 teachers without seeing each other and we have a shared lunch period, which is insane.” Steven (Univ-B) stated how being in a classroom full of students all day could be very lonely as a teacher. Although these teachers expressed a desire to increase interactions with their colleagues, they did not believe it was a deciding factor for their professional endeavors.

Communities’ perception of the school. During the interview, many teachers discussed how others’ attitudes towards their school impacted their working environment. Given that the teachers were employed at urban specialty, magnet, and general schools, there were ranges of perceptions expressed by the community. First, teachers described how their schools and students were perceived negatively by their city. Sadie (Univ-B) discussed how her community portrayed her school and how those perceptions made her and her students feel. She commented:

We get stereotyped a lot in terms of the other nearby schools for our disproportionate minority to majority makeup and I think that sometimes that stereotype goes so far as students start to act how they're told what they are. (Sadie, Univ-B)

Although some teachers were also employed at urban high need schools, a few schools had an application process that caused the community to have higher regards for their schools

than neighboring schools. Madison (Univ-A) discussed how those perceptions impacted her experience and that of her students. Reflecting on a parent-teacher conference, she said:

There was a young boy...he just is missing homework assignments and I think failing some things...and his mother looked at him and she was like, you realize this is a privilege that you're here...She was like, if you want you can be punished and you can go back to your home school. That will be your punishment that you will go there and you will not get an education. I was just shocked that she said that, that going back to his old school meant he would not get any type of education and this is like for some of the kids, this is it. (Madison, Univ-A)

According to Madison (Univ-A), all schools in her city had a label. The notion that her school was labeled as a “better school, in a better situation” was something that her kids took in. These labels also carried over to central office and their perceptions of schools within their system. According to Steven (Univ-B), his administration went so far as to not report “bullying” or “fights” that occurred in their school because documenting those problems as attendance issues “looks better than violence” (Steven, Univ-B). There were no documentations of any fights that occurred in his school so that “there's no record of that having happened.”

Overall, many teachers who were interviewed discussed how some of their experiences with urban high need schools were influenced by the communities’ perception of their school. These attitudes impacted the teachers’ personal views of their school before employment and during employment. Yet, none of these teachers mentioned whether these perceptions would influence their decision to stay or leave their current school. In one case, Ava (Univ-A), who works at a suburban school neighboring an inner city school system, discussed how her perception of inner city schools affirmed her decision for employment outside of the city. She

said, “I’m really thankful that I chose not to teach in [City] because...emotionally I don’t think I would be able to handle [City]...and now it’s [induction has] just reconfirmed that.” Although Ava (Univ-A) has never worked in that school system, hearing other teachers’ negative experiences within those schools reaffirmed her decision.

Administrative and Collegial Factors

Most of the teachers reported their school having one principal with one to four assistant principals. An exception was a teacher working at a specialty school with a small population, which only required one principal. The majority of the teachers were assigned to an assistant principal based on content area, grade level, and/or alphabetically by students’ last name. In two instances from teachers employed at the same school, their grade level was not assigned an assistant principal; therefore, they were unsure who to report their problems or issues to. In addition to administration at each school, the teachers described their collegial staff. According to their interviews, some of colleagues at their schools did not always have the same teaching credentials as this study’s participants (i.e., Masters of Teaching). For instance, in some cases their colleagues were licensed provisionally, for grade levels K-6, or in a content area other than what they were teaching.

Administrative Support. When considering administrative supports, the interviewed teachers described different experiences. However, most of the teachers had instances of both positive and negative encounters with their principals and/or assistant principals. The teachers’ perceptions of their administration often influenced the teachers’ decision to stay or leave their current school.

Julep (Univ-A) discussed a lack of administrative leadership at their school and instances where administration belittled the teaching faculty. According to Julep (Univ-A), the new

administration did not value veteran teachers and would “talk down” to her and her colleagues.

Julep (Univ-A) reflected:

When they [new administration] came in...they spoke down about the culture of the school and it felt like they were putting the blame on the veteran teachers. So we voiced it, we said, hey, we feel there's a lot of blame on us.

Although at a different school, Daisy (Univ-A), a first year teacher, discussed similar interactions with her administration. Daisy (Univ-A) was observed by her administration “a few times,” but never received post observation feedback. Even during conversations with administration, she felt “fake” and hated talking with them. Like many of the teachers, Daisy (Univ-A) also discussed her unwillingness to approach administration with student management issues. In the beginning of the school year she wrote referrals, but later quit when she found that “they don’t really do anything” (Daisy, Univ-A).

Alternatively, about half of the teachers expressed positive administrative experiences. Madison (Univ-A) talked extensively about her supportive principal. In her opinion, her principal is the “most supportive person [she has] ever met.” She went on to say, “From the first day I walked into the classroom, the first day I was at the school, he said, ‘whatever you need, you tell me and I will try to help you get it.’” (Madison, Univ-A)

According to Madison (Univ-A), she also had a principal who “sticks to his word.” She believed this was a unique quality, as she has not seen this happen with other administrators. This was an important quality for both Julep (Univ-A) and Zoey (Univ-A) who provided in-depth negative experiences with their administration. According to Julep (Univ-A), she would purposely give referrals to this administrator because she knew that was the only way the issue would be “dealt with.” She went on to describe how this particular administrator listened to her

recommendations for the school and talked with her after she felt attacked by colleagues during a meeting.

Overall, the teachers who experienced mostly negative administrative support described that administration had an adverse impact on their decision to stay or leave their current school. For instance, if Zoey (Univ-A) does not see the administration making certain changes to improve, she would “definitely feel like [she] had to go.” Similarly, some teachers’ decisions to stay or leave their current school were associated with positive experiences with their administration. According to Harper (Univ-B), she would follow her current principal if he were to leave. Therefore, administration played a major role in many teachers’ intentions to stay or leave their current school.

Collegial Support. Similarly to administrative supports, the teachers participating in the interviews also reported mixed experiences with their school colleagues. Although not voiced as often as administrative support or lack thereof, the teachers’ perceptions of their colleagues did have an impact on some of their decisions to stay or leave their current school.

During the interviews, many teachers discussed challenges associated with peer teachers at their schools. One of the more prevalent issues with colleagues involved relationships with mentor teachers, who were veteran teachers assigned to the beginning teachers by the school or school district. Sadie (Univ-B) discussed this relationship in more detail during her interview. She said, “The mentor that was assigned to me, her and I have very different teaching philosophies and also very different education backgrounds ourselves so we ended up clashing pretty heavily.” (Sadie, Univ-B)

Steven (Univ-B) experienced a situation where pedagogical differences between veteran teachers and new teachers surfaced. According to him, this was known as the “new-school and old-school divide.” Steven (Univ-B) stated:

There’s definitely divides in my school, one of the biggest ones is like old-school, new-school...old-school is very much like rote memory, have them write the thing a bunch of times, you know, just like needless writing assignments in my mind, I’d be a new-school, I’m sure that they would say that new-school is too fluffy and misses the point of learning, it doesn't focus on traditional learning values.

Although a few of the teachers expressed some negative relationships with their colleagues, most of the teachers discussed having positive relations with some coworkers. Sadie (Univ-B), who discussed major differences with her first mentor teacher, was later assigned another one. She said:

They assigned me another mentor...and actually [it] worked out really well because she was our department head and her and I agreed on a lot of things when it came to our styles of teaching. (Sadie, Univ-B)

According to Sadie (Univ-B), her department head not only provided her with support as a mentor, but also helped her remain positive. Having a supportive colleague or entire department was helpful for beginning teachers to maintain a cohesive working environment and remain positive.

In sum, the majority of the teachers discussed some instances of both positive and negative interactions with their colleagues. However, none of the teachers mentioned their current relationships with colleagues having an impact on their decision to leave their school. Conversely, Steven (Univ-B) said the positive relationships at his school were the main reason

he would remain at his current school. He said, “That’s probably the main thing that would keep me here actually is that I have some really good friendships...I respect a lot of the teachers here.”

High Turnover Rates. The teachers also mentioned high administrative and teacher turnover at their schools. In some instances there were large gaps between veterans who had taught as long as 30 years and those in their first few years of teaching; whereas, in other environments a teacher was considered a veteran after two years of experience. The beginning teachers in these interviews discussed the ramifications associated with high administrative and collegial turnover.

Zoey (Univ-A) reported on the recent “flux” of new administration at her school and how she would prefer a different environment. She said:

It would definitely be preferable to have like a good strong relationship with people I work with...there keep being kind of being bumps in the road with regard to that because so many people aren’t staying, they're not sustainable. I mean, I know of four people, just in like very close proximity people I talk to every day at work, who aren’t going to be there next year. And that’s a little bit daunting. (Zoey, Univ-A)

In addition to the development of relationships, these teachers reported a more negative working atmosphere as a result of frequent shifts in personnel. According to Kyle (Univ-B), this might feed into somewhat of a self-fulfilling prophecy:

I think part of the turnover rate effect is kind of like a negative atmosphere...because there's just enough turnover that everybody feels like it’s that much tougher, like because we have people coming and going so much that like it must be so much harder than a school in the West [part of the district] with more resources or better behaved students.

Workplace instability would also be a determining factor for Ava (Univ-A). When asked if she would prefer to go to a school with fewer administrative and teacher turnover, she replied, “Honestly, yes, which is what is really frustrating me because I wish it didn't affect me so badly...it's a vicious cycle, where people are feeling these issues and they get in there and they feel unsupported.”

In conclusion, multiple teachers spoke of challenges with administrative and collegial turnover at their schools. According to these teachers, the consequences of this “revolving door” could influence their decision to stay or leave their current school in the future.

Accountability

When reporting on schools' emphasis on standardized testing, other assessments, data driven decision-making, and paperwork, the teachers provided varying levels of accountability pressures. First, novice teachers who reported a less involved administration also reported less stress associated with accountability measures or did not mention accountability during their interview at all. Zoey (Univ-A) who works at a school with little administrative support stated, “I feel like there's not a whole lot of pressures being put on me in terms of accountability as a teacher because everybody is sort of so overwhelmed that I've had maybe a couple of administrative observations this year.” Although low accountability measures were not related to Zoey (Univ-A) wanting to leave her current high need school, she anticipated when accountability might become a factor in her decision making in the future. She commented:

With absolute certainty if...pressures were put on me in terms of my instructional strategies, and...the efficacy of those instructional strategies, but I didn't see the administration making certain changes to improve or demonstrating that they are working hard to improve...then I would definitely feel like I had to go. (Zoey, Univ-A)

Conversely, the teachers who reported having positive relationships with their administration also described anxiety associated with accountability. As a second year teacher at a higher performing school, Daniel (Univ-A) felt, “At school, it sometimes feels like there's nothing but threats. You have pressures from your students, parents, administration, and it just feels like you're under siege from all sides at times.” In a similar situation, Harper (Univ-B) felt like the pressures put on the teachers for passing standardized tests was one of the most challenging aspects of teaching at her school. However, she did not feel like it was a “deal breaker” when making the decision to stay or leave her current placement.

In general, the teachers felt different levels of accountability demands. Teachers who viewed their administration as supportive also reported higher stress relating to accountability, while teachers who reported a less involved administration reported less stress associated with standardized tests. Nevertheless, none of the teachers reported accountability being a factor in their decision to stay or leave their current working environment.

Teacher Personal Factors

When discussing reasons these beginning teachers would leave their current school, many of them spoke of personal factors having an influence on that decision. Recently engaged, Sadie (Univ-B) would leave her current school if her fiancé was offered employment in another area. According to Madison (Univ-A), she would leave her current school for either family reasons or personal interests. First, Madison (Univ-A) stated, “I think that would probably be one of the driving forces...like just a family thing because that's something I feel like I don't have a lot of control over.”

In addition to familial circumstances, Madison (Univ-A) would leave her current school for two other personal interests, which included: utilizing her bilingual abilities and pursuing

educational opportunities. Similarly, Ava (Univ-A) would like to pursue a Doctor of Philosophy (Ph.D.) degree in the future. According to their interviews, Madison (Univ-A) and Ava (Univ-A) would still like to remain in the field of education even if that meant taking on new responsibilities outside of teaching. Sadie (Univ-B) would be interested in other pursuits within education. She stated:

If I moved it would probably be within the school system and it probably wouldn't be because of my school, it would be because I was able to do something more that I thought would help my students, like build curriculum or what not. (Sadie, Univ-B)

Still within the realm of education but moving towards athletics, both Harper (Univ-B) and Kyle (Univ-B) expressed interest in coaching opportunities. Although Harper (Univ-B) viewed coaching as an addition to her teaching career, Kyle (Univ-B) could potentially see it becoming a full-time position. He said:

I could see myself possibly being like a full time coach but I have always, like all of my jobs have been dealing with kids. I enjoy working with kids or students so I don't see myself going to too far out of the field. (Kyle, Univ-B)

In general, many teachers described personal factors or interests having an influence on their decisions to stay or leave their current position. Some of these factors included: spousal relocation, family illness, educational pursuits, or other teaching or coaching opportunities.

Financial

When considering monetary factors associated with teaching and their decision to stay or leave the profession, the results were twofold. First, some teachers said they would leave teaching to pursue a career in another field for higher salaries. For example, Daniel (Univ-A),

who has a wife and children, mentioned leaving the profession if his family needed more financial assistance. He said:

If my family was facing some kind of crisis financially and could be helped by me seeking a higher paying career that was slightly less edifying, I could see myself leaving and it would not be out of disdain for the profession. (Daniel, Univ-A)

Conversely, financial incentives associated with teaching in a high need environment was a major reason some teachers planned on continuing to teach at their school in the future. Zoey (Univ-A) and Kyle (Univ-B) taught at Title I schools, which made them eligible for student loan forgiveness after five years of teaching. Both beginning teachers mentioned this incentive as a major motivator to “stay put.” (Kyle, Univ-B) The Noyce obligation was another financial reason teachers considered staying at their current school. Julep (Univ-A) said, “I have my contract, and that’s like \$7,000 so that’s the biggest one right now honestly.”

Overall, none of the teachers mentioned monetary reasons relating to their decision to immediately leave their high need school. However, some teachers stated they would consider searching for a higher paying job if and when their family needed more financial revenue. Contrarily, the financial incentives for beginning teachers to stay in high need environments was a motivator to remain in their current classroom at least until loans were repaid.

Student Factors

Student relationships were the main reason many of the beginning teachers would stay in their current classrooms. However, to better understand the challenges associated with the student/teacher relationships, especially when all of the interviewed teachers were White with predominately African American students, discussions surrounding classroom management challenges and racial mismatch were explored.

Student behaviors. Many of the beginning teachers discussed challenges associated with student behavior. For Zoey (Univ-A), discipline issues were the most difficult part of teaching. Kyle (Univ-B) said, “I really like them as kids, they are really frustrating as students.” Ava (Univ-A) believed the lack of knowledge surrounding educational routines, such as studying, also transferred into classroom habits. She briefly discussed her experience with students’ inability to maintain order in a science classroom. Ava (Univ-A) said, “I have a lot of management issues because the kids are not in the routine of knowing what a science class should be like and it’s really frustrating to me.” According to her, this was the result of poorly prepared students from previous teachers who used worksheets instead of more authentic science practices.

When some of the teachers reflected on student behavior at a non-high need school than at a high need school, Sadie (Univ-B) said, “I think their behavioral level and the level of maturity is very different... I think kind of the leading problem [at a high need school] is just rude attitudes and the lack of respect that goes on in the hallways.” Kyle (Univ-B) reflected on the major behavioral issues in his classroom and compared it to a non-high need school. He said:

I always thought that the main thing would be like the classroom management...like 90% of my job is like keeping them on task and keeping them in line. I imagine there are schools out there where you just say to do something and they do it. Oh man, that must be like school heaven, like I just say it and they do it. (Kyle, Univ-B)

In summary, many of the interviewed teachers described instances of classroom management issues; however, none of the teachers openly said that student behavior would be the reason they would leave their current teaching placements. Further, many of the teachers

discussed how the relationships with their students would be the reason for staying at their current school.

Racial mismatch. Every teacher who participated in the interview was White and had predominately minority students. Therefore, every teacher had examples of how racial differences with their students impacted their classroom. To provide voice to those interactions and learn how the individual teachers handled those situations, quotes from their interviews were shared.

To begin, many teachers described how their cultural backgrounds or how they were raised was very different than their students. These conversations included instances where students called the teachers “racist” or other race-related names. Sadie (Univ-B) talked about how she was perceived by her students when they first met. She said, “At first I felt a lot of my students were judging me, they saw my skin color, like oh man, she’s a new teacher and she’s a white skinny bitch and those words really came out verbatim.”

In addition to being called various negative names associated with race, many of the teachers learned that their students had misconceptions of who they were. Some of these preconceived notions included the idea that the teachers came from wealth because they were White. Zoey (Univ-A) discussed an interaction she had with one of her students. She said:

I had a student get upset at me the other day because she had knocked a textbook on the floor and stepped on it and ripped a page. And when I explained to her that damage to the textbooks is the student’s responsibility...she immediately took me saying that...as like a racist thing because as soon as it was out of my mouth, she got very defensive and said that, and I quote, “we don’t all live in big houses, we’re poor.” (Zoey, Univ-A)

For Zoey (Univ-A), that conversation made her realize that she did not do a great job of introducing herself at the beginning of the school year; therefore, she believed her students were challenging their ideas of whom she was or what she does. One teacher discussed some questions she received from her students about her race. Julep (Univ-A) reflected on the questions, “Are you rich like all white people? Where do you get your hair done? Why are you the only white teacher that can handle us?” When asked what her students meant by “Why are you the only white teacher that can handle us?” Julep (Univ-A) said:

I think it may just be the rapport...how I ran my classroom and the comfort that they felt with me and I don't know if other teachers were doing it, are doing it, but there's definitely a way to the intonation that you speak when you're teaching and interacting that can easily come off as well I [a White teacher] think I'm better than [students of color].

When teachers come from different backgrounds and are placed in schools with students from predominately different races and cultural backgrounds, it can be challenging for some teachers to connect in the way that Julep (Univ-A) did. The interviewed teachers described how interactions with their students were sometimes different than other teachers in their building. According to Julep (Univ-A), some teachers in high need school are unwilling to adapt to the culture of the students attending that school. She said:

I don't want to say that they should compromise who they are or something, but to mold themselves to fit the situation they're in currently. If they were more willing to do that, they could be really successful, but I think that they're just so caught up on this is who I am as an educator and it must work because this is who I am as an educator. And that's not going to work. (Julep, Univ-A)

Julep (Univ-A) believed that teachers must demand a “presence” from their students in order to gain attention and engage their students, which many teachers in her school lacked.

Steven (Univ-B) read about this idea of “presence” in an article. He said:

I read an article about how to get the attention of like African American teenagers and the article said, well, look at where they [teenagers] do pay attention, go to the barber shops, go to the churches...even the teenagers, are captivated by this guy who’s just screeching for like an hour...So I try to figure out what it is about, like inflection, and like patterns of speaking, and like repetition to a certain extent. (Steven, Univ-B)

As a result, Steven was trying to work on his presence for disciplinary actions in his classroom. He talked about how he was shifting from how he’s grown up listening to authoritative adults to how African American children view adults in their culture. Steven (Univ-B) talked about trying to learn from the African American staff at this school, especially regarding classroom management.

Lastly, many of the interviewed teachers discussed linguistic assumptions they had not considered until teaching at their school. The teachers discussed these language challenges at great length. Steven (Univ-B) summarized what it was like to speak with his students. He said:

When I speak Spanish to somebody like I suck at it, I use it, I can use it but I suck at it, and so like they [Spanish speaker] have to slow down what they're saying, and they can't say it the same way, they have to choose different words that are more concise and then I have to have them repeat it two or three times, and it's just like, there's no flow to that conversation. So if you're both fluent in the exact same language, like it just feels like you're connected in a different way. (Steven, Univ-B)

This insight led Steven (Univ-B) to realize that learning and performing in his classroom

might be difficult for his students. He went on to say:

I speak like standard, nerdy English and most of my kids do not and the more that I read their writing, like the more that I'm amazed that they can even understand me when I speak because it's just like so different. (Steven, Univ-B)

Therefore, Steven (Univ-B) highlighted how important it is for teachers to learn their students' language and how that helped when developing rapport with his students.

In conclusion, the notion of racial mismatch was witnessed and discussed by all teachers. The teachers had both difficulties and successes with children and adults from racially different backgrounds. Regardless of their story, most teachers said racial mismatch with their students and colleagues would not cause them to leave their current school. Although Steven (Univ-B) did not say racial or cultural differences would be the cause of his exit from urban high need teaching, he did talk about how the cultural differences were, at times, "draining" and how it made him feel "out of place."

Induction Support

Overall, the beginning teachers all experienced many challenges early in their teaching careers. Regardless of their challenges, induction had a large enough impact on some teachers' decision to stay. Zoey (Univ-A) stated, "I definitely want to stay in part because of insights I've gained through induction meetings." For her, hearing of others' experiences in high need schools and learning that they've made progress regardless of their circumstance gave her hope for her own future. Similarly, Sadie (Univ-B) commented, "I probably wouldn't be in a high need school today if it weren't for Noyce...so it definitely had a huge impact."

Ava (Univ-A) felt that the induction program helped her through the first two years of teaching. Although, she was not sure she could attribute all of her success to the induction program, Ava (Univ-A) stated:

I think that honestly the [Univ-A] program itself...just feeling prepared for teaching has had more of an impact on me wanting to stay at my school, but the induction program as an extension of that, it kind of seems to me that my program hasn't ended.

Although induction still had a positive affect on others' decision to stay, some of the teachers discussed extrinsic factors that made induction's influence less impactful. Madison (Univ-A) said:

I'm not sure if it's had an impact...I feel like for myself it's just like there's other factors that influence that, that would be the driving force for me to like leave or change the school. So the only thing I can say is that probably the induction program would be the reason why I would stay in the school just because I see when I have issues, there are ways to fix them and the other teachers have helped me.

Finally, a few teachers said induction had "zero influence" (Steven, Univ-B) on their decision to stay or leave. For Julep (Univ-A), extrinsic factors were too great and outside of induction's control. She commented, "Induction doesn't have an impact on it. There are extrinsic things that are the issue" (Julep, Univ-A). According to Harper (Univ-B), the reason she wanted to stay in her high need school had more to do with her personality and less with the support she received from the program.

Overall, the teachers provided mixed reviews on induction's impact on their decision to stay or leave their current school. Some teachers stated that induction program directly influenced their decision to stay at their current school. While another teacher viewed

participation in the university's preparation program as having more of an influence. The remaining teachers reflected on instances where it might have a larger impact, but some said induction had no influence. This was mainly due to extrinsic factors that the program was unable to control.

Theme 5: Experiences with Program Implementation

The following section uses quotes from beginning teachers' interviews to provide voice to their experiences with face-to-face or online method of program delivery and their preferences of implementation. There were six interviewed teachers who participated in the face-to-face model of program delivery and five teachers who participated in the virtual induction program. Regardless of method of delivery executed by their program, both groups of teachers were asked to provide their opinions about face-to-face and online implementation.

Face-to-Face Implementation

Overall the teachers discussed four major advantages to the face-to-face method of program delivery. Those categories included: accountability, fluidity, community building, and opportunity for impromptu conversations.

According to three teachers who participated in the face-to-face induction program, they felt being physically present in a room with their peers kept them more accountable. Daisy (Univ-A) talked about how the face-to-face method kept her more accountable when working on problem-solving protocols. She said, "In face-to-face you were held accountable because everybody is here together and you're held accountable, you're responsible for helping us solve these problems or discuss this lesson."

In addition, teachers from both programs believed face-to-face conversations flowed more naturally than online forums. Chloe (Univ-B), discussed a more “organic conversations” in face-to-face interactions even though she participated in the online program. She explained:

There's sort of like body language, or like people know someone else is going to talk or you can like give eye contact or things like that that would just make it more like a conversation rather than like someone's speaks, a couple of pauses, okay the next person is going to speak. I feel like [it] would be more fluid. (Chloe, Univ-B)

According to teachers from both programs, induction that meets in-person allows for improvements with community building. Zoey (Univ-A), who participated in the face-to-face model, was able to strengthen relationships with her induction colleagues. One teacher from the online induction program, a self-proclaimed introvert, discussed how a face-to-face induction program could have helped him develop relationships with the induction teachers quicker. Kyle (Univ-B) said:

I think that the community would build much quicker if we were face-to-face...by shaking someone's hand and talking to them, there's that much more communicated than only being able to see and watch the one person that's talking at a time in a group.

Discussed by numerous teachers from the face-to-face induction program, food became a unique aspect of community development. Daisy (Univ-A) discussed the element of dinner during her interview. She said:

It's nice to all get together and we share a meal, which is nice. I think it adds to the community feeling, it's almost like sitting around for supper and having a conversation like a daily dinner like you would with your family. (Daisy, Univ-A)

While the teachers were settling into the meetings and getting dinner, they were able to have more informal discussions with one another. Daisy (Univ-A) benefited from talking to other induction members before and after the meetings. She talked about arriving to the meetings. Daisy (Univ-A) said, “We all automatically started coming in and talking about our job and you can see how other people are handling it, you can see their issues already before we had gotten into any protocol.” After the induction meetings, Daisy (Univ-A) would continue conversations with some of her peers.

Overall, beginning teachers from both induction programs were able to provide multiple benefits to the face-to-face method of program delivery. However, Teachers from both induction programs were also asked to discuss disadvantages of a face-to-face induction program. All teachers discussed one major disadvantage, which was “getting everybody in the same place all at once” Zoey (Univ-A). Madison (Univ-A), who participated in the face-to-face program, missed a few meetings because she was volunteering during the meeting times. For the teachers participating in the online induction program, they knew it would be more difficult to meet in-person because they were in “so many different locations [it] would have been impossible logistically” (Harper, Univ-B). Even if the teachers were willing to drive to an in-person meeting, the “travel time” to get there would have been a major disadvantage for Chloe (Univ-B).

Virtual Implementation

Regardless of affiliated program, all of the teachers viewed the online induction program as convenient. Comments from teachers in the online induction program included: “I can already be in my house and like there can be food being cooked and... transportation time won't be an issue” (Chloe, Univ-B) and “It’s just easy, like you can plug into the meeting from work, from home, if I feel like going to a different city or like taking a job in a different city, it’s very easy to

access, and that's nice" Steven (Univ-B). And though the teachers from the face-to-face induction program had a different method of delivery, they anticipated similar advantages to the online format. Furthermore, the virtual meeting made Sadie (Univ-B) feel included in the program even though she moved to another state.

When discussing challenges associated with an online program, the teachers from both programs talked about three main issues including: increased distractions, technology issues, and broken conversation. First, teachers who participated in the online program talked about their levels of distractibility. Steven (Univ-B) admitted, "A lot of times when I was at the meetings, I'd be like grading or like sitting, like watching basketball on my screen, so my engagement ended." Teachers who participated in the face-to-face induction program also commented on the possibility of increased distractibility. Julep (Univ-A) said, "I think that if it was on a computer you could totally just like, oh my webcam's not working today...and then you could just do something else."

Technology issues were another challenge frequently discussed regarding the online induction program. Chloe (Univ-B) discussed some of these problems in greater detail. She said, "Sometimes the sound is off, like sometimes people don't mute themselves, or forget to unmute themselves" (Chloe, Univ-B).

Finally, the teachers from both programs brought up issues with disruptions in the flow of conversation. For the teachers discussing this issue, the main deficiency was the lack of social cues. First, teachers from the online program stated, "I think sometimes like conversations can be stilted just because no one knows when the next person is going to speak and they don't want to speak over someone" (Chloe, Univ-B). Teachers from the face-to-face program agreed to this virtual challenge. This lack of social awareness hindered the ability to build trusting relationships for Steven (Univ-B). He stated, "[Online] doesn't feel very intimate and so like it definitely takes

away from feelings of group intimacy and like as a result some trust among the group, like I'm not really building relationships through meeting remotely as much.” (Steven, Univ-B)

To summarize, teachers from both programs discussed benefits and issues with an online induction program. Generally, the teachers believed the online model to be more convenient. Additionally, this model was inclusive of teachers who moved to other states. The main issues with the online format included distractibility, technology issues, and disruptions with conversations and relationship building.

Program Implementation Preferences

When asked, the majority of the beginning teachers chose the face-to-face method of program delivery as their preference. Julep (Univ-A) said, “I prefer face-to-face things over a computer... I find that I am more present.” Daniel (Univ-A) also believed that an online program “wouldn't have the same feel or approach, it wouldn't have the same impact.”

If geographically possible, teachers from the online induction program also preferred a face-to-face model. Chloe (Univ-B) said she would definitely attend in-person induction meetings if they were in her state. She went on to say that “having more meetings in person” would be a program improvement. Steven (Univ-B) also agreed that more face-to-face interactions would improve their current program. When asked how his induction program could improve, he said:

Localized instead of remote... if wasn't like a thing where like I was driving for an hour, then I think I would like it better because it's like, it just feels like more like real, and I think that maybe if I felt like, I don't know, there's something about speaking and being heard and vice versa, like actually hearing other people. (Steven, Univ-B)

Supporting Data: Survey and Focus Group Findings

The following section reports on findings from the survey and focus group transcripts. These data sources, along with their results, were used to support the interview findings and provide additional credibility to this study.

Descriptive Statistics of Teacher Attrition Survey

After completing the demographic section of the online survey, teachers were asked to provide a rating to each statement pertaining to teacher attrition factors. Using a Likert scale, the participants were asked to indicate the extent to which they believed these statements would cause them to leave the profession within the next five years. The response scale ranged from one (“would not leave”) to five (“would leave”). This section of the survey consisted of 27 items, which included six categories of teacher attrition. According to Cashwell (2008) and Heckman (2011), a response between one and two means that the attrition factor would not cause the respondent to leave the teaching profession. A rating between three and five represents a factor that may cause the teacher to leave the teaching field. This survey was administered in September 2015, December 2015, and May 2016 to determine if there were any changes over the duration of the school year.

The minimum, maximum, and mean scores for the six attrition categories are represented in Table 9. The six factors are listed in ranking order from the highest to lowest mean scores at the end of the academic year. The data suggests that the two highest categories are administrative support and personal factors indicating that these factors would have the highest impact on the teachers’ decisions to leave the field. However, it should be noted that none of the survey items averages fell within the three to five range, meaning the teachers would likely not leave the profession based on any of these factors.

Table 9. *Minimum, Maximum, Mean Scores, and Standard Deviations of Attrition Scores at Pre, Mid, and Post*

<i>Factor</i>	<i>Minimum</i>	<i>Maximum</i>	<i>PRE</i>		<i>MID</i>		<i>POST</i>	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Administrative Support	1.00	5.00	2.81	1.23	2.82	1.08	2.98	1.36
Personal Factors	1.00	5.00	2.39	1.09	2.61	.995	2.84	1.07
Salary	1.00	5.00	2.35	.953	2.48	1.21	2.45	1.22
Accountability	1.00	5.00	2.19	.840	2.54	1.06	2.41	1.04
Working Conditions	1.00	5.00	1.87	.993	1.99	.801	2.09	.901
Teacher Preparation	1.00	5.00	2.00	.841	2.00	.834	1.98	.861

Note: Pre ($N = 21$), Mid ($N = 20$), Post ($N = 20$). Respondents answered on a 5-point scale for each of the items (1 = would not cause you to leave, 5 = would cause you to leave the profession).

Five questions were used to gather information about the participants' intentions to remain in the field of teaching altogether, pursue an administrative position, leave for a teaching position in another school district, leave for a teaching position in another state, or recommend the teaching profession to their students. Scores of one represent that the respondent "strongly disagrees" that he or she would leave the profession for the above reasons; whereas, scores of five mean that the participant "strongly agrees" that he or she would leave the profession based on those reasons.

For the first statement "I plan to leave the teaching profession within the next five years," the majority of the respondents 11 (52.38%) at the beginning of the year responded that they would not leave the teaching profession in five years. Still the majority of the teachers seven (35.00%), yet lowered, stated they would not leave the teaching profession in five years at the middle of the academic year. Finally, the number of respondents who would not leave the profession in the next five years slightly increased at the end of the year, eight (40.00%). The frequencies for this item are displayed in Table 10.

Table 10. *Percent of Responses to the Statement "I plan to leave the teaching profession within the next 5 years."*

<i>Response</i>	<i>Pre</i>	<i>Mid</i>	<i>Post</i>
	<i>(N = 21)</i>	<i>(N = 20)</i>	<i>(N = 20)</i>
	<i>Frequency (%)</i>	<i>Frequency (%)</i>	<i>Frequency (%)</i>
1 (Strongly Disagree)	11 (52.38%)	7 (35.00%)	8 (40.00%)
2	3 (14.29%)	6 (30.00%)	5 (25.00%)
3	6 (28.57%)	6 (30.00%)	2 (10.00%)
4	0 (0.00%)	0 (0.00%)	3 (15.00%)
5 (Strongly Agree)	1 (4.76%)	1 (5.00%)	2 (10.00%)

Next, the teachers were asked to respond to the statement “I plan to leave the teaching profession and pursue a job in administration.” The majority of the teachers would not leave their current position to pursue an administrative position at either pre, mid, or post with 12 (57.14%), 13 (65.00%), and eight (40.00%), respectively. The frequencies for this survey item are shown in Table 11.

Table 11. *Percent of Responses to the Statement "I plan to leave the teaching profession and pursue a job in administration."*

<i>Response</i>	<i>Pre</i>	<i>Mid</i>	<i>Post</i>
	<i>(N = 21)</i>	<i>(N = 20)</i>	<i>(N = 20)</i>
	<i>Frequency (%)</i>	<i>Frequency (%)</i>	<i>Frequency (%)</i>
1 (Strongly Disagree)	12 (57.14%)	13 (65.00%)	8 (40.00%)
2	4 (19.05%)	1 (5.00%)	5 (25.00%)
3	4 (19.05%)	3 (15.00%)	2 (10.00%)
4	1 (4.76%)	3 (15.00%)	3 (15.00%)
5 (Strongly Agree)	0 (0.00%)	0 (0.00%)	2 (10.00%)

For the third statement “I plan to leave the teaching position for a teaching position in another school district,” the majority of the respondents nine (42.86%) responded that they were neutral towards their decision to leave their current teaching position for another school district. Similarly, most of the teachers eight (40.00%) continued to feel neutral towards moving to another school district in the middle of the year. By the end of the academic year, the majority of the participants six (30.00%) stated that they would not leave their current teaching position for another school district. The frequencies for this survey item are displayed in Table 12.

Table 12. *Percent of Responses to the Statement “I plan to leave the teaching position for a teaching position in another school district.”*

<i>Response</i>	<i>Pre</i>	<i>Mid</i>	<i>Post</i>
	<i>(N = 21)</i>	<i>(N = 20)</i>	<i>(N = 20)</i>
	<i>Frequency (%)</i>	<i>Frequency (%)</i>	<i>Frequency (%)</i>
1 (Strongly Disagree)	8 (38.10%)	4 (20.00%)	6 (30.00%)
2	2 (9.52%)	5 (25.00%)	4 (20.00%)
3	9 (42.86%)	8 (40.00%)	4 (20.00%)
4	2 (9.52%)	3 (15.00%)	4 (20.00%)
5 (Strongly Agree)	0 (0.00%)	0 (0.00%)	2 (10.00%)

The next statement, “I plan to leave the teaching position for a teaching position in another state,” showed the majority of teachers were neutral towards the thought of teaching in another state at the beginning and middle of the year with nine (42.86%) and seven (35.00%), respectively. However, most of the respondents ten (50.00%) stated they would not leave their current teaching position for teaching position in another state at the end of the academic year. The frequencies for this survey item are shown in Table 13.

Table 13. *Percent of Responses to the Statement “I plan to leave the teaching position for a teaching position in another state.”*

<i>Response</i>	<i>Pre</i>	<i>Mid</i>	<i>Post</i>
	<i>(N = 21)</i>	<i>(N = 20)</i>	<i>(N = 20)</i>
	<i>Frequency (%)</i>	<i>Frequency (%)</i>	<i>Frequency (%)</i>
1 (Strongly Disagree)	7 (33.33%)	4 (20.00%)	10 (50.00%)
2	3 (14.29%)	6 (30.00%)	2 (10.00%)
3	9 (42.86%)	7 (35.00%)	3 (15.00%)
4	2 (9.52%)	3 (15.00%)	4 (20.00%)
5 (Strongly Agree)	0 (0.00%)	0 (0.00%)	1 (5.00%)

In the final statement “I would recommend the teaching profession to my students,” most of the respondents 11 (52.38%) would highly recommend the teaching profession to their students at the beginning of the year. At the middle and end of the school year, the majority of the teachers would still recommend the profession for their students with 11 (55.00%) and ten (50.00%), respectively. The frequencies for this survey item are displayed in Table 14.

Table 14. *Percent of Responses to the Statement “I would recommend the teaching profession to my students.”*

<i>Response</i>	<i>Pre</i>	<i>Mid</i>	<i>Post</i>
	<i>(N = 21)</i>	<i>(N = 20)</i>	<i>(N = 20)</i>
	<i>Frequency (%)</i>	<i>Frequency (%)</i>	<i>Frequency (%)</i>
1 (Strongly Disagree)	0 (0.00%)	0 (0.00%)	1 (5.00%)
2	0 (0.00%)	2 (10.00%)	1 (5.00%)
3	5 (23.81%)	3 (15.00%)	3 (15.00%)
4	5 (23.81%)	11 (55.00%)	10 (50.00%)
5 (Strongly Agree)	11 (52.38%)	4 (20.00%)	5 (25.00%)

The final portion of the Teacher Attrition Survey asked the respondents to rank five of the factors (personal factors, working conditions, salary, accountability, and preparation factors) on a scale that would least likely to most likely to cause them to leave the profession. A score of one indicated that the factor was least likely to cause them to leave the profession. The teachers were most likely to leave the profession if they rated the factor with a score of five. The mean and standard deviations for each factor for the pre, mid, and post surveys are displayed in Table 15. Responses are ordered from most likely to cause teachers to leave to least likely to cause them to leave at the end of the school year.

Table 15. *Ranking Means and Standard Deviations at Pre, Mid, and Post for Reasons Teachers Would Leave the Profession*

<i>Factor</i>	<i>PRE</i>		<i>MID</i>		<i>POST</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Personal Factors	4.05	1.36	3.85	1.53	4.15	1.42
Working Conditions	3.67	1.20	3.90	.91	3.40	1.31
Salary	2.38	2.62	3.05	1.43	3.35	1.23
Accountability	2.62	1.28	3.20	1.24	2.60	1.10
Teacher Preparation	1.95	1.20	2.30	1.38	2.25	1.45

Pre ($N = 21$), Mid ($N = 20$), Post ($N = 20$). Respondents ranked each item using on a 5-point scale (1 = least likely to cause teachers to leave, 5 = most likely to cause teachers to leave).

Triangulation of Interview Responses and Survey Data. Table 16 illustrates interpretations of content analysis of the teacher interviews and survey responses. This side-by-side comparison demonstrates how beginning teachers' intentions to leave the field of education based on the Teacher Attrition Survey relates to their perceptions of its impact from interview responses. The factors are arranged in ranking order from the highest to lowest mean scores at the end of the academic year (post). Quotes from the interviews were used to construct meaning to those scores. This visual represents a clear comparison of quantitative and qualitative results and how the two data sources support one another's findings. As denoted by the "+" in Table 16, interview respondents voiced administration support as the most salient reason for leaving their schools. Yielding the highest mean score ($M = 2.98$), results from the online survey also found administrative support to be the most influential factor on their intentions to stay or leave. According to Table 16, the second highest factor impacting survey participants' decisions to stay or leave their high need school is personal factors ($M = 2.84$). Similarly, many interview respondents, but slightly less teachers than those reporting administrative support, discussed personal factors as having potential influences on their decision to leave. This trend showing decreases in survey factor means scores paralleling with decreases in factor influences for interview respondents continue throughout the table. As displayed in Table 16, teacher preparation was the least influential on beginning teachers' decision to leave. There were no interview respondents who discussed teacher preparation as having an impact on their decision and this factor also had the lowest mean score ($M = 1.98$) on the survey.

Overall, it should be noted that both survey responses and interview transcripts provide evidence that none of these factors had immediate impacts on their decision. According to the survey results, none of the responses fell within the range of three to five, meaning the teachers

would not leave their current school based on any of these factors. Similarly, most of the teachers in the interview claimed that they did not see themselves leaving their school within three to five years. Therefore, results from both data sources suggest that these factors might influence their decisions in the future, but the majority of the teachers from high need schools do not view these elements as immediate threats to their position.

Table 16. *Interpretation of Survey and Interview Triangulation*

Factor	POST Mean (n = 23)	UNIV-A (n = 6)						UNIV-B (n = 5)				
		Zoey	Madison	Julep	Daniel	Ava	Daisy	Sadie	Chloe	Harper	Steven	Kyle
Administrative Support	2.98	(+)	(+)	(+)	(+)	(+)	(+)	(-)	(+)	(+)	(+)	(+)
Personal Factors	2.84	(-)	(+)	(-)	(+)	(+)	(-)	(+)	(+)	(+)	(+)	(+)
Salary	2.45	(-)	(-)	(-)	(+)	(-)	(-)	(+)	(-)	(-)	(-)	(-)
Accountability	2.41	(+)	(-)	(-)	(+)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Working Conditions	2.09	(-)	(-)	(-)	(-)	(+)	(-)	(-)	(-)	(-)	(+)	(-)
Teacher Preparation	1.98	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

Note: (+) denotes factor would impact teachers' decisions to leave based on participant quotes (-) represents factor would not impact teachers' decisions to leave based on participant quotes

Results of Focus Group

Existing focus group transcripts were also used to support interview findings. In particular, the two data sources were paralleled exploring the teachers' experiences with induction and the types of support offered by the program. Individual interviews and focus group findings were compared because their combination contributed to a more nuanced understanding of the participants' experiences with the programs.

Beginning Teachers' Experiences with Induction. Similar to the individual interviews, the teachers who participated in the focus groups expressed mostly positive experiences with the induction programs. For instance, Daisy (Univ-A) briefly discussed how induction made her learn and grow, which was especially important as a first year teacher. She said:

I would come to the induction meetings because I felt like I could learn from them and grow from them because I was still figuring out what I was doing in my job and how I could get better and be more effective in the classroom. (Daisy, Univ-A)

Many of the teachers also reported dissatisfaction of other professional development meetings; however, they viewed induction as different from those other models. When providing a comparison between the induction program and the other models, Olive (Univ-B) believed induction had higher-level thinking. She said:

Personally I felt that the Noyce meetings were set at a higher level of thinking and discussion, more critical thinking going on than when just meeting with people in your school. I feel like a lot of the times I'm meeting with maybe my lead...I feel like they're talking down to me like they're breaking it down for me a little too simple...I just felt that [at] Noyce...more mature discussions are happening. (Olive, Univ-B)

Benefits of the induction program. Like the interview respondents, many teachers from the focus groups thought the structure of the induction program was beneficial. For instance, Sadie (Univ-B) said, “I think a lot of our protocols that we went through, I thought were really great, and sometimes I wish there were more of them.” Specifically, many teachers from the focus groups described the benefits of using the descriptive consultancy protocol, which utilized a problem-solving procedure. Olive (Univ-B) said, “I thought the whole problem solving one...was really good for me, I’d never done anything like that before and it helped me to identify problems in other areas and try to come up with resolutions for other areas as well.”

Jerrie (Univ-A) expressed the same appreciation for the success analysis protocol. She compared her experience this year to her experience with induction last year. Jerrie (Univ-A) said:

I think in comparison to last year, when we added in the success stories, I think it was a lot more positive when you left than just doing the problem scenarios so it was definitely more encouraging. If you had a bad day, you felt more refreshed afterwards.

In addition to overall appreciation for the protocols, Jerrie (Univ-A) and some of the other teachers thought having shared experiences with their induction colleagues helped develop a trusting environment. In particular, Jamie (Univ-B) enjoyed participating in a professional development program where all of the teachers had degrees in education. In her school environment, many of her colleagues did not have backgrounds in education.

Finally, teachers from the online induction program also described how the induction program promoted the development of a community. For example, Hazel (Univ-B) described how having professional development outside of her school environment helped establish a better community for her. She said, “Here it’s pretty anonymous and we can fully speak our

mind, whereas we might hold back if we were talking to a colleague at our own school.” (Hazel, Univ-B)

Limitations of the induction program. During the focus groups, the teachers were also asked to describe some of the challenges of the programs. According to the teachers, the two main disadvantages were structural and the programs’ limited reach. These results confirm findings from interview data. First, some of the teachers from the face-to-face induction program commented on how it was a challenge to make it to every meeting. Madison (Univ-A) said, “I had to miss two meetings for the Noyce and it was due to a time conflict for the volunteer thing, but otherwise if I could have come to the meetings, I would have been here.” Additionally, teachers from the face-to-face induction meetings also reported some challenges with the protocols. Specifically, many of the teachers believed the protocols inhibited the natural flow of conversations. Jameson (Univ-A) said:

I always have to be focused on if I am saying something and I just feel very, I don’t know I feel stressed...I think it’s too much structure like all of the protocols seem very cumbersome to me and they hold back my creativity and thought processes.

Given the programs limited reach, the teachers also expressed an interest in having someone from the university act as a liaison or observe some of their classrooms. Steven (Univ-B) liked the possibility of being observed by someone from Noyce induction. In addition to obtaining supplementary assistance through school visits from Noyce induction members, some of the teachers from the online program thought it would be beneficial to share lessons outside of the meetings. Hazel (Univ-B) believed this could be established through programs such as Google Drive. She said:

I think having some type of file sharing like either having our own folder on Google

Drive or whatever then other people can put in what they use, here's an example of what I use for that particular activity. That way we can more easily share our ideas. (Hazel, Univ-B)

Generally, the teachers from the focus groups reported positive experiences with their induction programs. These results were similar to those reported during the individual interviews. According to the teachers in the focus group, the induction program was better than professional development offered at their schools. Some of the reasoning behind this statement included the teachers expressed appreciation for the structure and organization of the meetings, the group dynamics, and the development of meaningful relationships with teachers having similar professional experiences. However, the teachers were also asked to report any negative aspects of induction and recommendations for improvement. Mainly, the teachers critiqued some components of the meeting structure and the limited reach of the program, which corresponds to the interview findings. Specifically, the teachers believed the protocols could hinder the flow of the conversation and they wanted in-person classroom visits from induction members.

Types of Program Supports. Using the same support categories as the interview data, the following focus group passages were used to explore the types of induction support experienced by participants. Quotations from the induction focus groups were used to provide voice to the beginning teachers' perceptions of those supports.

First, Daisy (Univ-A) briefly discussed how participation in the induction program provided emotional and personal supports. Daisy (Univ-A) said:

I didn't know if I was doing anything right and I didn't know how to ask if I'm doing anything right. And then I could come here [induction] and present a successful

lesson...and this kind of helped me [with] ideas and inspiration and all of those things.

(Daisy, Univ-A)

Many teachers from both induction programs also provided evidence of pedagogical support. Specifically, Madison (Univ-A) discussed how an induction member's lesson influenced her own practice. She said:

I think Jameson (Univ-A) had a cool lesson with movement. I remember something with math and that inspired me and I did a scavenger hunt around the school and the kids were like, this is the best! Our teachers never let us out of the classroom! (Madison, Univ-A)

In addition to instructional sharing, Daisy (Univ-A) also discussed how induction made her more critical and reflective of others' materials so she could use that information to inform her practice. She said:

It was nice to pinpoint the different parts of the lesson that made it successful because then no matter what topic or subject you are teaching, you can always take those key concepts that were fundamental in the lesson and adapt them to something that you wanted to do. (Daisy, Univ-A)

In addition to instructional supports, task and problem-focused support were also discussed during the focus groups. The presentation of a problem and brainstorming possible solutions provided the teachers with support during their first or second year of teaching. Hazel (Univ-B) elaborated on the types of problems induction was helped elevate. She said:

I think that the Noyce program helps you solve or at least discuss like broader issues; whereas, the supports that I have in my school are the people that I'm going to go to for a very specific problem, but Noyce is where I would go for an ongoing multifaceted kind of issue. (Hazel, Univ-B)

Overall, the teachers from the focus groups provided examples of how induction provided them various supports including personal and emotional, pedagogical, task/problem-focused, and critical/reflective practice. Specifically, the teachers provided numerous examples of strategies they implemented or plan to implement next year as a result of a resource presented during the induction meetings. These findings confirm similar results to the interview data.

Summary

This study's four research questions sought to explore beginning teachers' experiences with two university-based PLC induction programs. Specifically, for teachers serving high need schools and school districts. First, this study explored the teachers' general experiences with their corresponding Noyce induction program. Overall, most of the teachers had a positive experience with their program. For many, the program provided the beginning teachers with worthwhile support unlike any professional development offered by their school or school district. Some of the benefits of the induction programs included: the structure of the meetings, relationships with familiar colleagues who were experiencing similar circumstances, and the development of a safe and trusting community. However, some of the teachers reported neutral or negative experiences with the program. In one case, the induction program invoked anxiety and did not offer support. This teacher also reported an unwillingness to "buy in" to the program as he felt it was a waste of time. Generally, the teachers reported factors such as the program's limited reach, structural problems, and some issues with developing a community as the main challenges of both programs. The teachers offered recommendations for how the induction programs could improve on their limitations, such as adding conversational pieces within the protocols. Nevertheless, the majority of the teachers would recommend their induction program to other beginning teachers, especially those serving high need schools.

The second research question sought to determine the types of support experienced by the beginning teachers. Using previously cited support structures, four types of supports were examined: personal and emotional support, pedagogical support, task/problem-focused support, and critical/reflective practice support. The majority of the teachers discussed having increased personal and emotional support, as they believed induction was similar to a therapy session. Often times, this was accomplished through shared experiences, empathetic listening, pedagogy affirmation, self-confidence boosts, or improvements towards a positive mindset. Additionally, the teachers described multiple ways induction helped with instructional supports, such as dissemination of resources and guidance with ideas. Given that the teachers participated in the descriptive consultancy protocol (McDonald et al., 2007), which utilized problem-solving techniques, many teachers discussed learning new approaches to solving specific problems. In most cases, the teachers believed the structured environment assisted in finding solutions to problems rather than having unconstructive conversations. Finally, multiple teachers described instances where induction promoted self-reflection of previous, current, and potential issues in their schools or with their practice. In many cases, the teachers provided explanations of how the protocols guided them to self-learning.

The third research question explored the challenges associated with being a beginning teacher at a high need school or school district. Additionally, the teachers were asked to describe how particular challenges within their school context would impact their decision to stay or leave their current school. Lastly, the teachers reported on the extent to which induction's influenced on their decision to stay or leave. Generally, the teachers did not intend to leave their teaching position within five years. Furthermore, the teachers were unlikely to search for a job in another state, school district, or an administrative position. However, results from the survey indicated

that administrative support and personal factors had the largest impact on the teachers' decisions to leave the field. The interviews yielded similar findings. The majority of teachers would leave their current position to pursue better or more stable administration. If the teacher already had a positive experience with their administration, they would consider leaving their current school to follow their administration. Positive relationships with colleagues were the reason one teacher decided to remain at his current school. However, most of the teachers did not express colleagues having a strong impact on their decision to stay or leave their current school. Sometimes personal factors such as spousal relocation, familial illness, or educational pursuits would impact the teachers' decision to leave their current placements. Of note, fewer teachers described monetary or accountability reasons for leaving their current school; however, depending on the amount of money or level of standardized testing pressures, some teachers would leave their current school. The schools' working conditions had some impact on a few of the teachers. Specifically, some of the teachers would leave their school if they got "burnt out" from teaching multiple preparations or the amount of responsibilities continued to increase. Yet, feelings of isolation and the community's perception of their school were not reasons the novice teachers would leave their particular schools. Lastly, the teachers reported on their relationships with their students, particularly those students of different racial backgrounds. Although the teachers and students had misconceptions of one another, racial name-calling occurred, and there were linguistic challenges, the students were the main reason most of the interviewed teachers would stay at their schools. In conclusion, the beginning teachers experienced many challenges early in their careers; yet, induction had a large enough impact on some of the teachers' decision to stay. One teacher believed Noyce, as a whole, was the reason she would continue to teach at a high need

school. While the remaining teachers thought induction was slightly less impactful due to extrinsic factors and had little to no influence on their decision.

The final research question sought to explore the teachers' experience with face-to-face and online methods of program delivery. The teachers were asked to describe advantages and disadvantages with face-to-face and online methods of program delivery as well as report their overall preference. Generally, the teachers reported on four major advantages to the face-to-face method of program delivery: accountability, fluidity, community building, and opportunity for impromptu conversations. The teachers from both universities stated that face-to-face induction models were less convenient than online models, which was the biggest advantage to virtual induction programs. When discussing challenges associated with an online program, the teachers from both programs talked about three main issues including: increased distractions, technology issues, and broken conversations. When asked, the majority of the beginning teachers chose the face-to-face method of program delivery as their preference.

Chapter 5: Conclusions and Implications

This chapter presents a discussion of the findings surrounding beginning teachers' experiences with a university-based PLC induction program when employed at a high need school district. Individual interviews were the primary data source used to explore beginning teachers' experiences with the induction programs. In particular, this study investigated the types of supports offered by induction, the teachers' intentions to stay or leave their high need school, and benefits and challenges associated with face-to-face and online program delivery methods. Therefore, the first section of this chapter discusses the findings of this study by addressing the four research questions and relevant literature. The other sections of this chapter include implications for future research, study limitations, and a conclusion.

Discussion of Findings

The induction programs for this study were intended to function as learning communities for novice teachers. As such, the professional learning community framework was interwoven into the following discussion. According to the literature, professional learning communities serve as vehicle for teachers to share and critically examine their practice, develop their knowledge base, collaboratively deal with issues, and provide each other support (Fresko & Nasser-Abu Alhija, 2014). Using this framework to guide this study, four research questions were posed: (1) What experiences do beginning teachers from high need schools have with university-based PLC induction; (2) how do beginning teachers from high need schools perceive induction support; (3) how does PLC-based induction influence teachers' intentions to stay or leave high need schools; and (4) what are teachers' experiences with face-to-face or online delivery of induction?

Research Question 1

The results from this research question show that beginning teachers generally had positive experiences with the induction programs. One benefit extensively discussed by the teachers was the structure of the meetings. Guided by the professional learning community framework and McDonald et al. (2007), the meetings were structured to promote a safe and trusting environment, allow for constructive collaboration between its members, and emphasize reflective dialogue (Dufour, 2004; Fresko & Nasser-Abu Alhija, 2014; Stoll et al., 2006). Similar to the literature, the teachers also believed that structured protocols assisted with moving conversations towards productive resolutions rather than unconstructive sessions (McDonnough & Henschel, 2015; McDonald et al., 2007). The protocols allowed for the attention to be taken off of the individual participants and onto the problem or success, which allowed for deeper understandings as well as organized and unbiased discussions.

Although the majority of the teachers had positive experiences with induction, some of the teachers reported neutral or negative experiences with the program. A few of the teachers already had strong support systems or did not “buy in” to the program; therefore, induction had less of an impact on their first years of teaching. The largest challenge discussed by the teachers was the program’s limited reach. Although there are many benefits to housing the programs through the university (Fresko & Nasser-Abu Alhija, 2014; Hunt, 2014), the teachers often discussed issues within their school context and sometimes systematic issues within the district that induction cannot directly impact. Another disadvantage discussed by the teachers included negative interactions with certain group members. Since professional learning communities are reliant on the dynamic of the group, it was important to understand this negative relationship and its implications. According to the teachers from this study, having prior experiences with other

peers in the program allowed for adverse relationships with other group members to carry over from teacher preparation into the induction years. In turn, the lack of familiarity with certain group members outside of their Masters of Teaching cohort also had an impact on the development of a community. For some teachers, it took time to develop trusting relationships with their new colleagues, which was exacerbated when they frequently forgot each other's names. Nevertheless, the teachers were willing to offer suggestions for future program improvement, which informed this study's implications for future practice.

Research Question 2

The findings for this question show that induction offers different types of support for new teachers as they assume the roles and responsibilities associated with their new position. In the literature, Stansbury and Zimmerman (2010) believe an induction program should be viewed as a continuous support structure in which teachers are assisted during the transition from new to seasoned teacher. According to their theory, an induction program should begin with personal and emotional support, move towards task-specific or problem-related support, and end with being critically reflective (Stansbury & Zimmerman, 2010). The results of this question align with this theory and highlight the importance of a professional learning community on support structures.

The teachers in this study often compared the induction program to a "therapy session." As many of these teachers were assigned to challenging classroom situations, they used PLC induction as a platform to share their experiences, receive advice, gain new perspectives, receive assurance, and empathetically listen to their peers. According to Stansbury and Zimmerman (2010), this type of support does little to enhance teaching performance, yet it improves beginning teachers' personal and professional well-being. Based on this theory, personal and

emotional support should increase the likelihood that new teachers will remain in the field long enough to have the opportunity to become more effective teachers (Stansbury & Zimmerman, 2010).

As novice teachers are often stressed with challenges inherent to the workplace, it is important that they learn how to approach new tasks or issues with strategies for problem solving (Stansbury & Zimmerman, 2010). Therefore, the Descriptive Consultancy Protocol (McDonald et al., 2007), which utilizes explicit problem-solving steps, was used in both induction programs to assist teachers throughout their professional difficulties. Without going off topic, the teachers reported being able to discuss issues, brainstorm, and find solutions to their problems. Furthermore, the teachers found that listening to different perspectives and problem-solving strategies from other teachers in the PLC program helped them with their own problems whether they were presenter or participant. Bandura, Adams, and Beyer (1977) examined others' influences on behavioral change and expectations through vicarious experience. Similar to the teachers in this study, Bandura and colleagues (1977) found that vicarious experiences were just as influential on behaviors and expectations as those instilled from personal experiences. In addition, Stansbury and Zimmerman (2010) stated that problem-solving support could sometimes improve teaching performance and reduce levels of stress. Some of the teachers from this study reported instances where they would be more stressed without the problem-specific help of induction and the recommendations from the inductions meetings helped them gain a deeper understanding of their personal issues.

Another important type of support described in Stansbury and Zimmerman (2010) was critical reflection on teaching practice. According to their theory, beginning teachers can become skilled at independently identifying problems, consider alternative approaches to a particular

problem, analyze evidence, and ponder solutions. In this study, the hour and a half programs provided a structured timeframe wherein the teachers could reflect on issues or successes occurring in their classrooms. By listening to other participants' share their experiences or solutions, the beginning teachers reported instances where they would examine the information further to determine how to tweak it for their own setting. Induction encouraged beginning teachers to critically think about their practice and consider multiple ways to solve any given issue. According to Stansbury and Zimmerman (2010), critical self-reflection helps beginning teachers learn and become more action-oriented in their practice.

Finally, Odell (1986) and Fresko and Nasser-Abu Alhija (2014) described pedagogical-related support, which is important for beginning teachers who need assistance with instructional strategies, dissemination of resources, and guidance with ideas. Since many beginning teachers start their careers with few resources, PLC induction offered the teachers in this study an opportunity to learn about resources and materials used by peers in their field. This process reduced stress for the teachers, as they did not have to "reinvent the instructional wheel." Often, hearing other teachers' lessons inspired members of the PLC induction programs to improve their practice. By examining other teachers' lessons and sharing resources, the teachers felt more supported in planning strong and effective lessons.

Research Question 3

The results for this research question both support and oppose research on teachers' intentions to stay or leave their current school, especially for teachers in high-need and high-minority school systems. Unlike the literature where teacher turnover rates are up to 50% within five years of teaching (Saka et al., 2013), most of the teachers had no foreseeable intentions for leaving their current schools or school districts within these first years of teaching. However,

results from the survey and interviews provided evidence that some of the teachers might leave before retirement. To gain an understanding for causes of attrition, the teachers discussed various factors that would influence their decision to stay or leave a high need school.

In the literature, teachers discuss elements of positive and negative administrative support as a major indicator for their decisions to change or maintain schools (Boyd et al., 2011; Ladd, 2011). Further supported by Johnson and Birkleland (2003), this current study found that teachers would move around to search for or follow supportive administration. According to Boyd and colleagues (2011), this was because teachers favored a supportive and encouraging administration, but the quantitative data lacked a description on what that entailed. This study provides evidence to this gap in the literature. According to this study, teachers who experienced negative interactions with their administration reported instances of no formative or summative feedback, lack of administrative leadership, devaluing teacher's worth, and constant administrative turnover. In contrast, administration regarded positively by beginning teachers were willing to offer support from the very beginning of the year, stuck to their word, backed the teacher during difficult situations, and provided frequent observations and feedback. In this study, administrative support had the largest impact on teachers' decisions to stay or leave their current school and was the main reason one teacher already left her high need school.

When discussing other reasons they would leave, some teachers in this study reported challenges when interacting with students from different racial backgrounds. According to Renzulli and colleagues (2011), this can have implications on the levels of job satisfaction and eventual turnover rates. Mainly, the teachers in this study reported instances of racial misperceptions and linguistic difficulties. With growing minority populations within the United States (NCES, 2013), the number of minorities will increase and the number of native Standard

English speakers will likely decrease. Therefore, White teachers need to adjust their instructional delivery and cross-cultural interactions with students and families to be successful. In a study by Hill (2009) where African American Vernacular English and Standard English were examined in a classroom setting, it is recommended that a balance of nonstandard and Standard English be used when appropriate. Furthermore, some teachers described a desire to teach higher performing students or working in an environment similar to the one they attended. The choice to pursue employment in a similar school system was previously explored in Boyd et al. (2005b). Though teachers in this study reported low levels of student demographics as an influence on their intentions to stay or leave, this finding reinforces the notion that high-minority and impoverished school systems are challenged with retaining largely White and middle-class teachers.

Teachers in this study also reported the extent to which other factors such as collegial support, financial incentives, accountability, and working conditions impacted their decision to stay or leave their current school. Although these factors are frequently cited in the literature as having an influence in teachers' decisions (Guarino et al., 2006; Ingersoll, 2012; Quartz et al., 2008; Saka et al., 2009), the majority of participants stated that these elements were not vital in their decision to stay or leave.

Finally, this study examined the influence of PLC induction on beginning teachers' decisions to stay or leave their current high need school as the literature is currently lacking research in this area. In sum, some teachers in this program believed induction had a direct impact on their decision to stay. However, many teachers believed extrinsic factors, uncontrollable by this professional learning community, would likely have a larger impact on their decision to stay or leave.

Research Question 4

The findings for this research question validate the literature supporting the notion that PLC programs should be held in-person when possible to enhance the learning community. Similar to Schuck (2003), the teachers from both induction programs preferred face-to-face over online formats because they established more personal experiences with their peers. According to O'Malley (2010), in-person conversations enhanced the development of respect, sense of trust, and appreciation for colleagues in the PLC model. Teachers from the face-to-face program also highlighted the influence of food on the development of a community. Similarly to Purnell and Jenkins (2013), the teachers in the face-to-face program discussed how food served as a way to share stories with one another and increased a sense of familial connections. While getting their food, the teachers were able to have more relaxed conversations with one another before the start of the meetings, which promoted impromptu personal or professional conversations.

With teachers employed across multiple states, the teachers at Univ-B realized that virtual induction programs had to replace face-to-face interactions. A major advantage to the online format was the convenience of the program and the ability to continue communication with colleagues from the university after graduation. Digital convenience allows teachers to access online portals from home, school, and anywhere with Internet connection. So, the teachers from the online program said this made the meetings easier to attend. However, the teachers also reported many disadvantages associated with the online induction meetings. According to Dalgarno and Colgan (2007), effective online communication and learning occurs when members feel a connection with the group. The lack of social awareness inhibited by only viewing one participant on the screen at a time made it challenging to build trusting relationships in the online learning community. This was exacerbated whenever technology issues transpired.

Wilson and Whitelock (1998) found that learning was dependent on the immediate accessibility of information, assistance, and feedback. Therefore, the learning process is disrupted when interrupted by technological problems. In sum, the results from this study are consistent with previous findings recommending the establishment of face-to-face PLC programs when feasible, yet realizes the importance of having an online program.

Implications for Practice

University-based PLC induction programs allow teachers time to discuss with their peers and reflect on their practice in a familiar and unbiased setting. This is especially important for new teachers as they adjust to the new roles and responsibilities associated with the teaching profession. The information gathered from this study leads to several recommendations for other induction programs, specifically university-based PLC programs.

General Recommendations for University-Based PLC Induction Programs

1. Viewing induction as a continuation of their teacher preparation training was beneficial for the teachers in this study. Therefore, it is recommended to hold induction meetings through a university to allow beginning teachers opportunity to discuss sensitive issues about their working environment without fear of negative consequences or evaluations. These findings are also supported by Fresko and Nasser-Abu Alhija (2014).
2. When possible, induction programs should be delivered face-to-face. Although this is not feasible for all programs, incorporating at least one face-to-face meeting prior to the beginning of implementation would help participants develop relationships with their peer colleagues.
3. If the induction programs are held at a physical location and the budget allows, dinner should be offered. Teachers in the face-to-face model extensively discussed the benefits

of having dinner at the meetings including: monetary, lowering stress, increasing trust with colleagues, developing a sense of community, and increasing impromptu conversations about personal and professional issues. These results are supported by McConnell et al. (2013).

4. Utilizing McDonald et al. (2007) protocols provided these induction programs with the necessary structure to guide conversations towards constructive solutions. This structure was important for study participants employed in unstable working environments, such as high need school that experience high levels of turnover.

Recommendations for an Effective Meeting Structure in a University-Based Model

1. First meeting of the year should start with a community building exercise or ice breaker followed by the Norms Setting Protocol to enhance their relationship with peer colleagues (McDonald et al., 2007).
2. The interim meetings should begin with the Descriptive Consultancy Protocol and end with the Success Analysis Protocol (McDonald et. al, 2007). The teachers from this study preferred this format so they could productively discuss problems in their practice, but also leave the meetings more positive having ended with a success. The teachers viewed both protocols as equally advantageous, but the teachers also thought celebrating successes were unique and infrequent outside of induction.
3. Focus groups should conclude the annual meetings. This way, induction facilitators can adjust future meetings for the unique needs of their members.
4. The teachers had mixed feelings about the guest speaker. Although they enjoyed the concept of obtaining information from an expert, they did not view the delivery favorable.

If a guest speaker is used, it is recommended that they cater their discussions around the individual needs of the teachers rather than using direct instruction.

Recommendations for Positive Group Dynamics in a University-Based Model

1. Induction programs should have at least some members who are familiar with one another. In this case, using a cohort of teachers who took graduate level coursework together encouraged trusting relationships and a willingness to discuss delicate matters.
2. Furthermore, the teachers from this program were of similar age. According to Fresko and Nasser-Abu Alhija (2014), using peer participants with the same professional status helps with emotional support as they encounter similar situations where they lacked experience and knowledge.

3. The teachers from this study preferred having a homogenous makeup of teachers from high need settings. Although they represented slightly different levels of high need, the teachers felt supported by colleagues and could empathize with their situations.

Numerous teachers stated that colleagues in other settings often provided irrelevant information that could not be translated into the classroom, but since the teachers were all in similar working environments, they could use a lot of the information with sometimes only minor tweaks.

4. Finally, the programs should include similar content areas. Although these programs were not content-specific. The teachers felt like they could use a lot of the information presented by their colleagues because mathematics and science were so similar.

Implications for Future Research

To further examine university-based PLC induction programs, several future studies should be considered.

A Call for Future Research Examining Administration's Role with PLC-Based Induction

For many beginning teachers from this study and those from the literature (Boyd et al., 2011; Johnson & Birkleland, 2003; Ladd, 2011), both positive and negative administrative support had major implications on their intentions to stay or leave their high need school. As such, future studies should examine how induction can incorporate administration to decrease teacher attrition rates.

1. A replication study using this PLC model within the context of the school or district can be performed to understand if inclusion of administration or school colleagues yields similar or different study findings.
2. Given that many beginning teachers from this study lacked sufficient feedback from administration, a study is needed to examine how administration's involvement with professional learning communities can influence communication with beginning teachers.
3. A study is also needed to explore strategies for bridging university-based PLC induction with the school system to reduce the gap between school and university communication.

A Call for Future Research to Enhance School-Based Professional Development

Unfortunately, most teachers from this study discussed participating in ineffective school-based professional development. Adapting some of the recommendations for university-based PLC induction practice, future studies should explore PLC-based induction within the school context.

1. A study is needed to understand why school-based professional development is not perceived to be successful for teachers from high need schools.
2. Some teachers from this study believed the successful analysis protocol provided a positive outlook, which was frequently absent from traditional professional development.

Therefore, researchers should explore how sharing successful lessons during professional development influences beginning teachers' experiences with school-based programs.

Study Limitations

Some limitations exist that could impact the interpretations of results of this study. One of the main goals of induction was to retain highly qualified teachers for more than five years; however, the current study's timeframe only allowed researchers to understand novice teachers' intentions of staying or prematurely leaving the profession. This measure of retention was not as credible as tracking the teachers for at least the first five years after graduating from the university. This method would provide better evidence of the teachers' dedication to the profession. In general, self-reported measures were another limitation of the study. The quantitative survey and interview protocol involved self-reporting, which posed threats to the accuracy of the findings. For instance, teachers may have monitored their responses and provided more socially desirable responses rather than their true feelings. Using multiple beginning teachers' perspectives of the differing induction programs helped the researcher present accurate understandings of the induction programs.

Although participation in the induction program was voluntary, the different amounts of financial incentives across universities for induction attendance may have impacted results. For instance, there was a lower average attendance rate for teachers at Univ-A (66.67%) than Univ-B (85.19%). This dissimilarity might be due to financial motivation or technological convenience (i.e., face-to-face versus online) rather than intended program benefits. Consequently, internal and external motivation factors could have influenced to results based on those teachers who choose to attend the meetings. Further, motivation may have played a factor in survey completion and interviews. However, surveys were given during the induction meetings to

combat lower response rates and a pretest was used to monitor selection bias on the descriptive survey data. The researcher also developed a rapport with participants by attending monthly meetings at both sites to reduce any biases associated with the semi-structured interviews.

Another study challenge associated with online implementation was distractibility. Specifically during the Norms Setting Protocol, teachers from the virtual induction program appeared unfocused and at least one teacher was drawing on the screen for a large portion of the protocol. As reported by the interviewed teachers, having in-person sessions tended to hold the participants more accountable during the meetings. Another study limitation was participation. This was the result of having to ask the teachers to volunteer for interviews; yet, they have busy schedules. Therefore, this study was another demand upon the teachers' time. To allow teachers adequate amounts of time to respond to all constructs, survey and interview timeframes spanned over multiple weeks to allow teachers time to participate in data collection based on their schedules. In addition, participation in the induction programs and this study was voluntary; therefore, those who chose to participate may have differences than those who did not participate. Hence, subject bias was a threat for this study. A final limitation for this study was that interviewed teachers were asked to recall information across numerous months. This study would be stronger if data, such as journals after each meeting, were reported over the entire duration of the program.

Conclusion

Beginning teachers often experience challenges transitioning from student to teacher; therefore, this study is a call for universities to assist them during this change. This is especially vital for teachers in high need schools as they regularly work in unstable and challenging environments. Recommendations for practice and future research are highlighted in this chapter.

However, researchers should acknowledge the limitations of this study when interpreting results from this study and any future research building off of these findings.

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Appendix A

IMPLEMENTATION ANALYSIS: NORMS SETTING PROTOCOL A Comparative Case Study of Teacher Induction: VCU and W&M

University: _____	Date of Session: _____
Delivery Method: _____	Time: _____
Number of Teachers Present: _____	
<p>Rating Scale:</p> <p>N/A = Not Applicable</p> <p>0 = Not at all – does not implement step at all</p> <p>1 = Partially – implements step according to handbook, does not follow time recommendations, discussions do not stay focused</p>	<p>2 = Mostly – implements step according to handbook, does not follow time recommendations, discussions stay focused</p> <p>3 = Fully – implements step according to handbook, does not follow time recommendations, discussions stay focused</p>

Protocol Step and Description	Time	Facilitator Rating	Notes
Step 1: Brainstorming <i>Group brainstorms possible norms, lists the offerings</i>			
Step 2: Discussion <i>Anything to question or discuss</i>			
Step 3: Synthesis <i>Fine tune the list</i>			
Step 4: Consensus <i>Affirm a list, all group members can live with list</i>			

Total Implementation Score:	
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**IMPLEMENTATION ANALYSIS: SUCCESS ANALYSIS PROTOCOL
A Comparative Case Study of Teacher Induction: VCU and W&M**

University: _____	Date of Session: _____						
Delivery Method: _____	Time: _____						
Number of Teachers Present: _____							
Rating Scale:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; padding: 5px;">N/A = Not Applicable</td> <td style="width: 50%; padding: 5px;">2 = Mostly – implements step according to handbook, does not follow time recommendations, discussions stay focused</td> </tr> <tr> <td style="padding: 5px;">0 = Not at all – does not implement step at all</td> <td style="padding: 5px;">3 = Fully – implements step according to handbook, does not follow time recommendations, discussions stay focused</td> </tr> <tr> <td style="padding: 5px;">1 = Partially – implements step according to handbook, does not follow time recommendations, discussions do not stay focused</td> <td style="padding: 5px;"></td> </tr> </table>	N/A = Not Applicable	2 = Mostly – implements step according to handbook, does not follow time recommendations, discussions stay focused	0 = Not at all – does not implement step at all	3 = Fully – implements step according to handbook, does not follow time recommendations, discussions stay focused	1 = Partially – implements step according to handbook, does not follow time recommendations, discussions do not stay focused	
N/A = Not Applicable	2 = Mostly – implements step according to handbook, does not follow time recommendations, discussions stay focused						
0 = Not at all – does not implement step at all	3 = Fully – implements step according to handbook, does not follow time recommendations, discussions stay focused						
1 = Partially – implements step according to handbook, does not follow time recommendations, discussions do not stay focused							

Protocol Step and Description	Time	Facilitator Rating	Notes
Step 1: Sharing <i>Successful lesson is orally shared with group</i>			
Step 2: Analysis and discussion <i>Group reflects/discusses successful practices. Asks questions</i>			
Step 3: Compilation <i>Facilitator visually compiles list for group</i>			
Step 4: Reporting out <i>Group reads lists/adds anything additional</i>			
Step 5: Discussion <i>Facilitator promotes general discussion</i>			
Step 6: Debriefing <i>On protocol and successful lesson</i>			

Total Implementation Score:	
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**IMPLEMENTATION ANALYSIS: DESCRIPTIVE CONSULTANCY PROTOCOL
A Comparative Case Study of Teacher Induction: VCU and W&M**

University: _____	Date of Session: _____
Delivery Method: _____	Time: _____
Number of Teachers Present: _____	
Rating Scale:	<p>N/A = Not Applicable</p> <p>0 = Not at all – does not implement step at all</p> <p>1 = Partially – implements step according to handbook, does not follow time recommendations, discussions do not stay focused</p> <p>2 = Mostly – implements step according to handbook, does not follow time recommendations, discussions stay focused</p> <p>3 = Fully – implements step according to handbook, does not follow time recommendations, discussions stay focused</p>

Protocol Step and Description	Time	Facilitator Rating	Notes
Step 1: Problem presentation <i>Presenter shares issue with the group</i>			
Step 2: Clarifying questions <i>Other group members ask questions</i>			
Step 3: Reflecting back <i>Other group members state what they've heard and what additional information is needed</i>			
Step 4: Response <i>Presenter responds to additional questions</i>			
Step 5: Brainstorming <i>Other group members brainstorm possible solutions to the issue</i>			
Step 6: Response <i>Presenter states which solution ideas might be best for practice</i>			
Step 7: Debriefing <i>On protocol and solutions</i>			

Total Implementation Score:	
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IMPLEMENTATION ANALYSIS: GUEST SPEAKER
A Comparative Case Study of Teacher Induction: VCU and W&M

University: _____	Date of Session: _____
Delivery Method: _____	Time: _____
Number of Teachers Present: _____	
<p>Rating Scale:</p> <p style="margin-left: 40px;">N/A = Not Applicable</p> <p style="margin-left: 40px;">0 = Not at all – does not implement step at all</p> <p style="margin-left: 40px;">1 = Partially – implements step, does not follow time recommendations, discussions do not stay focused</p> <p style="margin-left: 40px;">2 = Mostly – implements step, does not follow time recommendations, discussions stay focused</p> <p style="margin-left: 40px;">3 = Fully – implements step, does not follow time recommendations, discussions stay focused</p>	

Procedures	Time	Guest Speaker Rating	Notes

Total Implementation Score:	
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Appendix B

INTERVIEW PROTOCOL

A Comparative Case Study on Teacher Induction: VCU and W&M

Hello, my name is Molly Henschel. I am a doctoral student at Virginia Commonwealth University. As part of my dissertation study, I am conducting research about beginning teachers' experiences with induction. This includes studying the method of delivery (i.e., face-to-face and online), the types of induction program supports, and any factors that may influence teachers' decisions about staying or leaving the profession. Additionally, this interview will ask questions regarding your current school environment, relationships with students, personal background, and perceptions of teaching. This study includes an individual interview, which will take approximately 60 minutes. Your participation is voluntary and you may skip any questions that you don't want to answer. This interview will be recorded for later transcription. Your name will not be recorded, I will use a fake name or pseudonym when analyzing and reporting the study results. All identifying information will be confidential, accessible only to me, and will be kept in a locked cabinet. Once transcription has been completed, all identifying information will be destroyed. Therefore, it is encouraged that you answer all questions honestly. Although I am involved with induction, I do not have any investments in the program. I will remain nonjudgmental and your responses will never be linked back to you. Do you have any questions about the study before we begin the interview?

[Start recording device]

1. Could you tell me your content area and grade level(s)?

For the purpose of this study a high need school is defined as any school with at least one of the following characteristics: 1) A high percentage of individuals from families with incomes below the poverty line; 2) a high percentage of secondary school teachers not teaching in the content area in which they were trained to teach; or 3) a high teacher turnover rate.

2. Based on the definition of a high need school, how does your school qualify as a high need school?
 - a. How has working in a high need school with (insert their classification) impacted your teaching?

(Probe: Is this a difficult factor of their job, is this a factor for staying or leaving your current school, has it influenced your feelings about teaching)

3. How would you describe the working conditions at your school?
(Probe: Is there a point where you feel unable to do your job based on these working conditions)
 - b. Could you briefly describe your school facilities?
(Probe: Are your facilities workable, what else would you need)
 - c. Could you briefly describe the leadership at your school?
(Probe: Could you talk more about that, does administration influence your commitment to stay in teaching, if students are brought up – talk about students and those interactions)
 - d. Could you briefly describe your relationship with colleagues at your school?
(Probe: Could you elaborate on what you mean, does your relationship impact your commitment to stay in teaching, how do they impact your feelings about teaching/the school/etc.)
 - e. Could you briefly describe your relationship with your students' parents?
(Probe: How do you contact them, do you reach out to all the parents the same way)
4. Could you tell me about your students?
(Probe: Do you find it difficult to teach a diverse group or would you prefer a more homogeneous group, what was the most difficult part about teaching these students, would the makeup of your students cause you to go to another school where it might be easier)
5. What is it like to interact with students from a different race/background than you?
 - f. How do you relate to students of different races?
(Probe: What does the interactions with these students look like, if they bring up “racist” – how do you ensure you’re not being racist, why do you think other teachers might be viewed as racist, what makes you different than the other teachers)
 - g. Have you had an experience or felt that your race became an issue while interacting with your students? Can you tell me about this?
 - h. How did other teachers in your school interact with students?
(Probe: What made your interactions and their interactions different)

- i. Have there been times when differences in you or your students' background, race, or culture been a source of stress? If so, please explain.
[Examples of stress include: classroom management, difficulty communicating with parents, feeling unsafe]
(Probe: How do you feel about that)
6. Overall, what is the most difficult part of teaching at your current school?
(Probe: Why? Can you elaborate?)

The next several questions will ask about your intentions to continue teaching in your current school.

7. Do you plan on teaching at your current school next year? How about in 3-5 years?
- j. If staying, what are your reasons for staying in your current school?
(Probe: could you elaborate, what does that mean)
 - k. If you left your current school, what reasons would you have for leaving?
 - l. If you left your current school, could you describe your next ideal teaching position?
(Probe: Would it still be at a high need school, similar demographic of students, what would look different?)
 - m. If you left your current school for a position outside of education, what would your next ideal job be?

The next set of questions will ask about your experience with the induction program.

8. Pretending I don't know anything about Noyce induction, could you describe the purpose of this program to me?
9. Could you describe your overall experience with induction?
10. How has participation in this induction program supported you during your (1st/2nd) year of teaching?
(Probe: Relate back to earlier discontent [e.g., administration, collaboration, etc.] – how has induction addressed issues with ___discontent___, if it hasn't – how could induction be changed to address those issues)
- a. Has induction provided you with any mental support? Problem-solving support? Reflective support? Transitional support into the profession? Any other types of support?
(Probe: How, could you elaborate)
 - b. Are there ways induction has not supported you that you wish it had?

- c. What aspects of this induction program do you find most beneficial? Why?
 - d. What aspects of this induction program do you find least beneficial? Why?
11. Please describe your relationship with other teachers in the induction program.
 12. What aspects of the induction program encourage the development of a community?
(Probe: how has it made you comfortable, how has it made you feel safe/trusted/willing to share, how are you able to collaborate with others, how does it promote reflection)
 13. Are there aspects of the induction program hinder the development of a community?
(Probe: make you uncomfortable, unsafe, not allow for collaboration or reflection)
 14. What suggestions do you have for creating a more supportive community?
 15. Your induction program currently meets (face-to-face/online), how has this method been beneficial for you?
 - n. Are there any challenges associated with this method?
 16. In what ways has the method of delivery influenced your relationship with colleagues in the program?
(Probe: Were there ever times when you did not connect with other teachers)
 17. How might meeting (OPPOSITE OF THEIR INDUCTION METHOD) change your experience with induction?
(Probe: Positives? Negatives?)
 18. How has participation in the induction program influenced your decision to stay or leave your current school?
 - o. Is there anything induction could have done differently to influence your decision?
 - p. Is there a way induction could be better at supporting your difficulties with teaching?

Thank you for your participation in this interview. In the event that I may need to follow-up with additional questions, I will email you. If you have any questions you can email me at mmadden@vcu.edu.

Appendix C

EMAIL RECRUITMENT SCRIPT

Hello [*Name of participant*],

My name is Molly Henschel and I'm a current doctoral student in Research and Evaluation at Virginia Commonwealth University. I'm currently working on my dissertation with Dr. Jacqueline McDonnough to explore beginning teachers' experiences with the Noyce induction program. We are doing a comparative study of two Noyce induction programs, Virginia Commonwealth University and William and Mary, with a focus on each program's method of delivery (i.e., face-to-face and online). We're hoping to learn more about how these methods of delivery impact your experiences with program supports and your intentions on staying, moving, or leaving the teaching profession. Please review the attached consent form for more information on this study. Please keep this consent form for your records. If you are interested in participating, please contact Molly Henschel at mmadden@vcu.edu to schedule a time for your interview.

Kindly,
Molly Henschel.

Appendix D

RESEARCH SUBJECT INFORMATION AND CONSENT FORM Noyce In-Service Teacher Induction

TITLE: A Comparative Case Study on Teacher Induction: VCU and W&M

VCU/W&M IRB NO.: _____

SPONSOR: National Science Foundation

Please ask researcher if you do not clearly understand any portion of this form. You may take home an unsigned copy of this consent form for your records.

PURPOSE OF THE STUDY

The purpose of this study is three-fold. First, the study will explore teachers' experiences with PLC-based induction. The researcher will compare experiences of teachers based on method of delivery (i.e., face-to-face and online). Second, this study will determine if a PLC-based induction program provides novice teachers' with multiple supports throughout their first years of teaching. Finally, this study will explore which factors, if any, have largest impact on teacher attrition within high need schools.

You are being asked to participate in this study because of your involvement with your university's Noyce induction program.

YOUR INVOLVEMENT

If you agree to participate in this study, the following information will be collected from you:

- **Interview:** At the conclusion of the induction program, you will participate in an interview regarding your overall experience with induction. You will also be asked questions about your working environment and which factors might influence your decision to leave the profession early in your career. Information from the interview will be reviewed for salient themes. The interviews will be recorded for later transcription. You will be allowed to review the transcripts and remove any statements you do not want included in the final version.
- **Retrospective data:** If you participated in any additional research (i.e., induction session tapings and surveys) associated with your university's induction program may be used for

this research. You are allowed to refuse the use of any previous data collected from the on-going Noyce study at your university.

Findings from this study will be reported in the researcher's dissertation and possible publications.

RISKS AND DISCOMFORTS

There is minimal risk associated with participation in this study. You have the option of discontinuing participation at any time without any penalty or negative consequences to you. In addition, you may refuse to answer any interview question for any reason without any negative consequences to you. If you decide to leave the interview prematurely or not respond to questions, you will not be penalized.

BENEFITS TO YOU AND OTHERS

You may not get any direct benefit from this study, but, the information we learn from this study may help us design a better induction program for future scholars. Further, this study might inform other induction programs around the world.

COSTS

There are no costs for participating in this study.

PAYMENT FOR PARTICIPATION

You will not receive payment for participating in this study.

ALTERNATIVES

The only alternative is to not participate in the study.

CONFIDENTIALITY

Your confidentiality will be protected. Pseudonyms will be created for all participants. All documents linking your real name to your pseudonyms will be kept in a locked file cabinet in the researcher's office. These documents will be destroyed before data analysis begins. All recordings of the interviews will be destroyed after transcription.

Data are being collected only for research purposes. Access to all data will be limited to study personnel. Comments shared in the interviews will be kept confidential.

We will not tell anyone the answers you give us; however, information from the study and the consent form signed by you may be looked at or copied for research or legal purposes by the sponsor of the research, or by Virginia Commonwealth University.

What we find from this study may be presented at meetings or published in papers, but your name will not ever be used in these presentations or papers.

Upon request, you will be allowed to review any recordings on which you appear. You may request that the researchers remove any statements that you have made on the recording without any penalty.

VOLUNTARY PARTICIPATION AND WITHDRAWAL

You do not have to participate in this study. If you choose to participate, you may stop at any time without any penalty. You may also choose not to answer particular questions that are asked in the study. Your decision to withdraw from the study will not involve any penalty. You may still participate in the induction program if you choose to not be a part of the research.

Your participation in this study may be stopped at any time by the study staff or the sponsor without your consent. The reasons might include:

- the study staff thinks it necessary for your health or safety;
- you have not followed study instructions;
- the sponsor has stopped the study; or
- administrative reasons require your withdrawal.

QUESTIONS

In the future, you may have questions about your participation in this study. If you have any questions, complaints, or concerns about the research, contact:

Molly M. Henschel
Doctoral Student
Virginia Commonwealth University
1015 West Main, Room 3076
PO Box 842020
Richmond, VA 23284-2012
mmadden@vcu.edu
540-312-8275

Jacqueline McDonnough, PhD.
Associate Professor Science Education
Virginia Commonwealth university
1015 West Main, Room 3076
PO Box 842020
Richmond, VA 23284-2012
jtmcdonnough@vcu.edu
804 827-2661

If you have any questions about your rights as a participant in this study, you may contact:

Office for Research
Virginia Commonwealth University
800 East Leigh Street, Suite 113
P.O. Box 980568
Richmond, VA 23298
Telephone: 804-827-2157

You may also contact this number for general questions, concerns or complaints about the research. Please call this number if you cannot reach the research team or wish to talk to someone else. Additional information about participation in research studies can be found at <http://www.research.vcu.edu/irb/volunteers.htm>.

CONSENT

I have been given the chance to read this consent form. I understand the information about this study. Questions that I wanted to ask about the study have been answered. My signature says that I am willing to participate] in this study. I will receive a copy of the consent form once I have agreed to participate.

Participant name printed	Participant signature	Date
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Name of Person Conducting Informed Consent
Discussion / Witness ³
(Printed)

Signature of Person Conducting Informed Consent Discussion / Witness	Date
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Principal Investigator Signature (Dissertation Chair)	Date
---	------

Appendix E

TEACHER ATTRITION SURVEY

Part I: Attrition Factors

For each of the following items, rate (on a scale of 1-5) the extent to which you believe the item would cause you to leave the profession within the next 5 years.

(1 = Would **not** cause you to leave the profession 5= Would cause you to leave the profession)

1. Birth/Adoption of a child.
2. Relocation of spouse/significant other.
3. Long-term illness of family member/self.
4. Other interest or career opportunity.
5. Lack of support/guidance of building administrator(s).
6. Not being treated with professionalism/respect by administration.
7. Being treated or viewed with lack of respect by community (teachers not seen as professionals).
8. Major student discipline problems
9. Lack of parental involvement
10. Not enough time for lesson plan
11. Pressure to take on roles outside contractual/teaching responsibilities (ex: department chair, hall or lunch duties, after school activities).
12. Salary lower than peers with similar degree.
13. No bonuses/regular raises.
14. Poor/inadequate benefits package.
15. Lack of reimbursement for tuition costs of advanced degree.
16. Lack of incentives (monetary or otherwise) for superior performance.
17. Lack of autonomy (able to make decision) in planning/pressure to focus on SOL material.
18. Pressure from administration/community for increased student performance on the SOL.
19. Amount of paper work/record keeping to track teacher/parent communications.
20. Increased job requirements.
21. Increased job training needed.
22. Feeling of being unprepared for the job of teaching by staff developments.
23. No/Ineffective mentor assigned to you.
24. Insufficient/Ineffective induction program offered to new teachers.
25. Insufficient/Ineffective staff development opportunities.
26. Difficulty obtaining state licensure.

Part II: Statement of Intention

(1 = Strongly Disagree 5 = Strongly Agree)

- 27. I plan to leave the teaching profession within the next 5 years.
- 28. I plan to leave teaching and pursue a job in school administration.
- 29. I plan to leave my teaching position for a teaching position in another school district.
- 30. I plan to leave my teaching position for a teaching position in another state.
- 31. I would recommend the teaching profession to my students.

Part III

(1=Least likely to cause teachers to leave, 6=Most likely to cause teachers to leave)

- 32. ____ Personal Reasons (birth of child, other career interest, etc.)
- 33. ____ Working Conditions (administration, planning time, etc.)
- 34. ____ Monetary Reasons (pay, benefits, incentives, etc.)
- 35. ____ Pressures of Accountability (pressure from CRCT tests, district-wide tests, No Child Left Behind)
- 36. ____ Preparation Factors (preparation for teaching, mentoring, etc.)

Appendix F

FOCUS GROUP PROTOCOL A Comparative Case Study on Teacher Induction: VCU and W&M

Thank you for agreeing to participate in this focus group. The purpose of the group is to collect your opinions of the (VCU/WM) Noyce induction program. The information learned during this focus group will be used to evaluate the program.

You can choose to stop or leave the focus group at any time. Although the focus group will be audio recorded, your responses will remain anonymous and no names will be mentioned in the report.

There are no right or wrong answers to the questions. We are interested in all of your viewpoints – both positive and negative. We want to hear many different viewpoints and would like to hear from everyone. We hope you can be honest, even when your responses may not be in agreement with the rest of the group. In respect for each other, we ask that only one individual speak at a time in the group. When responding to the questions, please be specific by describing issues and staff roles associated with the issue so that we can effect needed change. Each time you begin your response to the focus group questions please start by stating your first name; this helps to ensure that the session will be transcribed accurately. Responses made by all participants will be kept confidential. In the event that you haven't spoken in awhile, I may call on you for your opinion.

Induction Meeting Questions

1. What were your reasons for attending the monthly induction meetings?
2. Could you explain how particular induction activities were beneficial or not beneficial to your development as a teacher?
3. Which experiences with the (VCU/WM) Noyce induction program prepared you the most for teaching in high need schools?
4. How did you use information or skills you learned during the meetings in your classroom?
5. Were you offered other supports outside of the induction program during your first years of teaching? If so, what were the supports?

- a. How do the supports offered by the induction program compare with other supports you've received?
6. Could you explain how the induction program assisted in or hindered the development of a professional community?
 - a. How has the method of program delivery (face-to-face/online) influenced the development of a professional community?

Culturally Responsive Questions

7. How does race and/or culture play a role in your classroom?
8. Please describe a time in your classroom when personal assumptions or biases surfaced?
9. What factors have influenced educational or behavioral expectations for students in your classroom?

Working Environment

10. What are your attitudes about teaching now that you've been in the field at least a year?
 - a. Please describe which factors influence your attitudes about teaching.
11. What do you see yourself doing in 5 years? (make sure to get everyone's response)

Appendix G

CODEBOOK

Both predicted and emergent codes were used for this analysis. The provisional scheme is based from anticipated categories generated from literature reviews related to the study, the pilot study, and the study's research questions (Saldana, 2009). Open codes were produced through initial coding, which "remains open to all possible theoretical directions indicated by readings of the data" (Charmaz, 2006, p. 46).

When using this codebook, researchers should be mindful of applying codes based on what the teacher says directly in the transcript and not from implications. Codes may be applied to short phrases, single sentences, multiple sentences, or multiple paragraphs. When justified, codes can re-occur and can occur simultaneously with other codes. Researchers are encouraged to reread the data multiple times against the code descriptions, guidelines, and examples.

Open codes include the researcher's determination of categories while reading and rereading interview data. Other researchers are encouraged to apply their own open coding to data that is descriptive and not associated with corresponding literature.

Research Question 1: *What experiences do beginning teachers from high need schools have with university-based PLC induction?*

CODES FOR INDUCTION-RELATED QUOTES ONLY			
Category 1			
General Induction Experiences: Characteristics related to the teachers' involvement of the induction program			
OPEN CODES			
Code	Description	Clarification	Example
Induction: General Experience	General statements about their participation in induction	Reference to: <ul style="list-style-type: none"> • Great • Felt supported • Awesome • Never a waste of time • Different than anything else • Feeling accomplished • Wish others could attend 	“Induction has been a godsend and I wish that I had been able to have been to more this year.”
Induction: Structure	Any discussions regarding the structure of the meetings or protocols	Any reference to: <ul style="list-style-type: none"> • How the meetings are facilitated by the lead • The physical location or arrangement of meetings (<i>not method of program delivery</i>) • Meeting ‘time’/ time of day/ duration • Protocols • Group makeup 	“I think that the fact that the meetings are structured with the protocol allowed us to minimize the complaining and maximize the quality of learning from the situation.”
Induction: Benefits	Description of what they liked most or what they found beneficial to participating in induction Also, any response to the interview question which	Any reference to: <ul style="list-style-type: none"> • Empowerment • Financial/Monetary • Best part of induction • What’s been beneficial to them or others 	“Just getting to see people that I missed probably. And getting to talk a little bit and hear people that I respect talk a little bit.”

	asked what was most beneficial		
Induction: Negatives/Limits	<p>Descriptions of anything that the interviewee disliked, found least beneficial, or wished could be different regarding the induction meetings</p> <p>Also, any response to the question about what is least beneficial (even if it's I don't have any complaints)</p>	<ul style="list-style-type: none"> • Different teachers' school placements were not helpful or hindered experience • Too much time in between meetings/other structural problems/missing meetings • Suggestions for what induction is missing and should offer • Other ways they need help and are not getting it • Dislikes about guest speaker or other protocols • Limits to how induction could help with problems their experiencing 	<p>"I can't really think of anything that could be done that I didn't feel was done. There's nothing that Noyce can do like with the politics of my school so I feel like we're doing what we can."</p>
Induction: School Connections	<p>Anything learned during the induction meetings that the interviewee brought back or used in their school</p>	<ul style="list-style-type: none"> • Anything brought back or used in classroom or school • Pedagogy or resources learned from induction that they use outside of the meetings, in their school environment (instructional practices, dealing with parents, use of the protocols) 	<p>"I think I'm pretty unique in that in a lot of my classes I try to bring up classroom discussions at least once a week and I think that's pretty unique for a Math teacher. So, and those discussions have kind of developed into a trusting class and I actually learned that through the Noyce program because one of the kids talked about discussion circles that they'll trust in relationships."</p>

CODES FOR INDUCTION-RELATED QUOTES ONLY

<p align="center">Category 2 Characteristics of a Professional Learning Community: a group of people sharing and critically examining their practice in an ongoing, reflective, collaborative, and learning-oriented manner</p>				
Code	Sources	Description	Clarification	Example
Shared beliefs	Westheimer (1999) (Stoll et al. (2006)	A 'core of commonness' or communality that includes a collective perspective, agreed-upon definitions, and some agreement about values	<ul style="list-style-type: none"> • Shared history/culture • Common ideals • Shared norms and values 	"It was nice to hear from people who had a very similar background and education."
Interaction & participation	Westheimer (1999)	People are appropriately present and expected to be present, on many different occasions and in many different roles and aspects	<ul style="list-style-type: none"> • Are willing to interact and participate throughout the meeting 	"I think also by having certain protocols and stuff like we use, it encourages like more people to get involved and discuss."
Concern for Others	Westheimer (1999)	Concern for others and minority views	<ul style="list-style-type: none"> • Members of group don't agree, but are accepted • Embraces differences and suggests how they could change their view/lesson to reflect those differences 	"There's been things I think I have to tweak around if it's more for a middle school age group, try to figure out how to make it for a high school age group stuff like that. But everything has worked pretty well."
Meaningful Relationships	Westheimer (1999) (Stoll et al. (2006)	A sense of connectedness and purpose (togetherness) Development of trust and respect	<ul style="list-style-type: none"> • Members of group develop positive relationships, trust and respect others in group • Knowing they are not alone in a situation 	"I think the Noyce program creates a program, creates an environment where you just have no incentive to be dishonest."

			<ul style="list-style-type: none"> • Feeling comfortable with group 	
Reflective inquiry	(Stoll et al. (2006)	Colleagues' dialogue is deeply reflective	<ul style="list-style-type: none"> • Mutual examination and analysis of task • Learning occurring from others' shared personal experiences 	“Some of my colleagues have been having problems that have not occurred yet, hopefully not yet but possibly yet for me and so being able to watch it unfold and see and get other people's advice and listen to it allows me to have a little bit of preparation for any of issues that come up.”
Collaboration	(Stoll et al. (2006) Westheimer (1999)	Members participate together in discussion and decision-making, and who share certain practices (interdependence)	<ul style="list-style-type: none"> • Joint review and feedback 	“I was struggling with my workload at the beginning and a lot of people gave good advice, they're like why don't you have the students grade stuff. And for some reason I didn't think about that.”
OPEN CODES				
Code	Description	Clarification	Example	
Community Building:	Instances where the structure or	Community built through:	“Having food naturally encourages	

Encouragement	environment of induction meetings assist with the development of a community	<ul style="list-style-type: none"> • Having familiar people • Conversations <ul style="list-style-type: none"> ○ Outside of school environment • Food • Structure of the meeting 	conversation.”
Community Building: Limits	<p>Instances where the structure or environment of induction meetings interfere with the development of a community</p> <p>Could also be a way to improve the current community/suggestion</p>	<p>Specific negative links between community building and:</p> <ul style="list-style-type: none"> • Not knowing group member names • Structure of meeting (ex: distance between meeting) • Suggestions to improve the meetings’ sense of community 	“It might be good to kind of like team builder with the new people because I really like I don't even know even now, I don't think I even know the new teachers, the first year teachers’ names.”
Adverse Relationships	Instances where the group members of induction negatively impacted the teachers’ experience with the program	<ul style="list-style-type: none"> • Personal differences • Working in same school causes problems • Preconceived notions cause negative opinion 	“There are also people from my cohort who I very much dislike and it stresses me out when they show up to the meetings.”

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Research Question 2: *How do beginning teachers from high need schools perceive induction support?*

CODES FOR INDUCTION-RELATED QUOTES ONLY

Category 3

Types of Support: assistance or guidance to help one become successful

Code	Sources	Definition	Clarification	Example
Personal and Emotional Support	Stansbury & Zimmerman (2010) Odell (1986) Fresko & Nasser-Abu Alhija (2014)	Support in the form of a sounding board (<i>a group used to test reactions to something before trying it</i>), provide assurance, realize experience is “normal,” offer sympathy and prospective, and provide advice Teachers offered support through empathic listening and by sharing experiences	<ul style="list-style-type: none"> • Coping with frustration and issues • Strengthening self-confidence • Promoting motivation • Promotes personal and professional well-being • “Therapy session” <p><i>Does little for teacher performance, focus is on empathy</i></p>	“This year it has been helpful but I also got some motivation out of helping the first year teachers too.”
Task/Problem-Focused Support	Stansbury & Zimmerman (2010)	Help in knowing how to approach new tasks and solving specific problems	<ul style="list-style-type: none"> • Beginning teacher doesn’t have to reinvent the wheel, others are able to help with planning and accomplishing tasks • Example tasks include: lesson planning strategies, grading techniques, communicating with parents, specific student or school challenges <p><i>Focus is on help from others to work through a problem or task</i></p>	“It’s just a breath of fresh air to say your problems out loud to somebody else and for somebody else who might not be having that problem or might be having that problem and find a solution, getting a second opinion, and

				finding other perspectives so that you're not just stuck in your own classroom because it's very easy to get very down and stuck there.”
Critical/Reflective Practice Support	Stansbury & Zimmerman (2010)	With guidance from others, individual teachers are able to self-reflect	<ul style="list-style-type: none"> • Individual teacher is now able to propose and analyze various options for addressing issue on their own • Individual teacher can identify and analyze evidence that provides the most information about a problem • Individual teacher can consider alternative solutions <p><i>Thinking critically about own teaching based on induction – more self-reflective</i></p>	“That’s helped me in just my self-learning, because I can just take a step back and like really listen to every single word that they're saying and unfortunately administration didn't take it with open arms kind of when I asked them about it, but hopefully maybe they'll come around.”
Pedagogical Support (Resource/Material, Instruction, Classroom Management)	Fresko & Nasser-Abu Alhija (2014) Odell (1986)	Support through teaching strategies or instructional practice, dissemination of materials/resources, guidance and	<ul style="list-style-type: none"> • Support with: • Resources/materials • Preparing lessons/instruction • Adapting practices for pupil’s needs • Time and 	“It kind of helps de-stress and well, we'll share resources with each

Support)		ideas related to discipline or to scheduling, planning, and organizing the school day	classroom management	other because we all teach the same stuff.”
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Research Question 3: *How does participation in induction programs impact beginning teachers’ decisions to stay or leave high need schools?*

CODES FOR QUOTES ABOUT SCHOOL CONTEXT (NOT INDUCTION-RELATED)				
Category 4				
Characteristics Associated with Teachers’ Decision to Stay or Leave: Refers to the reasons teachers remain in their schools/profession or voluntary/involuntarily exit (turnover)				
Code	Sources	Definition	Clarification	Example
Reality Shock	Veenman (1984)	The collapse of the missionary ideals formed during teacher training by the harsh and rude reality of everyday classroom life	<ul style="list-style-type: none"> • Changes of teaching behavior (external pressures cause changes to ideal teaching behavior) • Changes in attitudes (changes in teacher belief system) • Changes in personality (changes in the emotional domain and self-concept) • Leaving the profession (disillusion so great, teacher leaves profession early) • Perceptions of problems (complains about workload, stress, and psychological 	“I used to think like, like at the beginning of the year, oh no, I've got this thing all wrong, I'm not supposed to be a teacher, oh my gosh, I did the whole wrong thing.”

			and physical complaints)	
THE FOLLOWING CAN BE EITHER POSITIVE OR NEGATIVE ATTITUDES				
Teacher Personal Factors	Kersaint et al. (2007)	These factors include child rearing, marriage, family, health of self and others, and relocations	Any factor unrelated to the school context	“Simply just getting married and it was easier for me to move than my spouse.”
Working Conditions	Guarino et al. (2006) Berry et al. (2008)	Organizational characteristics of a school	Factors such as: <ul style="list-style-type: none"> • Class sizes • Class assignment • Level of teacher autonomy • School facilities • Structural and physical aspects of the classroom • Norms and values • Presence and quality of resources • School culture • Admin/Teacher (not affiliated with support) 	“There are little quirks to being a campus style school but that’s not hugely like an issue.”
Administrative or Collegial Support (Positive)	Borman & Dowling (2008)	The school’s effectiveness in assisting teacher with issues	Any positive factor relating to: <ul style="list-style-type: none"> • Student discipline • Instructional methods • Curriculum • Support with parents • Adjusting to the school environment 	“I enjoy the faculty and I enjoy the Math principal, I enjoy the actual principal and I feel like I am making a difference, which is one of the biggest reasons why I wanted to be a teacher.”
Administrative or Collegial	Borman &	The school’s ineffectiveness in	Any negative factor relating to:	“The mentor that was assigned to

Support (Negative)	Dowling (2008)	assisting teacher with issues	<ul style="list-style-type: none"> • Student discipline • Instructional methods • Curriculum • Support with parents Adjusting to the school environment	me, her and I have very different teaching philosophies and also very different education backgrounds ourselves so we ended up clashing pretty heavily.”
Financial	Heckman (2011)	Salary, bonus, or other financial incentives	Any factors relating to the teachers’ finances <ul style="list-style-type: none"> • Making more money at another job or not making enough money • Loan forgiveness 	“Another big motivator for me to stay put is obviously the fact that it’s a Title I school, the fact that I can get student loan forgiveness.”
Accountability	Heckman (2011)	Emphasis on standardized testing, other assessments, and paperwork	Focus is on assessment and paperwork	“You have pressures from your students, parents, administration, and it just feels like you're under siege from all sides at times”
Student/Teacher Racial Mismatch	Renzulli et al. (2011)	The majority of the schools’ students are of a different race or ethnicity	Factors associated with interactions between teacher and students of a different race: <ul style="list-style-type: none"> • Teacher has a different background • Preconceived notions • Language • Interests • Being called “racist” or having struggles with racial differences 	“I found myself having a bigger power struggle with black female students than with black male students.”

OPEN CODES			
Isolation	Feelings of aloneness within the school context	Feeling isolated by: <ul style="list-style-type: none"> • Physical placement of classroom • Not communicating with other teachers • Differences in interests/teaching styles cause feelings of being alone 	“I mean, we can go over a week in a building of 12 teachers without seeing each other and we have a shared lunch period, which is insane.”
Communities’ perception of school	Stereotypes associated with their school or a comparison to surrounding schools	<ul style="list-style-type: none"> • Positive (high performing) • Negative (violent culture) • Includes those perceptions of administration/colleagues/community members <i>Not the perceptions of interviewee, unless directly influenced by community</i>	“We feel bad when media gives our school a bad name because it’s continuing those stereotypes that our school is for the poor, or for black kids or it’s just, it doesn't make us feel good or appreciated that you know, a school is bigger than just like that one fight that happened.”
Teacher/Colleague Racial mismatch	When the interviewee and colleagues in their school have differences regarding race	<ul style="list-style-type: none"> • Have a different race/ethnicity than colleagues • Have different approaches to students of a different race 	“I am pretty comfortable talking about race with my students and I think that doesn't always happen with teachers.”
Students/Classroom Management	When the interviewee talks about interactions with students,	<ul style="list-style-type: none"> • How they perceive their students’ behavior • What challenges they have with 	“There's a lot of push back because I was new that really pushed back in the beginning. They were very used to the science teacher before me

	especially regarding management successes or issues	management <ul style="list-style-type: none"> • General feelings towards students 	and they didn't know who I was and so I was feeling like, I was kind of getting push back on a lot of things.”
Reasons for Staying	Specific examples of why they want to remain teaching at their current school or what why would they consider staying despite challenges.	<ul style="list-style-type: none"> • Relationships with students • Positive relationships in school • Support at school • Structural reasons within the district 	“I’m so motivated by the desire not to abandon my students that’s almost like a mitigating feeling like it makes me not want to go anywhere. I want to stay. But I want these changes to happen in order for me to stay beyond like three years.”
Future in Teaching (not HN school)	Not wanting to teach in a high need school any time after the completion of the 2015/16 school year	<ul style="list-style-type: none"> • Teaching at non-high need school • Descriptions of teaching at a non-high need school (ex: more rigorous) 	“I still want to teach. I never want to stop teaching. I just don't want to teach at that school any more because I don't know where we're going to from here.”
Future in Teaching (HN school)	Future teaching in High Need Schools or is not partial to teaching in HN or non-HN	<ul style="list-style-type: none"> • Continuing teaching at their current school • Teaching at another high need school • Is not drawn away from HN schools 	“If I was able to go into a high need school, I definitely, if the high need school offered me a job, I would take it. I wouldn't wait to see if like a non-high need school gave me a job too.”
Induction: Reason for staying/leaving	Any response directly relating to induction specifically having an influence of the teachers’ decision to stay or leave their current school	Induction had: <ul style="list-style-type: none"> • No influence or influence on their decision to stay or leave at their school (had other supports, problems too large for induction, etc.) 	<p>“I definitely want to stay in part because of insights I've gained through induction meetings.”</p> <p>“Zero influence.”</p>

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Research Question 4: *What are teachers’ experiences with face-to-face or online delivery of induction?*

CODES FOR INDUCTION-RELATED QUOTES ONLY			
Category 5			
Characteristics Associated with Implementation: Open codes used to examine the teachers’ experience with method of program delivery, which includes the benefits and challenges associated with both face-to-face and online methods			
OPEN CODES			
Code	Description	Clarification	Example
F2F Advantage	Any advantages of having the induction meetings in-person <i>Both personal and hypothetical experiences</i>	<ul style="list-style-type: none"> • Build relationships • Verbal communication • Better understanding • Less distracted • Conversations occurring outside of scheduled induction time 	“ I feel like face-to-face has been the best way for me to learn to and to like build a relationship with people.”
F2F Disadvantage	Any disadvantages of having the induction meetings in-person <i>Both personal and hypothetical experiences</i>	<ul style="list-style-type: none"> • Inconvenience • Time (takes too much time/time of meeting) • Struggle to stay engaged 	“ Getting everybody in the same place all at once is obviously, that’s always a challenge.”
Online Advantage	Any advantages of having the induction meetings using computer software <i>Both personal and hypothetical experiences</i>	<ul style="list-style-type: none"> • Efficiency • Ease of online format • Convenience 	“ It’s definitely more convenient because you don’t have to, you can truly be like, I’m still at school but I have this meeting, let me just log on.”
Online Disadvantage	Any disadvantages of having the induction meetings using computer software	<ul style="list-style-type: none"> • Technology challenges • Lack of connectedness • Communication 	“ It feels like it would be easier for me personally to disengage from a conversation.”

	<i>Both personal and hypothetical experiences</i>	issues • Distracted	
Implementation: Preference	Regardless of participation in either implementation method, interviewee states which one he/she prefers	<ul style="list-style-type: none"> • Prefers online • Prefers face-to-face 	“ If it’s during a weekday, I would much rather prefer an online meeting, but if it’s on weekends, I would be interested in like going in person.”

Vita

Molly Henschel was born in Roanoke, Virginia. She graduated Northside High School, Roanoke, Virginia in 2007. She received her Bachelor of Science degree in Psychology from Virginia Tech, Blacksburg, VA in 2011. Subsequently, she took one year off from school to work as a Research Assistant for the Office of Research and Evaluation at Virginia Commonwealth University's Medical Campus, Richmond, VA. While continuing to work as a research assistant, she obtained her Masters of Arts in Education at The College of William and Mary, Williamsburg, Virginia in 2013. From 2013 to 2016, she worked part-time as a Graduate Research Assistant in the Department of Teaching and Learning at Virginia Commonwealth University, Richmond, VA. In addition, she worked part-time as an Evaluation Consultant for Magnolia Consulting, LLC., Charlottesville, VA, which turned into a full-time position in 2016. After graduation, she will continue to work for Magnolia Consulting, LLC. as a Researcher and Evaluator.