Not So Basic Training: Improving Instructional Coach Preparation by Implementing an Instructional Coach Institute

A disquisition presented to the faculty of the Graduate School of Western Carolina University in partial fulfillment of the Requirements for the degree of Doctor of Education.

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TABLE OF CONTENTS

LIST OF TABLES

Table Page

LIST OF FIGURES

Figure Page

Abstract

Legislation over the last few decades has ushered in an era of high stakes testing and accountability, prompting school districts to seek innovative strategies to improve student achievement. One such strategy is to build the capacity of teachers and administrators through the support of instructional coaches, skilled educators who provide job embedded professional development for teachers. The skills an instructional coach needs to be successful, such as understanding andragogy, conducting coaching cycles, promoting equitable learning opportunities and providing effective feedback, are varied from those of a classroom teacher. Unfortunately, programs specific to instructional coach preparation are typically costly and not readily accessible. Instead, the skills an instructional coach needs are generally learned "on the job", taking up valuable time coaches could be working with teachers to improve student outcomes. In an effort to effectively prepare aspiring instructional coaches prior to taking on the role, the researchers designed and implemented an Instructional Coach Institute, measuring the impact on participants as they learned about the principles and skills of instructional coaching and equitable classroom practices. The research used a pretest and posttest design to quantitatively measure impact in conjunction with double blind In Vivo coding of qualitative data. The purpose of this research was to improve the preparation of potential instructional coach candidates by strengthening the skills of current educators. Ultimately, improved preparation and knowledge of potential instructional coaches may improve the achievement of all students in the Apple Ridge Public Schools, especially minoritized or marginalized students.

Introduction and Problem Statement

Education in the United States (U.S.) serves many purposes, from preparing citizens for participation in our democracy to preparation for college or careers. The promises of democracy and the American dream are dependent on quality education. As Bryk (2010) stated, his work on school improvement

> …has been motivated by a deep belief that schools can and must do much better if we are to revitalize the American dream of opportunity for every child. A good education is now more important than ever in creating the pathway to this opportunity (p. 30).

An educator's job is to provide a high quality education for every student every day because a good education is essential to achieve what Honig (2016) identified as the three goals of education—job preparation, active civic participation, and leading a full life. These are noble goals, but preparation for college and careers are the aims educators are held accountable for on an annual basis through state and national assessments (No Child Left Behind [NCLB], 2002; Every Student Succeeds Act [ESSA], 2015).

Additionally, the demographics of today's public schools are changing. According to du Brey et al. (2019) on behalf of the National Center for Educational Statistics, the number of students enrolled in public schools increased from 47.2 million students in 2000 to 50.4 million students in 2015. Public schools are more ethnically and racially diverse than in previous trends, a trend that is expected to continue. More diverse students means more diverse needs in each classroom. Thus, the implications for educators is that they must adapt instructional practices to meet diverse learning needs and improve student achievement in this age of accountability.

To make long lasting change that addresses the needs of more diverse students, teachers need job embedded professional development (PD) to effectively implement new instructional practices (Knight, 2005; Learning Forward, n.d.). A powerful option is to include professional

development in a teacher's regular workday by incorporating instructional coaches (ICs), who are skilled educators responsible for facilitating job embedded professional development in order to build teacher capacity to meet students' diverse academic and social emotional needs, ultimately improving student achievement. The reality is most instructional coaches come into this educational leadership role without necessary job specific skills, including an understanding of andragogy, coaching models, and coaching cycles, as well as knowledge of the need for relationship building and communication skills. Thus, *the researchers' theory of improvement was that by developing and implementing a preparatory Instructional Coaching Institute for prospective instructional coaches with a focus on the coaching role and equitable learning opportunities, andragogy, coaching models and addressing challenging conversations, we will effectively increase potential coaches' aptitude to build the capacity of teachers to meet the diverse academic and social emotional needs of students leading to increased student achievement.*

The Academic Context

Whether or not educators meet students' academic needs is typically measured by student performance on standardized assessments. Assessment has always been part of education in the U.S. although the assessments changed over time to what we know today as high stakes standardized tests. From oral exams in the 1800s to the development of standardized intelligence quotient tests in the 1900s to the 1965 Elementary and Secondary Education Act, standardized testing became an integral part of public education in the U.S. (Huddleston & Rockwell, 2015). Legislators often use data from assessments to drive U.S. and state education policy, including NCLB (2002) and more recently ESSA (2015). The reality is educational assessment data show room for improvement, especially for minority students in order to close the achievement gaps

that currently exist within the United States' educational system (Kober, 2010a; Kober 2010b; McFarland et al., 2019; The Nation's Report Card, n.d.a; Vanneman, Hamilton, Anderson & Rahman, 2009).

To further explain the academic context, the researchers will begin with a review of U.S. student performance data resulting from the Programme for International Student Assessment (PISA), Trends in International Mathematics and Science (TIMSS), and the National Assessment of Educational Progress (NAEP). Gaps in achievement, as well as the roots of those achievement gaps, are explored, specific to groups of students including Black/African American, Hispanic/Latinx, and students living in poverty. A review of the impact of intersectionality amoung and between groups is included in the review of performance data.

United States' Student Performance Data

Though data from recent national assessments and various state assessments showed some positive trends in academic performance for U.S. students, these gains were not uniform and varied by grade and assessment (Kober, 2010a; Kober 2010b; McFarland et al., 2019; The Nation's Report Card, n.d.b; Vanneman et al., 2009). Data also pointed to continued achievement gaps for Black and Hispanic students compared to their white peers (Kober, 2010a; Kober 2010b; McFarland et al., 2019; The Nation's Report Card, n.d.a; Vanneman et al., 2009), which raises educational equity questions about why there were such disparities in educational outcomes for different student groups. After a brief review of U.S. performance data on two internationally administered assessments, the Programme for International Student Assessment (Desilver, 2017; Serino, 2017) and Trends in International Mathematics and Science Study (Desilver, 2017; Provasnik et al., 2016) and student performance in reading and mathematics on

the National Assessment of Educational Progress (The Nation's Report Card, n.d.a.; The Nation's Report Card, n.d.b) will be examined.

Programme for International Student Assessment. The Programme for International Student Assessment (PISA) is a test administered every three years to assess progress in reading, math, and science. In 2015, 71 countries participated in PISA testing and U.S. students ranked 38th in math, 24th in reading, and 24th in science (Desilver, 2017). Additionally, the U.S. PISA scores showed no statistically significant difference between scores from 2000 to 2015, indicating no improvement in student performance in reading, math, and science over 15 years compared to the United States' international peers (Serino, 2017).

Trends in International Mathematics and Science. Trends in International Mathematics and Science Study (TIMSS), is an international assessment which assesses fourth and eighth grade students every four years in math and science. Since 1995, U.S. students performed better on TIMSS than on PISA, and in 2015 ranked eleventh out of 48 countries in math and eighth out of 38 countries in science (Desilver, 2017). U.S. TIMSS math scores consistently increased since 1995 in fourth and eighth grades; however, the science scores showed uneven progress in the same timeframe (Provasnik et al., 2016).

National Assessment of Educational Progress. Since 1969, the National Assessment of Educational Progress (NAEP) biannually assessed U.S. students on reading and mathematics. Overall scores increased for all students from 1994 to 2007, but achievement gaps persisted for African-American/Black students, Hispanic/Latinx students, and students living in poverty (Vanneman et al., 2009). The most recent data from 2017 showed a general trend of flat test scores over the last decade (The Nation's Report Card, n.d.b) indicating achievement plateaued. Additionally, overall U.S. students' scores in 2015 were the lowest since 2007 and the U.S. had

its first drop in math scores in fourth and eighth grades since 1990 (Desilver, 2017), the first year NAEP was administered in its current form.

An additional concern from a further review of NAEP data on The Nation's Report Card is that in 2017, math scores remained essentially the same as in 2015 when only 40% of fourth grade math students scored "at or above proficient". NAEP data showed no statistical difference in eighth grade math scores from 2015 to 2017, which were 33% and 34% "at or above proficient" respectively (McFarland et al., 2019). The 2015 data indicated fewer students scored "below basic" in math, which was a bright spot, but the number of students scoring proficient or advanced stopped increasing (Desilver, 2017).

According to The Nation's Report Card (n.d.a.), NAEP reading data was consistent in fourth grade with 36% of students "at or above proficient" in 2015 and 37% at the same level in 2017. Analysis of NAEP data by state showed "no measurable difference" in student performance in fourth grade reading in 41 states and scores declined in nine states (McFarland et al., 2019). Eighth grade students slightly increased their percent "at or above proficient" from 34% in 2015 to 36% in 2017 and eighth graders in 18 states scored higher than the national average (McFarland et al., 2019). In 15 states eighth graders scored at the national average and in 17 states eighth graders scored lower than the national average (McFarland et al., 2019). NAEP data indicated the majority of U.S. students did not meet basic achievement levels in reading and mathematics, which indicated teachers need support in building their capacity to meet students' needs.

Data indicated clear room for improving educational outcomes for African-American/Black students, Hispanic/Latinx students, and students living in poverty, who continue to experience achievement gaps when compared to their white peers (Desilver, 2017; Kober,

2010a, 2010b; McFarland et al., 2019; Murphy, Belford, Balding, & Beckwith, 2018). In order to effectively address these persistent achievement gaps, an exploration of the gaps themselves can provide additional information.

Achievement Gaps in Academic Performance

While there was some positive data in U.S. international and national test data, specifically that all students groups achieved higher levels in reading and math than in earlier years (Desilver, 2017; Kober, 2010a; Kober, 2010b; McFarland et al., 2019), many students in the U.S. still did not achieve grade level standards on national or state assessments and African American, Latinx, and students living in poverty demonstrated persistent achievement gaps (McFarland et al., 2019; Murphy et al., 2018). NAEP results showed no significant progress toward closing the achievement gaps for Black and Hispanic students (Erickson et al., 2007; Hemphill & Vanneman, 2010; Kober, 2010a; Kober, 2010b; The Nation's Report Card, n.d.a) and assessment data from numerous states was often similar (Kober, 2010a; Kober, 2010b; NC School Report Card, 2018, NC School Report Card, 2019). In order to understand these achievement gaps, we must first examine some of the complex reasons the gaps occur.

Roots of the achievement gaps. Persistent achievement gaps for students of color are the result of what Ladson-Billings (2006) termed an "education debt." Ladson-Billings (2006) concluded education debt occurred because of years of historic, economic, sociopolitical, and moral debt that contributed to an inequitable education system. The historic debt includes racism and the various ways systems in the United States discriminated against people of color throughout United States history. Economic debt reflected the inequitable funding structures used to finance schools and resulted in large disparities between schools that serve a majority of white students versus schools that serve a majority of students of color. Sociopolitical debt

occurred because people of color have been prevented from participating in the political processes and as a result, public policy reflected the views of the majority. The moral debt concerns the concept that society benefited from people of color, but did not acknowledge this fact, choosing instead to focus on personal responsibility to overcome barriers.

For students living in poverty, Darling-Hammond (2010) referred to an "opportunity gap" in educational opportunities for students, which is similar to Ladson-Billings' (2006) education debt. Darling-Hammond's (2010) opportunity gap attributed the gap in academic performance for economically disadvantaged students to the historic lack of access to educational opportunities, including "expert teachers, personalized attention, high-quality curriculum opportunities, good educational materials, and plentiful information resources" (p. 28) that compounded over generations, which contributed to an increased educational debt in each successive generation. Lack of access to educational resources and opportunities is even harder to overcome as Gorski (2011) noted due to deficit ideology where society blames the victims, especially those living in poverty, and serves to "fix inequalities by fixing disenfranchised communities rather than that which disenfranchises them" (p. 156). Deficit ideology allows society to dangerously justify structures that continue to marginalize people living in poverty because of the "belief that poverty is the natural result of ethical, intellectual, spiritual, and other shortcomings in the people who are experiencing it" (Gorski, 2018, p. 60) rather than confronting the societal structures that perpetuate the cycle.

Rather than viewing these "debts" (Ladson-Billings, 2006) or "opportunity gaps" (Darling-Hammond, 2010) as insurmountable or having a "deficit perspective" (Ford & Grantham, 2003; Gorski, 2011), educators must find ways to lessen the achievement gaps using research based best practices in classrooms where educators can improve educational outcomes

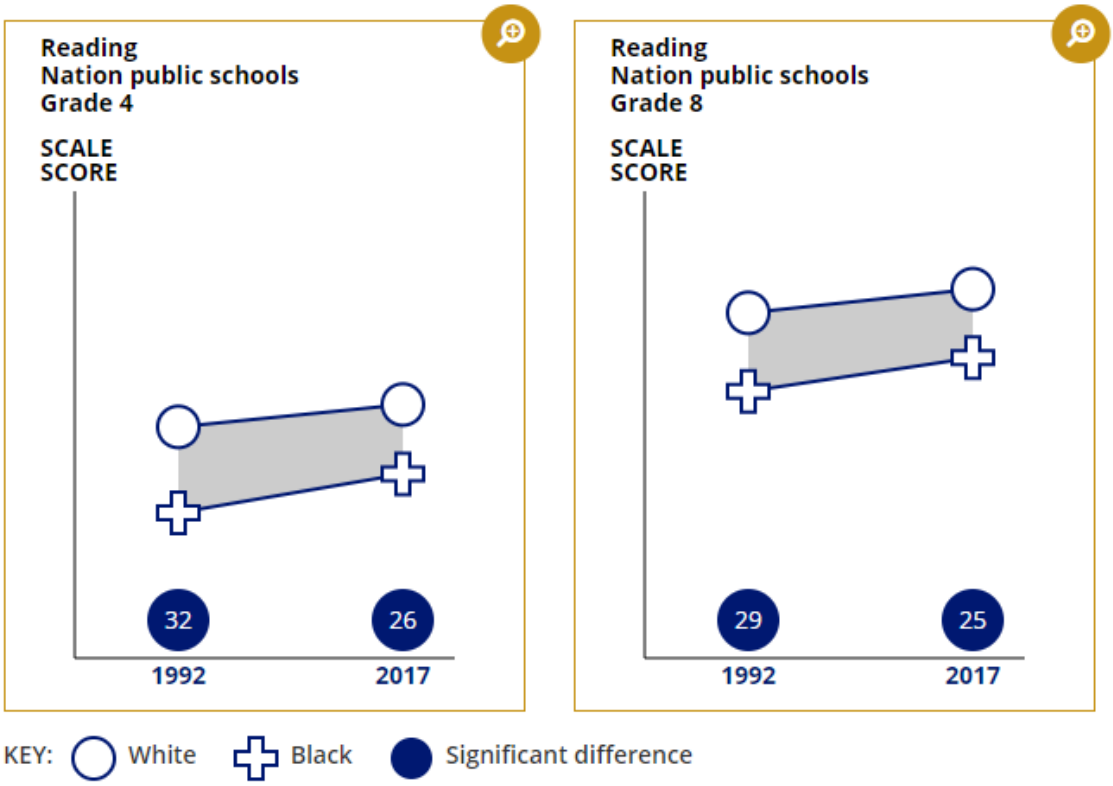
for all students. In order to assess which best practices to apply, educators must understand the achievement gaps as they currently exist for Black students, Hispanic students, and students living in poverty.

Black/African American Academic Performance

Vanneman et al. (2009) found that NAEP data from Blacks and whites in 2007 showed the highest achievement levels for both groups since 1980 in fourth grade reading, but the 26-point performance gap between Blacks and whites, although smaller, was not significantly different from the original gap in 1980. McFarland et al.'s (2019) and du Brey et al.'s (2019) analysis of more recent NAEP data showed a persistent gap in fourth and eighth grade reading scores between white and Black students. Fourth grade reading scores narrowed from a 32-point difference between white and Black scores in 1992 to 26 points in 2017 (see Figure 1), but there was no measurable change from 2015 to 2017 (McFarland et al., 2019). Additionally, McFarland et al. (2019) found no statistically significant change in the white-Black gap in eighth grade reading from 1992 to 2017 with a consistent gap of 25 points in the average score. The data clearly indicate educators are not closing the achievement gap in reading for Black students in the U.S.

Figure 1

White-Black Score Gap in Reading from The Nation's Report Card (n.d.a)



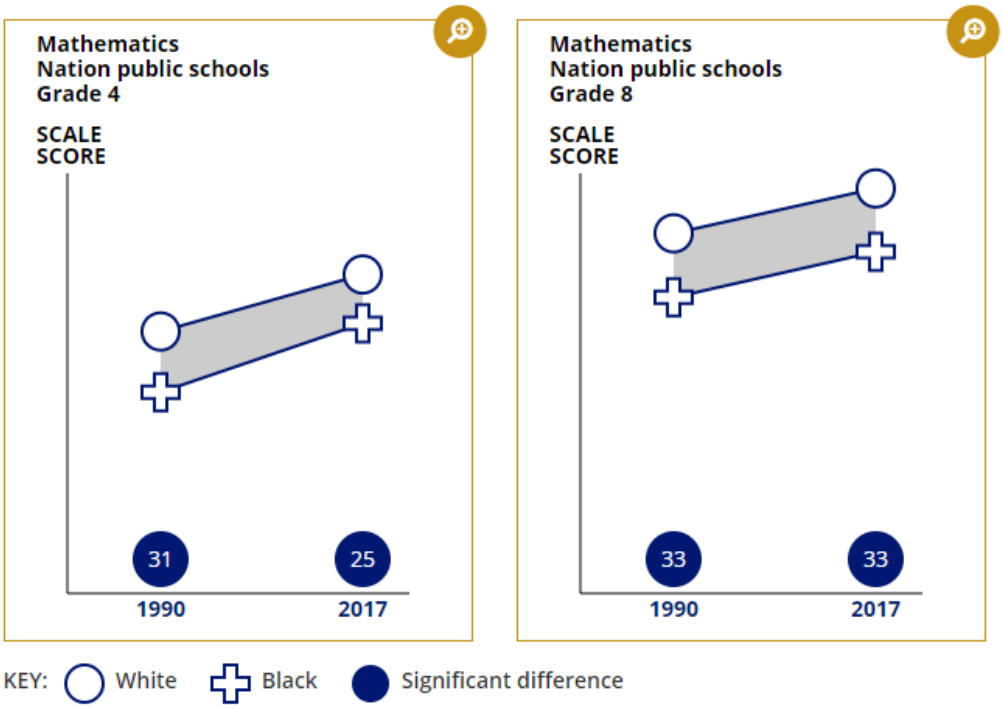
Note. Figure created using The Nation's Report Card, Achievement Gaps Dashboard (n.d.a)

In mathematics, Vanneman et al. (2009) noted that once again all students' achievement was higher in 2004 than in 1978 and the 23 point achievement gap between Black and white fourth grade students was less than in 1978; however, there was not a significant difference from the Black and white scores in 1999 and 2004 and the results for eighth grade students followed the same pattern. The 2017 math NAEP scores showed only 19% of Black fourth grade students scored at or above proficient compared to 51% of whites and in eighth grade math only 13% of Black students scored at or above proficient compared to 44% of whites (The Nation's Report Card, n.d.b). The Black-white achievement gaps in fourth and eighth grade mathematics

persisted (see Figure 2) although in fourth grade the gap narrowed from 31 points in 1990 to 25 points in 2017. The gap remained at 33 points for Black students from 1990 to 2017 (The Nation's Report Card, n.d.a).

Figure 2

White-Black Score Gap in Math from The Nation's Report Card (n.d.a)



Note. Figure created using The Nation's Report Card, Achievement Gaps Dashboard (n.d.a)

Black/African American state assessment data. Kober (2010a) studied African-American achievement on state tests from 2002 to 2008. She found that in reading and math, African American students made gains since 2002, but "are not achieving at the high levels needed for future success in college and careers, and achievement gaps remain large" (Kober, 2010a, p. 1). Kober (2010a) found "this subgroup [African-Americans] is often the lowest-

performing among racial/ethnic subgroup in a particular state" (p. 6). More specifically, in 2008 African-American students had the lowest performance of all third through eighth grade students for reading and mathematics in 19 states on their state assessments (Kober, 2010a).

North Carolina's (NC) assessment data reveals a similar picture. North Carolina administers annual state reading and math End of Grade (EOG) tests to determine if students are Grade Level Proficient (GLP), or Career and College Ready (CCR). GLP designates a student scored a Level 3, 4 or 5 on the state tests, and CCR represents a score of Level 4 or 5 (NC Department of Public Instruction, 2019). Black students scored lower than white students over the last two years in both GLP and CCR (see Figures 3 and 4), which was consistent with earlier years' state assessment data. The data is reported annually through the North Carolina School Report Card (2018, 2019).

Figure 3

Percent of White and Black Students Achieving GLP or CCR on NC Grades 3-8 Math EOGs (NC School Report Card, 2018; NC School Report Card, 2019)

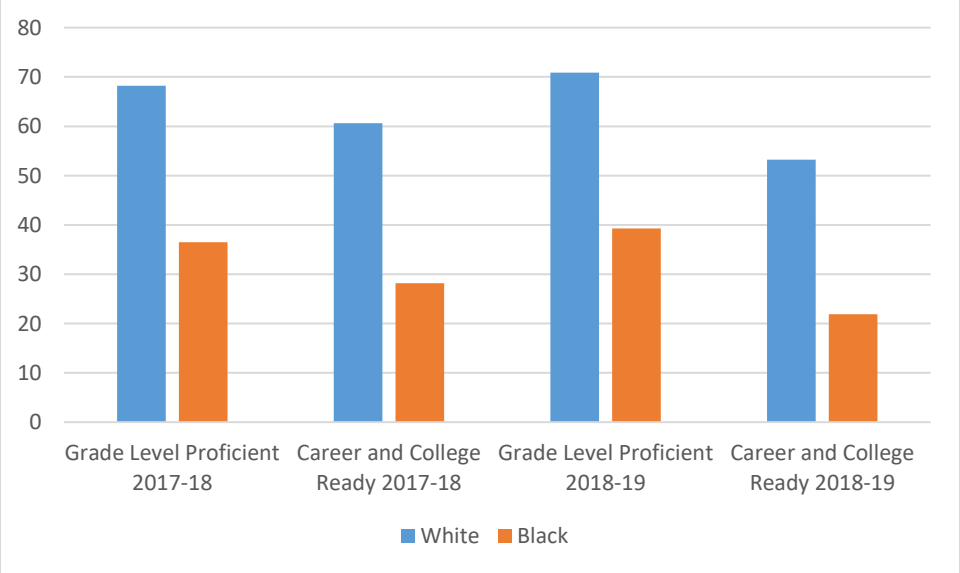
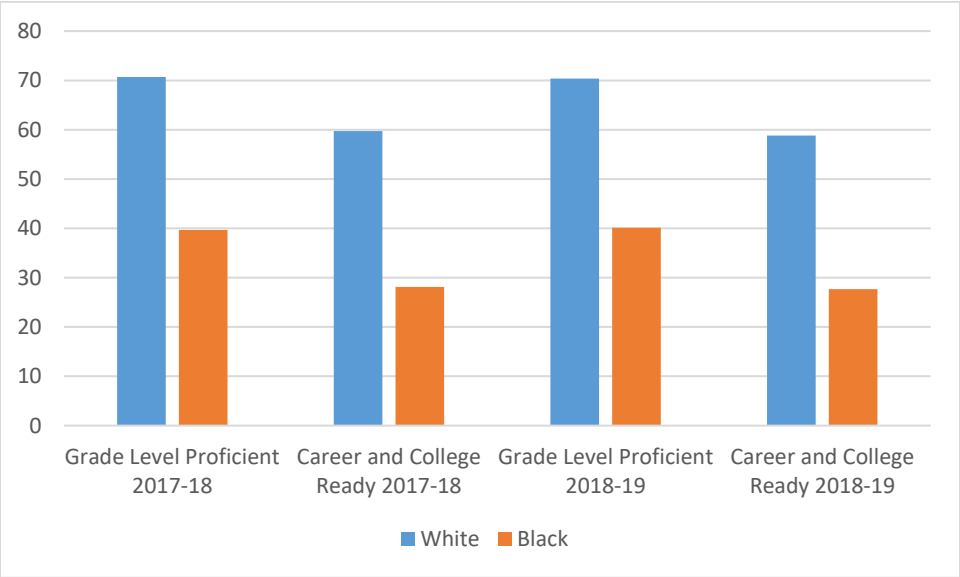


Figure 4

Percent of White and Black Students Achieving GLP or CCR on NC Grades 3-8 Reading EOGs (NC School Report Card, 2018; NC School Report Card, 2019)



Hispanic/Latinx Student Achievement

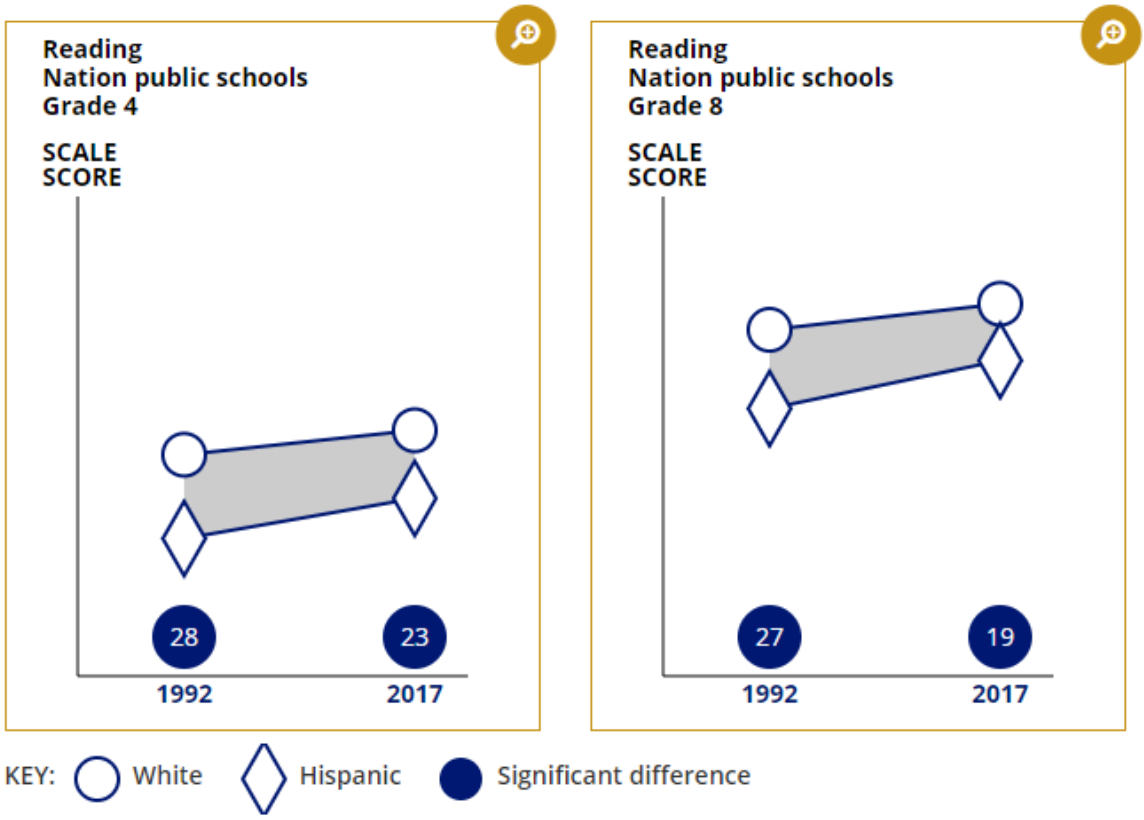
As of 2015, Hispanic students comprised 26% of the students enrolled in public schools across the U.S. (du Brey et al., 2019). Hispanic students, like Black students, have achievement gaps in reading and mathematics compared to their white peers (du Brey et al., 2019; Roach, 2006; The Nation's Report Card, n.d.a) and many Hispanic students fell short of the achievement levels that states set for career and college readiness (Kober 2010b).

From 1992 to 2017 in reading on NAEP, the achievement gap between fourth grade white and Hispanic students narrowed five points, but was still a considerable gap (see Figure 5). Hemphill and Vanneman (2010) and du Brey et al. (2019), found that overall Hispanic achievement scores rose in reading from 1990 to 2009; however, the gap between Hispanic students and their white peers did not change significantly in fourth or eighth grades. More

recently, NAEP data showed no measurable change from 2015 to 2017 in reading for the Hispanic subgroup (du Brey et al., 2019; The Nation's Report Card, n.d.a.), but in eighth grade reading the gap between white and Hispanic NAEP scores decreased from 26 points in 1992 to 19 points in 2017. While this shrinking of the achievement gap was an improvement, it remained a gap necessary to address.

Figure 5

White-Hispanic Score Gap in Reading from The Nation's Report Card (n.d.a)



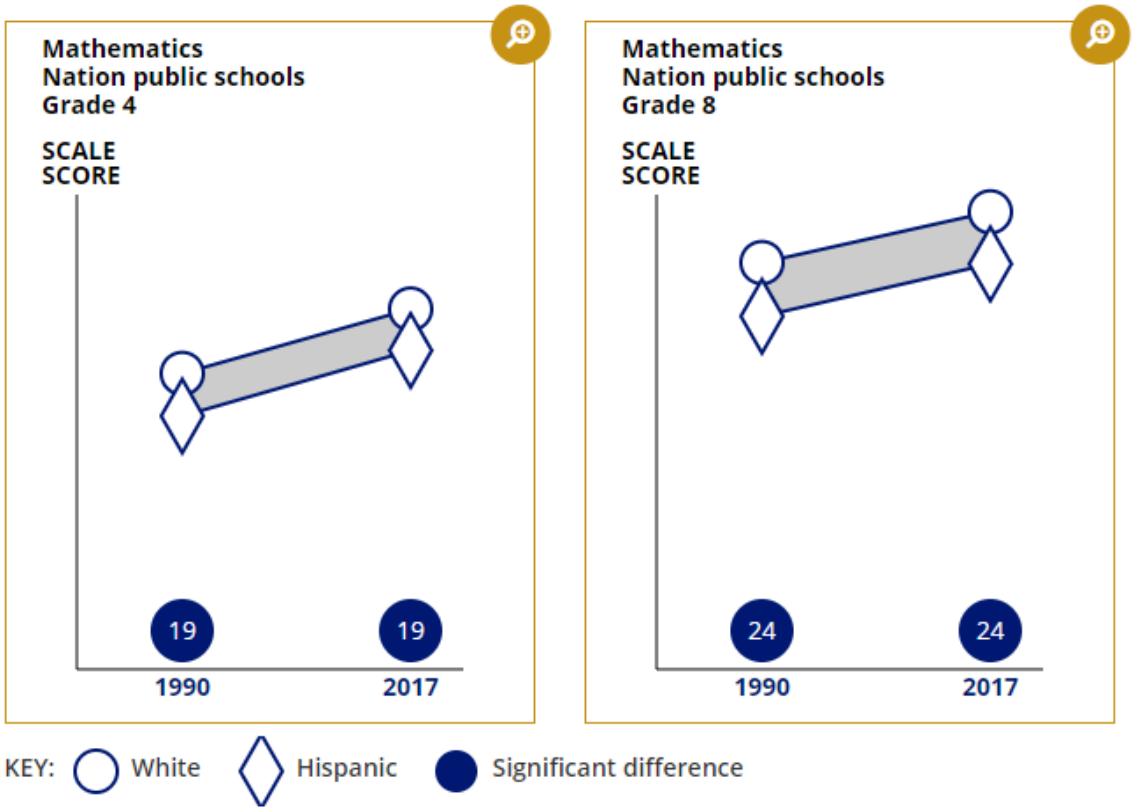
Note. Figure created using The Nation's Report Card, Achievement Gaps Dashboard (n.d.a)

NAEP data also showed Hispanic students have persistent achievement gaps in math that have not changed in over 20 years (du Brey et al., 2019). Just as in reading, Hispanic students'

math achievement improved from 1990 to 2009, but the achievement gap in fourth and eighth grade math between Hispanic and white students did not narrow (du Brey et al., 2019; Hemphill & Vanneman, 2010; The Nation's Report Card, n.d.a). The Nation's Report Card (n.d.a) indicated from 1990 to 2017, Hispanic students consistently scored 19 points lower compared to white peers in fourth grade math and 24 points lower in eighth grade math (see Figure 6). Across measures, data again indicated higher achievement levels for all students, but that more must be done to close the gap between Hispanic students and their white peers.

Figure 6

White-Hispanic score gap in math from Nation's Report Card (n.d.a)



Note. Figure created using the Nation's Report Card, Achievement Gaps Dashboard (n.d.a)

Hispanic/Latinx state assessment data. Kober (2010b) found that in states with sufficient data for comparison, Latinx students improved their reading and mathematics scores on almost all state assessments, especially compared to African American students. Despite this improvement, Latinx fourth and eighth graders still performed well below their white peers in both subjects (Kober 2010b) and Latinx students "were the lowest-performing racial/ethnic subgroup in at least one subject/grade combination in 11 states" (Kober, 2010b, p. 7). Lastly, in California and Arizona, which account for almost one third of the Latinx students in the U.S., Latinx students had the lowest reading proficiency rates of all subgroups in California for all grade levels and in Arizona, they scored lower than every subgroup except Native Americans (Kober, 2010b).

Hispanic students in North Carolina continue to achieve at lower levels than their white peers on state EOGs in math and reading. The achievement gaps are not as large as between Blacks and whites, but the academic gaps do persist as seen in Figure 7 for math and Figure 8 for reading (NC School Report Card, 2018; NC School Report Card, 2019). White students in NC consistently outperform their Black and Hispanic peers in math and reading (NC School Report Card, 2018; NC School Report Card, 2019).

Figure 7

Percent of White and Hispanic students achieving GLP or CCR on North Carolina Grades 3-8 math EOGs in the 2017-2018 and 2018-2019 school years (NC School Report Card, 2018; NC School Report Card, 2019)

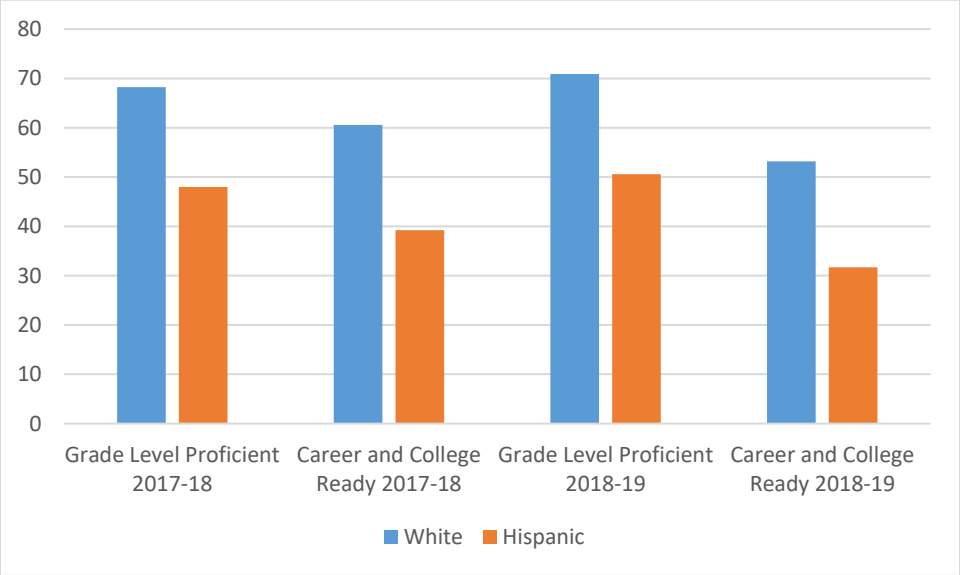
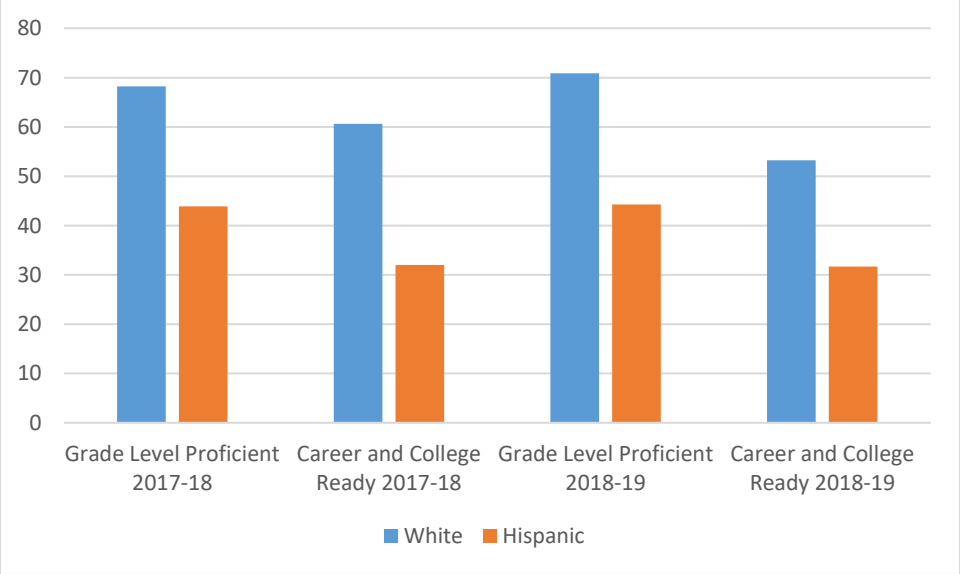


Figure 8

Percent of white and Hispanic students achieving GLP or CCR on North Carolina Grades 3-8 reading EOGs in the 2017-2018 and 2018-2019 school years (NC School Report Card, 2018; NC School Report Card, 2019)



Students living in poverty

Poverty can also impact student achievement (Carnoy & Garcia, 2017; Darling-Hammond, 2010; du Brey et al., 2019; Milner, 2016) and the number of public school students who qualified for free or reduced price lunch (FRPL) in public schools increased greatly from the mid-1990s to 2013 (Carnoy & Garcia, 2017), which indicates more students were potentially at academic risk than in previous years. The percentage of students "attending high poverty schools (those with more than 75% of students eligible for FRPL) rose substantially from 2003 to 2013" (Carnoy & Garcia, 2017, p. 4) and as Darling-Hammond (2010) noted, all students attending a high poverty school, even if the student was not considered poor, performed lower than their peers at schools with a higher socioeconomic level. On the 2017 NAEP tests, students eligible for free and reduced lunch scored consistently lower than non-eligible students in fourth and eighth grades in math and reading (The Nation's Report Card, n.d.a). According to Reardon, Weathers, Fahle, Jang, and Kalogrides (2019), the negative impacts of students attending high poverty schools includes teachers providing instruction on basic skills rather than on higher order thinking skills, lack of advanced courses available for students, and "less demand or capacity for gifted/talented programs" (p. 7) all of which have long term effects on student achievement.

Intersectionality. Research showed that attending a "higher poverty school had a negative influence on the mathematics and reading achievement of students from all racial/ethnic groups in both fourth and eighth grades" (Carnoy & Garcia, 2017, p. 4) and for students who are African-American/Black or Hispanic/Latinx, and also live in poverty, the impact on their educational outcomes was greater because of intersectionality. Intersectionality acknowledges that various aspects of society such as race and class can combine together to negatively impact students' educational outcomes in ways that each factor alone may not. As Carey, Yee, and

DeMatthews (2018) wrote, “Intersectionality describes the co-relational forces of how oppressions such as (but not limited to) racism, sexism, and classism interlock, integrate, and intersect simultaneously within the lives of individuals” (p. 112).

The relevance of intersectionality in students’ lives is evident in these students’ academic achievement. Historically Black and Hispanic students performed lower than whites in reading and math measures (Kober, 2010a; Kober 2010b; McFarland et al., 2019; The Nation’s Report Card, n.d.a; Vanneman et al., 2009). This achievement data by race must also be examined in conjunction with poverty. Since students in poverty are already at academic risk based on their achievement data, this risk compounds when they are Black or Hispanic because the intersection of race and poverty negatively impacts educational outcomes for students in ways that one factor alone would not (Reardon et al., 2019).

In McFarland et al.’s (2019), analysis of U.S. Census Data, they found that Black and Hispanic students lived in poverty at higher percentages than their white peers every year from 2000 to 2016 and according to Milner (2016), “Proportionally, more people of color than white people live in poverty” (p. 241). More specifically, Murphy et al. (2018) found Hispanic children are more than twice as likely to live in poverty as their white peers in 33 states and three times more likely to live in poverty than their white peers in 12 states. Black students were more than twice as likely to live in poverty as their white peers in 33 states and three times as likely to live in poverty as their white peers in 18 states (Murphy et al., 2018).

Intersectionality is even more relevant for African-American/Black and Hispanic/Latinx students because the proportion of students in public schools where the majority of students were from a minority group grew and continued to do so (du Brey et al., 2019). Many of these schools historically faced resource and funding inequalities compared to schools that served white

students (Darling-Hammond, 2010; Milner, 2016). The inequities in these high poverty schools that served many of the nation's African-American/Black and Hispanic/Latinx students included academic tracking of students that led to underrepresentation of minority groups in academically gifted courses of study and overrepresentation in special education classes, classes routinely taught by unqualified or less experienced teachers, and with less access to support materials and resources for schools (Darling-Hammond, 2010; Milner, 2016).

Improvement Initiative for Apple Ridge Public Schools

In order to change these inequities, educators need sustained support to change their practices. Recognizing that teachers must be able to deftly address a range of student needs to support student growth and performance (Darling-Hammond, 2019; Tomlinson, 2017), the researchers surmised one of the most effective strategies for increasing teacher capacity was to build the capacity of the educators who support the teachers. With the increased utilization of instructional coaches to support teachers through embedded professional development in the classroom, researchers sought to examine how to address this need in Apple Ridge Public Schools (ARPS). Preparing ICs prior to entering this educational leadership role has the potential to better prepare them for working with teachers, and is the focus of the improvement initiative.

To explain the improvement initiative, the researchers will begin with a review of the student performance data from ARPS, both for all students and for groups of students. The history of the instructional coaching program in ARPS is discussed, as well as an exploration of the value of coaches and their role. A review of the problem specific to preparation of educators taking on the coaching role and the value of building the capacity of instructional coaches in ARPS is addressed.

This improvement initiative was implemented in ARPS, a mid-size school district in the southeast with approximately 13,000 students and 23 schools serving kindergarten through twelfth grades. The improvement initiative targeted the district's thirteen elementary schools, potentially impacting approximately 6,000 students, 400 teachers and seven elementary ICs. In ARPS, each elementary IC works in two elementary schools each week, most splitting the week in a two day / three day model.

ARPS' Student Performance Data

ARPS' student performance data reflected the same trends observed in NAEP data and other states' data. Although ARPS students typically performed above the state average performance in all areas, academic achievement gaps persist between white, Black, Hispanic, Multiracial, and Economically Disadvantaged students as shown in Figures 9 and 10. In the 2016-2017 and 2017-2018 school years, white students in ARPS outperformed Black, Hispanic, Multiracial and Economically Disadvantaged students in GLP and CCR on third through eighth grades EOGs.

Figure 9

2017-2018 ARPS Math and Reading EOG Scores by Group (ARPS District Report Card, 2018).

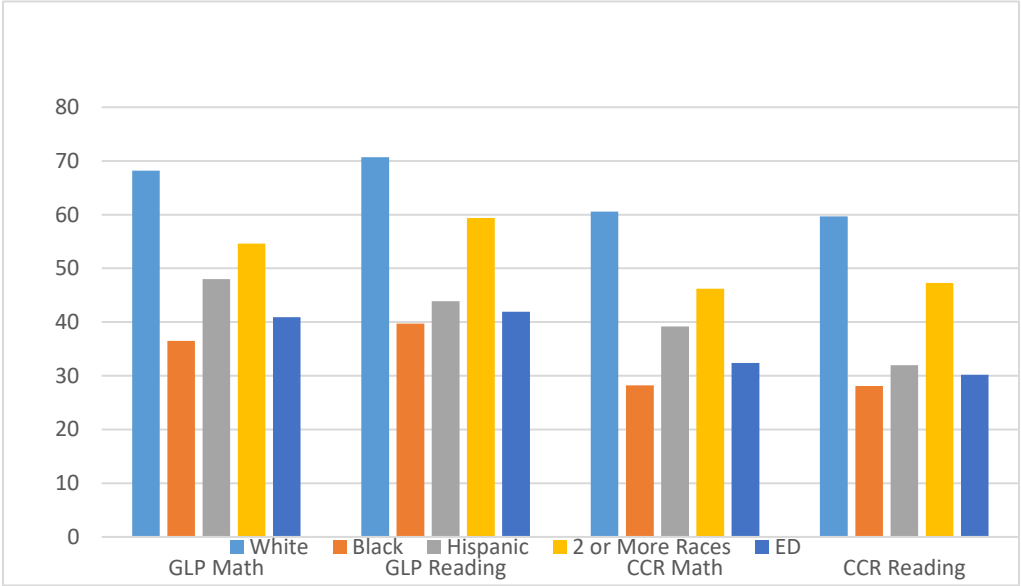
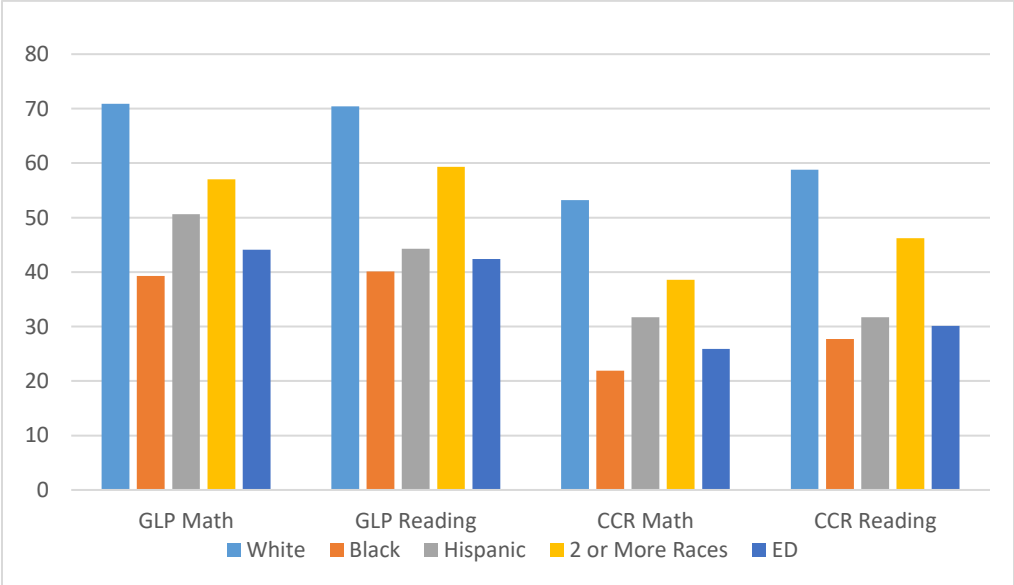


Figure 10

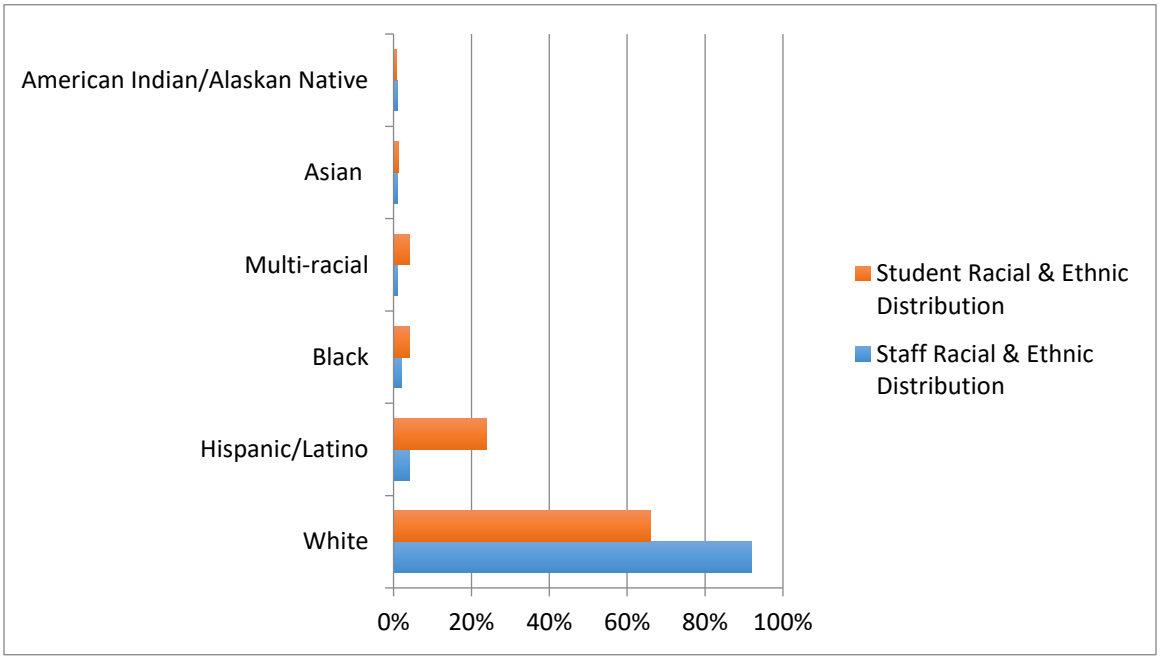
2018-2019 ARPS Math and Reading EOG Scores by Group (ARPS District Report Card, 2019).



ARPS' achievement data may also be impacted by another challenge faced by the school system, which is finding staff that reflects the student population. In the 2019-2020 school year, 92% of staff in the district is white, four percent Hispanic/Latinx, two percent Black, one percent Multi-racial, and less than one percent other ethnic groups (Figure 11). In contrast, the ARPS student population was 66.1% white, 23.8% Hispanic/Latinx, and just over four percent for Black and for Multi-racial. The student population was also impacted by economic diversity, with a FRPL rate of 52.47% system wide, ranging across schools from a low of 23.29% to a high of 78.76% during the 2018-19 school year. This misalignment between the staff and student populations may impact how teachers meet increasingly diverse needs of students whose backgrounds and cultural experiences differ from their own.

Figure 11

Staff and Student Racial & Ethnic Distribution of ARPS (Data Supplied by ARPS)



Research found teachers of a racial/ethnic background different from their students are more likely to suggest the presence of student attention problems (Dee, 2005; McGrady & Reynolds, 2012), identify attendance issues and suspend students from school (Holt & Gershenson, 2019). The lack of diversity in ARPS may hinder teacher ability to identify with students of color. In contrast, diverse teaching staffs tend to have higher expectations for students, are more apt to make referrals for Academically/Intellectually Gifted programs and are less likely to refer for discipline concerns or Exceptional Children's programs (Grissom & Redding, 2016.)

As the student population in ARPS continues to show change, teachers need support in identifying and utilizing teaching and learning strategies that are effective for the increasingly diverse students and needs present in their classrooms. A reasonable conclusion is that ARPS' student achievement will not improve if teachers do not adapt their instructional practices. Job embedded professional development effectively supports implementation of new practices. This improvement initiative will effectively increase potential coaches' aptitude to build the capacity of teachers to meet the diverse needs of students leading to increased student achievement. It is of utmost importance that ICs enter the coaching role fully prepared to support exceptional teacher practice.

The ultimate aim of this initiative is to increase the classroom academic performance of diverse elementary learners by building the capacity of their teachers through the guidance and support of highly prepared instructional coaches. To further clarify the challenge, teachers who become instructional coaches have limited opportunities to build their own capacity in preparation for working with teachers, resulting in teachers lacking the support necessary to meet the diverse needs of their students. The concern was that without a cost-effective, easily

accessible training program for instructional coaches, there is little opportunity to provide teachers with qualified instructional coaches who enter the role prepared for the challenges of the role from day one. A byproduct benefit of teachers attending the Institute, but not immediately becoming coaches, will be an increase in their capacity to meet student needs and a better understanding of how to work effectively with instructional coaches to improve classroom work.

History and Review of the Problem

A brief history of coaching in ARPS is helpful for understanding the purpose of this improvement initiative. The addition of instructional coaches was a result of low student achievement and low performing schools approximately 15 years ago. After a review of strategies utilized by high performing school districts, ARPS began to incrementally implement instructional coaches as part of its improvement initiatives, gradually building up to seven coaches to serve the 13 elementary schools, and four ICs who serve the ten secondary schools. Though including ICs was a district initiative, there was little common understanding of the work to be done at each school site, leading to inconsistent application of the role between buildings. Even at the present time, ARPS still seeks to define the work of ICs across the various schools in the district.

From the beginning of that initial implementation, instructional coaches were selected from applicants who demonstrated not only successful teaching experience, but evidence of teacher leadership at both the school and district level, oftentimes having earned a Master's level degree, National Board Certification, or both. While these criteria made for outstanding classroom teachers, coaching required something more. Kowal and Steiner (2007) described effective coaches as educators who possess expertise in pedagogy, content and interpersonal skills. In ARPS, ICs found that working with teachers required different skillsets than working

with students, and they often felt ill-prepared to address needs. Coaches who had been successful as classroom teachers had to recognize that all teachers taught differently in their own classroom, and it was possibly quite different from the way they themselves had taught. This common realization has been reported not only by the coaches in ARPS, but was also shared by Eisenberg, Eisenberg, Medrich and Charner in *Instructional Coaching in Action* (2017). This reported culture shock impacted not only the retention of coaches in the district, but likely impacted the effectiveness of the work they did with teachers. ICs clearly needed additional training to successfully meet the expectations for the role, but there was not a basic training available for them.

Consensus exists in the literature about instructional coaches' tasks, which set ICs apart from a classroom teacher. Instructional coaches lead professional development at their school whether it is through workshops with follow-up or other job embedded professional development (Gallucci, Van Lare, Yoon & Boatright., 2010; Jorissen, Salazar, Morrison, & Foster, 2008; Knight, 2005; Manning, 2017; Wolpert-Gawron, 2016). Coaches routinely provide non-evaluative feedback based on classroom observations (Eisenberg et al., 2017; Devine, Houssemand, & Meyers, 2013; Gallucci et al., 2010; Jorissen et al., 2008; Knight et al., 2015; Manning, 2017; Woulfin, & Rigby, 2017) and they conduct data analysis on both observational data and student assessment data (Eisenberg et al., 2017; Jorissen et al., 2008; Knight, 2016; Knight et al., 2015; Manning, 2017; Wolpert-Gawron, 2016). Kowal and Steiner (2007) found that ICs need strong "pedagogical knowledge, content expertise, and interpersonal capabilities" (p. 3). Knight (2016) specifically cited seven "success factors" for instructional coaches: "Understand the complexities of working with adults. Use an effective coaching cycle. Know effective teaching practices. Gather data. Employ effective communication strategies. Be

effective leaders. Be supported by their schools and districts" (p. 27). Several of these factors are new or different from the skills a teacher used in the classroom and require professional development for instructional coaches. The reality is most ICs have "little experience working with adults and need guidance and support . . ." (Jorissen et al., 2008, p. 19).

In the early days of the ARPS coaching program, coaches faced many challenges. Instructional coaching by design is intended to be a capacity building instrument to improve the practice of classroom teachers (Woulfin and Rigby, 2017). One key component where much of the research regarding ICs agreed is that there is little consensus around coaching programs, including lack of a standardized implementation plan of the best utilization of coaches across states and school districts (Deussen, Coskie, Robinson, & Autio, 2007; Lucas, 2017; Mangin & Dunsmore, 2015; Woulfin & Rigby, 2017). When coaching, a suggested protocol or analysis for prioritization of coaching roles is not readily available, making preparation for those interested in becoming coaches challenging. As noted by Garbacz, Lannie, Jeffery-Pearsall, and Truckenmiller (2015), "a cohesive, up-to-date and pragmatic set of guidelines for effective coaching that coaches may use as a resource when coaching teachers does not exist" (p. 263). These findings were mirrored when coaches were first implemented in ARPS. Teachers and administrators were unsure how to work with ICs, resulting in relationships between teachers, administrators, and ICs evolving slowly. Walkowiak (2016) noted that for coaching to work well, administrators must clearly communicate with teachers regarding purpose and roles of the coach. Tanner, Quintis and Gamboa (2017) asserted that:

> Campus principals should engage their teachers in collegial discussions about the value of instructional coaching in their organizations with the understanding that implementing

> instructional coaching will require hard work and dedication to the entire instructional coaching process from all stakeholders (p. 32).

Ideally, stakeholders in schools and districts should have clear expectations for instructional coaches, and a procedure for preparing them is essential for successfully carrying out implementation (Garbacz et al., 2015; Walkowiak, 2016).

At the time ICs were initially in ARPS implemented there were 12 schools with three district elementary coaches assigned to four schools each, limiting each coach's ability to provide broad scope support to teachers in each school. This plan rarely provided opportunity for follow-up teacher consultation without lengthy lapses of time, hindering the effectiveness of reflection and feedback. Realizing these limitations, district leaders, with the support of administrators, began increasing the number of elementary coaches to the current total of seven to serve the current 13 elementary schools. This allowed each coach to serve either two or three days in each of their two assigned schools, with more coaching time allocated to schools of higher poverty percentages and generally a larger number of at-risk students. Those same schools typically have more diverse student populations and more subgroups as defined by the state accountability system.

As more coaches were integrated into schools, instructional coaches had more time to meet teacher needs. This allowed ICs to focus on individual teacher or grade level team concerns and provide support for teachers who were responsible for addressing student needs. What became clear was that coaches did not always have the necessary experience or capacity themselves to support the struggles teachers faced or that administrators observed in classrooms. While the teachers that became coaches may have been exemplary in the classroom, the coaching role required a skill set not always readily apparent in these educators. There is little

agreement as to what an exceptional, or even adequate, coaching preparation program should look like (Lucas, 2017). Unfortunately, preparation programs are less prevalent than training opportunities after assuming the role of a coach.

Strengthening Instructional Coach Capacity

With the power to impact true school change, it is vital that instructional coaches possess their own capacity to do the work to the highest potential, and needs training that goes beyond basic skills. While it is true in ARPS that coaches are chosen from teachers who demonstrated exemplary classroom skills, there is more needed to become an effective instructional coach. Gallucci et al. (2010) contended that instructional coaches are not always experts upon entering the coaching role, and are not always prepared to support the professional growth of teachers. Instructional coaches must not only know about content and pedagogy, but must be skilled in other ways that are not always components of their former work as classroom teachers. For example, building relationships and having difficult conversations with teachers are essential yet complex skills. In fact, these skills can more often than not determine the success of a new coach as they begin the role in an unfamiliar school environment.

While the emphasis is on building teacher capacity to meet diverse student needs, instructional coaches tasked with nurturing these teachers may feel overwhelmed in the support they are expected to provide. Coaching may appear similar to teaching when observing the role from afar, but in reality coaching is more complex and requires different skills. Andragogy, or adult learning, is the concept that adults have different learning needs than students, and how an IC addresses those needs can impact the coach-teacher relationship. Andragogy theory presents several ways in which student learners are different from adult learners (Knowles, Holton & Swanson, 2012). Andragogy establishes that adults come into a learning environment, even

professional learning, with a self-concept and abundance of experiences and background knowledge that may hinder or inspire learning (Cox, 2015). These established ideas can create hurdles for ICs as they encourage teachers to change.

These same preconceived learning characteristics can impact the instructional coaches themselves as they begin a new coaching role that is different from their previous teaching role. Mangin and Dunsmore (2015) found instructional coaches who feel limited in their understanding of the coaching role and provide only "low depth" teacher interactions or one on one coaching may experience "deep uncertainties about their own capacity to facilitate change" (p. 202). A coach who lacks confidence is unlikely to build trusting relationships and unable to provide needed support to struggling, challenging or resistant teachers.

Coach preparation is essential to a strong coaching program. Researchers recognize that increased emphasis on instructional coaches to support and professionally develop teachers requires that coaches are also provided opportunities to continue to grow professionally (Stock & Duncan, 2010). In ARPS, improvement initiatives for existing coaches were primarily based around book studies and stand-alone trainings provided at the local, regional and state level. Being highly self-motivated educators, instructional coaches consistently sought out their own learning opportunities, but professional learning in challenging areas typically came after they became coaches as opposed to before they took on the role.

Fullan and Knight (2011) contended that lack of coaching preparation not only inhibits the work coaches do with teachers, but can negatively impact the coaching culture in the school. Strong relationships allow ICs to work closely with teachers, striving toward improved instruction, but building those collaborations is challenging, even more so in the beginning for a new coach (Jorissen et al., 2008). As a result, valuable time in the coaching cycle can be lost as

coaches focus on building relationships with teachers and administrators, while concurrently learning the basics of coaching (Fullan & Knight, 2011; Jorissen et al., 2008).

ARPS Framework for Improvement

The student performance data from ARPS was similar to national assessment results which indicated a persistent achievement gap (Desilver, 2017; Kober, 2010a; Kober, 2010b; McFarland et al., 2019; North Carolina School Report Card, 2018; North Carolina School Report Card, 2019). Identifying achievement gaps is one step in educational transformation, but educators must also address the essential supports necessary to transform schools (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010). The researchers will begin by reviewing Bryk et al.'s (2010) work to identify the essential supports necessary for school improvement. The researchers will then address the capacity of educators to impact the essential supports and how the improvement initiative can impact these supports to improve academic achievement.

Essential Supports for Improvement

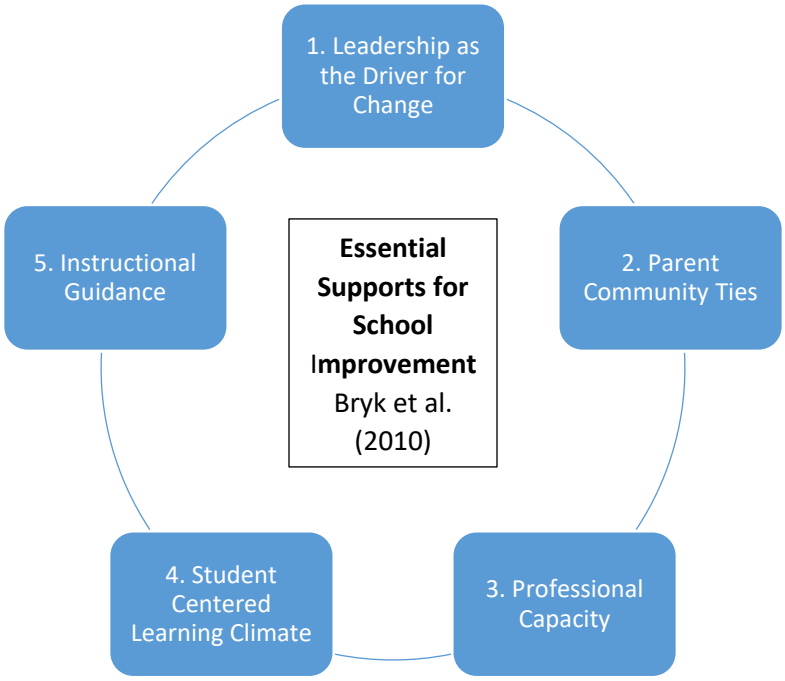
Schools are systems that can be difficult to change (Bryk, Gomez, Grunow, & LeMahieu, 2016; Fullan, Cuttress, & Kilcher 2005), but educators still need to make reforms, no matter how difficult, to improve education for all students. Bryk et al. (2010) studied reform efforts in the Chicago Public Schools during the 1990s and identified key factors for successful school reform in Chicago, which can be extrapolated to other schools and school districts across the nation as models for improvement.

Bryk et al. (2010) developed a framework of five "*essential supports for school improvement"* (p. 10) represented in Figure 12 as they researched the various reforms undertaken in the Chicago Public Schools. Each of these supports are considered vital to the success of any school reform effort and even though it is challenging to address each one at the same time, it is

essential for success. The five supports Bryk et al. (2010) identified were leadership as the driver for change, parent community ties, professional capacity, student-centered learning climate, and instructional guidance.

Figure 12

Essential Supports for School Improvement (Bryk et al. 2010)



Leadership as the driver for change. Bryk et al. (2010) focused on the importance of the school principal to advocate for change and work with the various stakeholders to promote reform strategies. The school principal provided the impetus for change by developing a shared vision that inspires stakeholders to improve while building their individual leadership capacity. The principal must develop efficient procedures and processes to organize the school and maintain order. When efficiency is established, the principal can then focus on instructional

leadership in order to engage students in the learning and promote an environment focused on high academic standards for all students. High academic standards included curriculum alignment and rigorous instruction.

Parent community ties. Bryk et al. (2010) found that for reform to work, students must be motivated, and this motivation is increased when schools, parents, and communities develop, repair, or strengthen relationships by welcoming parents and community members in their local school and fostering partnerships to meet students' many needs. In some cases, relationships with parents may need repair while in other instances simply being more hospitable to families was sufficient, but the level of relationship building or rebuilding depended on where each school or district was with parent community relationships. When parents experienced good relationships with the school or district, then parental support of the school's goals and programs increased as well. Building or rebuilding community ties allowed schools to address student and family needs that would otherwise go unmet, such as glasses for students with vision problems or after school tutors for homework assistance.

Professional capacity. Schools and districts must promote an environment where they recruit highly qualified and dedicated educators while also building the capacity of all employees (Bryk et al., 2010). Leaders established the expectation that educators will grow and develop professionally through highly quality, sustained professional development. All educators should engage in continuous improvement and professional collaboration to strengthen the educational opportunities for all students.

Student-centered learning climate. Students must feel safe in order to learn and this can be addressed through classroom management as well as school safety procedures and policies (Bryk et al., 2010). Once students feel safe, then the school has the responsibility to push

students to expand their academic horizons regardless of their current situation by engaging them in their learning and holding everyone to high academic standards. These high expectations will also carry over into social interactions with adults and peers to improve the total school environment.

Instructional guidance. Instructional guidance focused on the curriculum and content and provided teachers with the tools necessary to meet these expectations (Bryk et al., 2010). The curriculum is aligned vertically and differentiated to be rigorous for all students. Teachers know the standards and implement the appropriate instructional practices necessary for students to meet or exceed the standards. Materials and other resources to support curriculum implementation are also readily available to educators for classroom use.

Each one of the five essential supports is crucial to reforming a school or school system. As educators consider school reforms to improve academic outcomes, Bryk et al. (2010) made clear that schools and districts must address all five supports because truly transformational change requires addressing many different aspects all at once, which is not an easy goal. For transformational change to occur in a school, the capacity of educators must be increased through extensive professional learning (Fullan et al., 2005; Learning Forward, n.d.). As Learning Forward (n.d.) stated, professional learning "is a process that occurs over time and requires support for implementation to embed the new learning into practices." Increasing educator capacity to address educational inequities will not happen overnight and will require sustained professional development based on best practices (Learning Forward, n.d.). For the purposes of this research, the focus was on building professional capacity of educators to improve student academic outcomes in reading and math by providing preparation for potential instructional coaches who were current classroom teachers in the ARPS school district.

Instructional Coaches as a Strategy for School Improvement

The literature on instructional coaches shows the use of ICs as a school reform tool is popular in education today and that ICs' work impacts the quality of instruction and student achievement (Eisenberg et al., 2017; Kraft & Blazar, 2018; Kraft, Blazar, & Hogan, 2018; Learning Forward, n.d.). The literature shows consensus on the skills an IC needs to be successful when they assume this leadership role. The skills researchers identified for IC success are different from those an IC needed to be a successful classroom teacher. This skill deficit is problematic because the literature also indicated ICs need professional development on these specific skills, such as understanding andragogy, knowing the coaching cycle and models, building relationships, and effective communication (Aguilar, 2013; Knight, 2009; Learning Forward, n.d.). A review of the literature about instructional coaches shows how they can be effective tools for school improvement and is included in this section.

The Impact of Instructional Coaches

Educational research supports the positive impacts of coaching on instructional practice and student achievement. Knight (2005) found that "well-constructed coaching programs have consistently generated implementation rates of at least 85% with schools frequently getting every teacher to use several effective instructional practices" (p. 18), which is essential to improving student achievement. Research showed that teachers who received coaching reported increased understanding of research-based literacy practices and that their instruction improved as a result (Eisenberg et al., 2017). Teachers in the Eisenberg et al. (2017) study reported "improvements in students' ability to make connections to prior learning, deeper understanding of concepts, improvement in the quality of writing, and thinking more broadly about course material" (p. 22) and most students in Pennsylvania schools with instructional coaches "made gains in

standardized test performance at rates that exceeded their counterparts in the two control schools and that exceeded their expected performance as predicted by the PVAAS [Pennsylvania Value Added Assessment System]" (p. 20). Interestingly Eisenberg et al. (2017) also noted that within the same schools, attendance rates improved in classes where teachers received coaching possibly because teachers engaged students more effectively in the learning process. Kraft et al. (2018) found an effect size of 0.18 standard deviations (SD) on student achievement in places using instructional coaches as well as an effect size of 0.49 SD on instructional practice. Lastly, Kraft and Blazar's (2018) meta-analysis found that ICs impacted teachers' instruction "by as much as—or more than—the difference in effectiveness between a novice and a teacher with 5 to 10 years of experience" (p. 1).

Roles of Instructional Coaches

Wang (2017) determined that the instructional coach position, comprehensive in nature, places experienced educators in roles of facilitator, instructor and collaborator as they work closely with educators to impact both teacher and student growth. Instructional coach roles should be filled with "master teachers who are comfortable going into any classroom and love having the chance to work with other teachers" (Knight, 2005, p. 19). The role is even more powerful than this simple description. Saphier and West noted that coaching is a "strategic, systemic approach to improving student learning" (2009/2010, p. 47). For this reason, a clearly articulated expectation for instructional coaches that is understood by all stakeholders is essential for meaningful student, and school, outcomes.

Understanding of andragogy. Andragogy is how adults learn and while there are some similarities between how children and adults learn, there are differences that an effective coach must understand (Aguilar, 2013; Aguilar, 2016; Eisenberg et al., 2017; Knight, 2016; Learning

Forward, n.d). These differences can be significant, and should be considered when working with teachers. Aguilar (2013) and Eisenberg et al. (2017) noted that teachers already have expertise in instructional practice and content and coaches must embrace teachers' knowledge in order to build upon it. Similarly, Knight's (2016) research found, "Professionals want to make decisions for themselves and be recognized with the status they feel they deserve" (p. 28). Additionally, Aguilar (2013), Eisenberg et al. (2017), and Learning Forward (n.d.) found that professionals like to feel empowered in their learning by having choices and adult learners also prefer concrete professional development that can be applied to the classroom. Aguilar (2016) further emphasized that adults need to feel safe in the learning environment, want to know why they are learning about something, and need time provided for practice and reflection to internalize their learning, which are all essential for instructional coaches to understand for successful design and implementation of professional development activities for adults. Knight (2016) stated that if coaches "don't understand the complexities of working with adults, they might prompt others to resist what they're offering" (p. 28).

Knowledge of the coaching cycle. Instructional coaching for teachers is active learning and follows a basic cycle, which coaches must understand to be successful. In a coaching cycle, teachers meet with a coach for feedback, planning or professional development, make changes to instruction by implementing new strategies and then reflect and again receive feedback from the coach (Desimone & Pak, 2017). There are different coaching models a school or district may use although they are all similar and follow the key steps in the coaching cycle. Knight et al. (2015) and Knight (2016) recommended the Identify, Learn, and Improve model, while Danks (2011) described the ADDIE Model as a five-step coaching cycle of analyze, design, develop, implement, and evaluate. Eisenberg et al. (2017) identified the Before-During-After Cycle for

instructional coaches to implement and Langley et al. (2009) described the Plan-Do-Study-Act cycle, which also focused on improvement. Although the models may have different names and steps, the basic improvement cycle framework is similar in all cases.

Different coaching models. Wang (2017) asserted that "it is imperative for a coach and for a school invested in providing coaching to explore the question of how one can offer a consistent and thoughtful coaching model within the school context" (p. 20) and different coaching scenarios require an instructional coach to adapt. Aguilar (2013) identified three different coaching models for coaches to use with teachers and administrators. The first is "directive coaching" where the coach is the expert on an instructional strategy or content area and the coach explicitly guides a teacher what or how to do something. This method focuses on changing a specific behavior, but is not as effective as other coaching methods for all situations because it does not include reflection by the teacher. "Facilitative coaching" is the second coaching method Aguilar (2013) presented, which is different from directive coaching because rather than being the expert, the instructional coach "works to build on the client's existing skills, knowledge, and beliefs and helps the client to construct new skills, knowledge, and beliefs that will form the basis for future actions" (p. 23). Facilitative coaching scaffolds learning for teachers until they are able to independently implement their learning. The most effective method according to Aguilar (2013) was "transformational coaching." A transformational coach addresses not only the teacher's beliefs and instructional practices, but also the system the teacher works in and even more broadly, society. A transformational coach continuously reflects on his or her own practice as well in order to facilitate growth and improvement. An instructional coach needs to understand when each coaching model is appropriate in order to be effective.

Another coaching technique utilizes the concepts of "coaching heavy" and "coaching light" (Killion, 2010, p. 8). Both strategies begin with the understanding that teachers are professionals seeking to expand the knowledge base with which they plan for student engagement in lessons. The difference lies both in the approach the instructional coach uses in working with the teacher and the questions the teacher brings to the coach. For example, coaching light is initiated by teaching practices the teacher seeks to improve upon and is a voluntary endeavor to support the teacher and refine instructional strategies. In contrast, coaching heavy exists in a school culture where working with the coach is an expectation, and the work to be done addresses deep understanding of strategies and practices that are driven by data and aligned to school, and possibly district, frameworks. While both strategies have value for teachers and ICs, a coach must be skilled in recognizing when each is most beneficial (Killion, 2010).

Building relationships. Relationship building is also essential for an instructional coach. According to Kane and Rosenquist (2018) "coaches must be allowed to work in ongoing ways in a single school, so that they might develop substantive, ongoing relationships not only with teachers but also with principals" (p. 23). Coaches must establish themselves as confidential and collaborative partners for teachers (Aguilar, 2013; Knight, 2009; Knight, 2016; Kowal & Steiner, 2007) to facilitate professional growth opportunities. Aguilar (2013) found that trust is essential between teachers and ICs, and coaches need emotional intelligence about adult interactions to be effective. Knight (2016) stated that coaches must establish strong relationships because "Teachers rarely learn from collaborating coaches unless they see them as people they can trust" (p. 30).

Effective communication. ICs must communicate effectively with teachers and administrators about instruction in order to improve student outcomes. Coaches use partnership dialogue and reflective conversations (Devine et al., 2013) or active listening, which require different skills than routine conversations. ICs need to ask questions that promote self-reflection and provide feedback in a constructive and collegial way in order to facilitate the reflection necessary to change instructional practices. As one coach stated, ICs should be "respectfully pushy" (Knight, 2009, p. 19) when coaching educators. Coaches also need to know how to "redirect destructive interactions" (Knight, 2016, p. 31) in order to facilitate collaborative growth opportunities. These challenging conversations can be especially difficult for a coach to conduct because "when conversations move from casual to crucial—we're generally on our worst behavior" (Patterson, Grenny, McMillan, & Switzler, 2012, p. 4). Patterson et al. (2012) identified specific strategies coaches can use to effectively facilitate difficult dialogues when needed. Coaches should learn effective communication skills for use in challenging conversations with teachers and administrators.

The question then becomes if an IC requires all these skills and knowledge to be successful, how do teachers who want to become instructional coaches develop these not so basic skills? Research indicates ICs can impact instructional practice and student achievement, but the researchers did not find an easily accessible or cost effective system, program, or class to provide the professional development for a classroom teacher interested in developing the skills necessary to be an instructional coach until a person is already in the role. The lack of a formal preparation program for teachers to become instructional coaches is one that should be addressed because student growth is negatively impacted by limited teacher capacity to meet students' diverse needs. One goal was for teachers who complete the Instructional Coach Institute to be

better equipped at meeting the needs of their diverse students even if they do not become instructional coaches.

The Challenges ARPS Educators Face

Educators in ARPS work to meet the needs of their students each day. Just over 400 elementary teachers and administrators strive to help students reach their academic potential, but test data indicates room for improvement. Instructional coaches can provide the professional development teachers need to improve their instructional capacity and ultimately increase student achievement. As part of this work, the researchers examined factors that may impact teacher capacity in order to know how instructional coaches can increase teacher knowledge to meet the needs of their diverse students. The school system routinely provides professional development and assists educators with data analysis at the district and school level. Educators regularly collaborate in professional learning communities, but the achievement gaps between Black, Hispanic, and white students in ARPS persist. In examining why the gaps continue, the researchers identified a number of factors including teacher capacity, student diversity, administrator capacity, and instructional coach capacity.

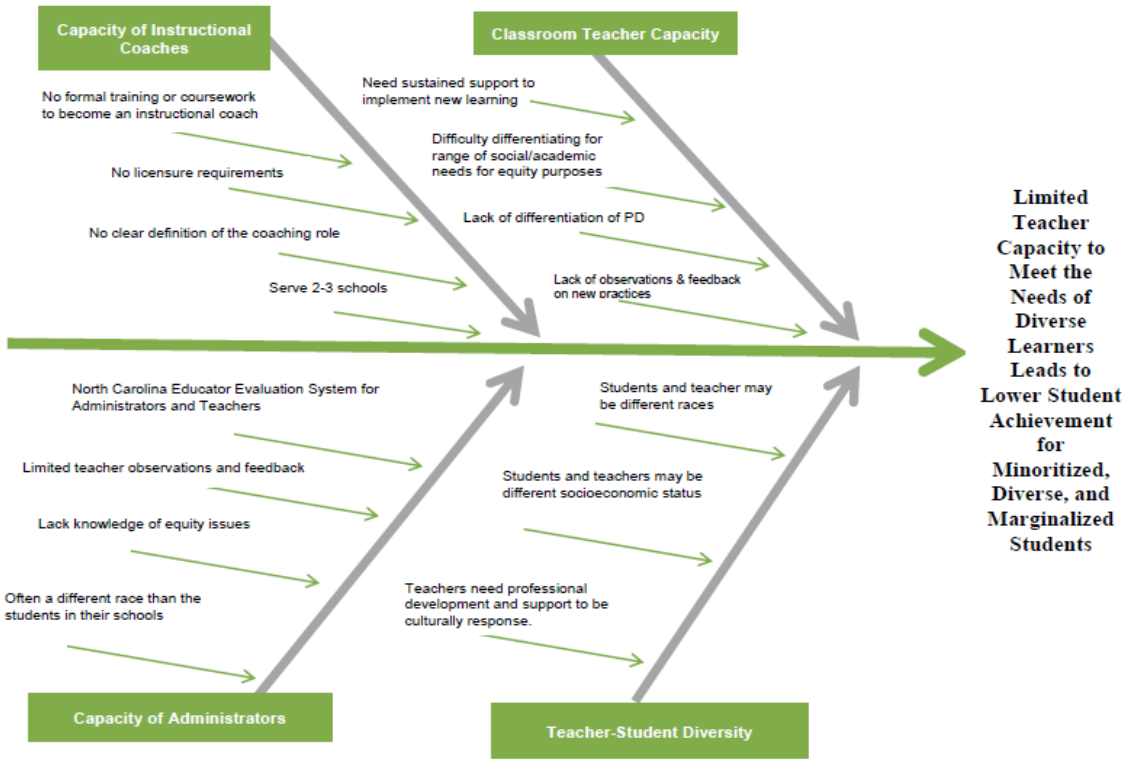
Teacher Capacity to Meet the Needs of Diverse Learners

Teachers' capacity to meet the needs of diverse learners is limited for a variety of reasons. For this research, an Ishikawa Diagram designed by Kaoru Ishikawa (1976) was used to identify the key root causes of limited teacher capacity and possible change ideas (Figure 13). The root causes identified were: teachers struggle with differentiation to address students' needs; educators do not reflect the characteristics of the students they teach; lack of implementation of professional development due to lack of sustained support and follow up; the capacity of administrators to support teachers to meet the needs of diverse students; and instructional

coaches who are unprepared to support teachers due to lack of preparation for their leadership role.

Figure 13

Ishikawa Diagram for the Causes of Limited Teacher Capacity



Teachers struggle with differentiation for diverse student needs. According to a 2013 National Education Association (NEA) report, an elementary teacher typically had 24 to 25 students in his or her class. Each student has his or her own unique learning needs and in a perfect classroom differentiation would occur daily across all subjects for all students. The reality is that instructional differentiation can be difficult without proper training and support for

educators (Tomlinson, 2017) and teachers also benefit from support with data analysis to determine students' levels of academic performance and needs. Tomlinson's (2017) framework for differentiation required that, "In a differentiated classroom, the teacher proactively plans and carries out varied approaches to content, process, and product in anticipation of and response to student differences in readiness, interest, and learning needs" (p. 10). As Tomlinson (2017) explained, educators need professional development on effective ways to address the needs of the different students in their classrooms because they can range from advanced learners to average learners to struggling learners and each group requires teachers to approach instruction differently to achieve academic success, which is knowledge not every teacher has inherently.

Students' needs are more than just academic. In order for students to feel safe enough to learn, their social-emotional needs must be addressed (Darling-Hammond, 2019). Many students come to school with a history of Adverse Childhood Experiences (ACEs). According to Ports, Ford, Merrick, and Guinn (2020), ACEs are "a collection of potentially traumatic exposures that individuals may experience during childhood ages 0 to 18 years" (p. 18) including, but not limited to parental separation or divorce, emotional neglect or abuse, and physical neglect or abuse. The medical field indicates early intervention for children with ACEs is essential to prevent risky and unhealthy behavior as adults (Felitti, 2009). Bethell, Newacheck, Hawes, and Halfon (2014) determined 22.6% of students experience two or more ACEs during childhood and that higher ACEs scores increased the risk of retention, absenteeism, and less engagement in school, all of which are issues teachers need skills to address in their classrooms. Burke, Hellman, Scott, Weems, and Carrion (2011) found that student's behavior and academic concerns increased as a student's ACEs number increases. Blodgett and Lanigan (2018) stated that "educators will benefit from broad literacy and skills in managing the developmental

challenges that can result from ACE exposure" (p. 144) and any systems that work with children should adopt "trauma-informed responses and resilience-building experiences" (p. 144). The reality is teachers may not have the skills to address ACEs effectively, which according to Darling-Hammond (2019) include creating a classroom culture that is positive for diverse students, teaching social-emotional skills in the classroom, practicing self-care, and making social-emotional learning an essential part of the school day.

Teacher-student diversity. According to the U.S. Department of Education (2016), in the 2012 school year, U.S. public school teachers were 82% white while only 51% of public school students were white. Only seven percent of teachers were Black and eight percent were Hispanic, while the students were 16% Black and 24% Hispanic (U.S. Department of Education, 2016), which leads to questions about educational equity since research showed students have more positive educational experiences in classrooms with a teacher of the same race (Dee, 2005; Goldhaber & Hansen, 2010; McGrady & Reynolds, 2012). Teachers also benefited from understanding the importance of cultural relevance in their classroom as a way to engage students (Blachowicz, et al., 2010; Bryk, et al., 2010). These potential problems can be ameliorated if teachers are culturally competent and incorporate materials and lessons that reflect their students because as Bryk et al. (2010) stated, "a deep understanding of students' background represents a powerful resource for teachers as they seek to establish the interpersonal connections necessary to teach" (p. 58).

Sustained support for implementation. Professional development for teachers used to be characterized by listening to an expert on a topic or instructional strategy followed by the expectation teachers implement the new knowledge on their own (Walker, 2013). Walker (2013) cited teachers derisively referred to PD as "Spray and Pray," "Drive By," or "Sit and Get"

because professional development did not meet standards for best practice so the strategies were rarely incorporated as intended into educational actions. According to Darling-Hammond, Wei, Andree, Richardson, and Orphanos (2009), high quality professional development involved learning from "experts, mentors, and peers," (p. 3) and included opportunities for collaboration and follow up learning, which traditional professional development lacked. These findings are also supported by Tomlinson and Murphy (2015) and Learning Forward's Standards for Professional Learning (n.d.) who emphasized the importance of extensive job embedded professional development throughout the entire change initiative with opportunities for collaboration.

Professional development should be differentiated to address the needs of teachers from where they currently are and where they need to go (Learning Forward, n.d.; Tomlinson & Murphy, 2015), but that is not always the case. Learning Forward (n.d.) cited educators' need for "active learning" experiences, which include "practice with feedback, coaching, modeling, and problem solving" that may not occur due to limited resources. For example, limited resources may include lack of time for administrators to conduct multiple observations or provide follow-up for teachers. As a result, professional development that does not follow these criteria for best practices is quickly forgotten as teachers return to the instructional practices they already know and are familiar with rather than trying something new.

The capacity of administrators. Like teachers, school administrators need to increase their professional capacity to address the needs of diverse students. School administrators impact student achievement (National Association of Secondary School Principals & National Association of Elementary School Principals, 2013), but administrators' ability to transform schools may be limited by lack of understanding of equity issues. In 2012, 80% of all school

principals were white, ten percent were Black, and only seven percent were Hispanic, which was not reflective of public school students (Hill, Ottem, & DeRoche, 2016). Lack of diversity among administrators may impede their ability to discuss and confront educational issues for minority students resulting in what Acker (2006) called an "inequality regime," defined as "loosely interrelated practices, process, actions, and meanings that results in and maintain class, gender, and racial inequalities within an organization" (p. 443). In order to break these patterns of inequity, administrators must educate themselves about systemic racism and critical race theory in order to close the achievement gap (Theoharis & Haddix, 2011).

Another limit on administrators' professional capacity is the North Carolina Educator Evaluation System for observation and evaluation of teachers and administrators. This system is used by administrators to ensure educators in the building continue to grow professionally in identified areas but the tool itself limits that growth. The National Policy Board for Educational Administration (NPBEA, 2018) wrote National Educational Leadership Preparation (NELP) standards and included a standard to address the importance of cultural competence with Standard 3: Equity, Inclusiveness, and Cultural Responsiveness. NELP Standard 3 requires administrators demonstrate a commitment to an inclusive school culture with equitable resources for individuals and focused on implementing culturally responsive instructional and behavior support practices (NPBEA, 2018) because this is essential for school improvement. However, North Carolina Standards for School Administrators (2006), which district leaders use to evaluate principals and assistant principals across the State, do not include a standard that focuses on equity or cultural responsiveness. A person can infer aspects of these important concepts within certain standards, but there is no explicit leadership standard that commits administrators to this important work. This lack of explicit acknowledgement of the need to work

on equity issues is a glaring oversight which may allow principals to avoid this challenging work towards school improvement.

The lack of focus on equity and inclusiveness as well as minimal expectations for observation and feedback is evident in North Carolina's teacher evaluation tool. The evaluation tool administrators use to observe teachers includes five standards every teacher is evaluated over the course of a five-year cycle: (1) Teachers demonstrate leadership; (2) Teachers establish a respectful environment for a diverse population of students; (3) Teachers know the content they teach; (4) Teachers facilitate learning for their students; and (5) Teachers reflect on their practice (North Carolina Department of Public Instruction & State Board of Education, 2009). The standard in which teachers establish a respectful environment for diverse student populations is only evaluated one year during the course of the five-year cycle. These standards only require a basic knowledge of diversity and differentiation to be considered proficient as a teacher and are evaluated infrequently by administrators, based on North Carolina's own observation schedule (North Carolina Department of Public Instruction and the State Board of Education, 2009).

According to the North Carolina Teacher Evaluation Process manual written by the North Carolina Department of Public Instruction and the State Board of Education (2009), principals are required to observe new teachers three times a year for a minimum of 45 minutes per observation and provide feedback to each teacher. After three years of teaching, teachers are then only evaluated on demonstrating leadership and facilitating learning for their students four out of every five years. Some teachers require only two observations at a minimum of 20 minutes each based on their experience status. This observation requirement is low and may not provide an accurate picture of what occurs on a daily basis in a classroom, especially when looking for

integration of new instructional practices. The limited number of observations will not facilitate the sustained implementation of new professional learning.

The next challenge for administrators is the expectation to design professional development for teachers based on classroom observations and data (Rigby, 2015; Woulfin & Rigby, 2017), which is often limited. Administrators need support in this area because they may not have the necessary content knowledge, materials or resources, and time to effectively support teachers' needs (Gabriel & Woulfin, 2017; Rigby et al., 2017).

Instructional coaches' capacity. Teachers who become instructional coaches are often skilled classroom teachers, but may not possess the skills to be an effective instructional coach due to the different skill sets each role requires (Gallucci et al., 2010). This preparation gap for instructional coaches is problematic because Kraft and Blazar (2018) found in their meta-analysis of ICs that "quality matters more than quantity" (p. 5) but the methods for "recruiting, selecting, and training coaches" essentially do not exist (p. 5). Teachers who want to become coaches lack the opportunity for instructional coach training and they typically only receive professional development in this area after they become a coach as typified by the training provided by Knight's (2019) and Aguilar's (2019) professional development opportunities for new or experienced coaches.

Instructional Coach Preparation

The key question the researchers had was how do coaches learn the broad expectations of the coaching role before they engage in the work? A simple Google search for "instructional coach" revealed a number of options for professional learning for instructional coaches, ranging from add-on Master's level certifications to workshops. There were few if any preparation programs that were cost effective and respectful of the limited time current teachers may have.

Still, training is essential and requires more than a review of basic skills. Lucas (2017), a former instructional coach who began the role with no prior coaching training, wrote that "a coach with knowledge of content and the ability to navigate through a teacher's defenses, in order to form a trusting, collegial relationship, has an opportunity to make an impact" (p. 31). If there are skilled teachers in classrooms that have the potential to become effective, impactful instructional coaches it stands to reason that a district would find strategies to adequately prepare them to meet the needs of the coaching program. Developing a preparatory coaching program that targets teachers who have interest in becoming coaches could provide a strong instructional coach applicant pool while strengthening their practice as teacher leaders. This preparatory program can build the capacity of teachers who seek to become coaches soon, teachers who may become coaches at a later date and teachers who remain in the classroom or take on other leadership roles.

While there is limited current research on preparatory programs for instructional coaches, there is a great deal of work on the power of having skilled coaches work with teachers. Kraft and Blazar (2018) contended that in the case of teachers seeking to strengthen professional capability to improve student outcomes, instructional coaches are, in essence, an intervention. The skills and capability of the coach can enhance the power of the intervention. The gap exists in preparing educators before they become instructional coaches, prior to taking on the role of supporting teachers in schools. Thus, to increase the capability of teachers to meet the range of diverse learners in classes, increasing the capacity of instructional coaches must be targeted. Well prepared, skilled coaches can better support teachers, which can then elicit change in the classroom.

In this study, the researchers found, as of 2019, several university programs that offer a Master of Education with an option to choose instructional coaching as an area of specialization or other certification (Clemson University, 2019; Dordt University, 2019; Emporia State University, 2019; North Central College, 2019) but higher education options, such as these, are time consuming and expensive. Emporia State's program takes at least a year to complete at a minimum cost of $10,200. North Central College costs $20,000 a year and does not list a timeframe for completion but does require 34 credit hours to complete the degree. Clemson's program is entirely available online at a cost of $14,000 a year and takes 12 months to complete.

Literature about effective instructional coaching cited the need for ICs to receive professional development on how to coach; however, the focus of this professional development is on support after the individual becomes a coach (Gallucci et al., 2010; Kowal & Steiner, 2007; Will, 2017) rather than preparing coaches beforehand. This knowledge gap for a new instructional coach means the educator learns entirely on the job rather than knowing what to expect. Deussen et al. (2007) noted ICs felt they were "building the airplane while flying it" (p. 9). Denton and Hasbrouck (2009) specifically cited their "concern that insufficient training is being provided to coaches" (p. 169) and Gibson (2005) stated "coaches will experience a set of specific and challenging issues requiring learning and growth" (p. 72) all of which should be addressed before becoming a coach rather than after taking on this educational leadership role. The skills an IC needs are different than those of a classroom teacher and these skills must be introduced and taught to them in order for a coach to be effective in his or her role.

Lack of preparation for instructional coaches is problematic because districts invest a great deal of financial and other resources to implement coaching programs (Learning Forward, n.d.). Although job embedded professional development is clearly more effective for educators,

the use of instructional coaches can also cost six to 12 times more than traditional professional development activities (Knight, 2012). The cost for the salary of an instructional coach typically exceeds the cost of traditional professional development, but provides ongoing, embedded learning for teachers. If school systems are going to invest significant resources in a coaching program, it is logical they would want candidates who are already prepared for the job rather than learning all the skills after assuming the leadership role.

Knowing these potential causes of the challenges ARPS educators face, the question became which cause could be addressed in a way that would be most impactful for educators in their daily practice and students' academic outcomes? While each cause is important to address in order to impact student achievement, this improvement initiative addressed increasing the capacity of instructional coaches. Using Bryk et al.'s (2010) essential supports and the researchers' causal determination for the problem as the basis for this improvement initiative, instructional coaches were the focus because of their ability to increase teacher and administrator capacity through job embedded professional development, to collaborate with stakeholders to create student centered learning climates, and provide instructional guidance on standards and rigor. Essentially an instructional coach can provide professional support across numerous areas essential to transformational change to build educators' capacity to meet the needs of diverse learners and as a result, improvement in the various areas will likely lead to increased student achievement in the long term.

Presenting the Case for Instructional Coaches

The discussion regarding the work teachers do in the classroom and how it impacts student achievement is an important one. Connor (2017) noted, "policymakers and educational leaders are increasingly focused on teacher performance and student outcomes, with the implicit

assumption that teachers are fully responsible for their students' gains" (p.78). Teachers are held accountable to stakeholders beyond students and parents. The continual pressure on schools to meet constantly changing educational expectations and demonstrate new student learning outcomes requires systemic improvements (Mangin & Dunsmore, 2015). Policymakers at both the state and federal levels have looked for ways to successfully close achievement gaps between advantaged and disadvantaged students, and although there are multiple factors to consider when examining this issue, they frequently return to teacher quality as a prime concern (Goldhaber, Lavery & Theobald, 2015.) Teacher quality is based around the skills a teacher can bring to the classroom, how they work with students and how they meet the range of needs within that classroom. As Chetty, Friedman and Rockoff (2011) found, teacher effectiveness, using value added measures, impacts student outcomes over the long term. More importantly, those differences in student achievement are impacted by qualitative differences among teachers (Hanushek, 2016).

When a teacher struggles to modify his or her practice and is subsequently unable to adequately address student needs, student outcomes suffer. Those outcomes can be both academic and social, and the results of teacher inability to successfully support students can result in performance disparities. In fact, Atlay, Tieben, Hillmert and Fauth (2019) found that not all classroom methods are effective with students across socioeconomic levels and a teacher's classroom management abilities are positively correlated with student achievement. This information, combined with Hattie's (2012) research that found a high quality teacher was one of the most powerful influences on student learning outcomes makes a strong case for the need to provide high impact, ongoing, professional learning opportunities for teachers to continually improve their practice.

Professional development, targeted to improving teacher quality, is essential to address these challenges and can be successful in reducing gaps in both instruction and classroom management. ESSA (2015) encouraged professional development for teachers that is embedded into their daily work and incorporates collaboration. Darling-Hammond et al. (2009) concluded that intensive professional development related to supporting teacher planning, instruction and application of new learning was more likely to influence teacher practice and result in student learning outcomes. However, recognizing the many responsibilities of teachers, they often have little time to devote to professional development, most of which take on the format of one-day workshops with no follow-up, lacking the intensive support or dedicated time to implement successfully into already busy classrooms (Devine et al., 2013). According to Kennedy (2016), the traditional delivery method of professional development programs was meeting "with teachers *outside* of their classrooms to talk about teaching, yet they expect their words to alter teachers' behaviors *inside* the classroom" (p. 947). What is more likely to result in a meaningful impact is professional development that becomes part of the business of the classroom and is embedded into practices that occur naturally. Professional development that translates into changes in teacher behavior and can be observed in classroom practice has the power to elicit change, which is where ICs are essential.

Utilizing instructional coaches as a vehicle for change by supporting teachers and providing embedded professional development can empower classroom practice. It is a mighty step forward for districts and schools that are willing to commit to implementation. Fullan and Knight (2011) asserted that any comprehensive efforts for real reform will fall short on instructional improvement without coaching. Instructional coaches can ensure a focus on classroom practice by holding teachers accountable for professional development initiatives,

providing feedback and supporting the reflective practice needed to successfully engage diverse learners.

The actionable nature of coaching is promising as professional development that can promote teacher change (Galey, 2016). As a result, instructional coaching has potential to increase teacher capacity. More specifically, increasing teacher capacity through coaching can target specific classroom issues in which teachers struggle and negatively impact student outcomes. For example, ongoing professional development using teacher coaching centered around racial discipline gaps has been shown to improve teacher practice due to the individualized and observational nature of coaching (Gregory et al., 2016). Connor's (2017) review of coaching models found that a common theme across models was that instructional coaching, driven by data, can positively impact teacher practice, resulting in improved student outcomes. Coaching feedback, teacher reflection and professional support when taking the risk to try new strategies benefits students. The advantage to implementing instructional coaches, as outlined by Devine et al. (2013), was that coaches provide onsite professional development opportunities to teachers, often within the classroom environment. In a political climate where student performance is analyzed, and analyzed again, instructional coaches can be change agents to guide teachers in how to effectively analyze student data and to use data for instructional change. For districts that invest in instructional coaches, they create the potential for coaches to build teacher capacity and better respond to student learning data (Huguet, Marsh & Farrell, 2014).

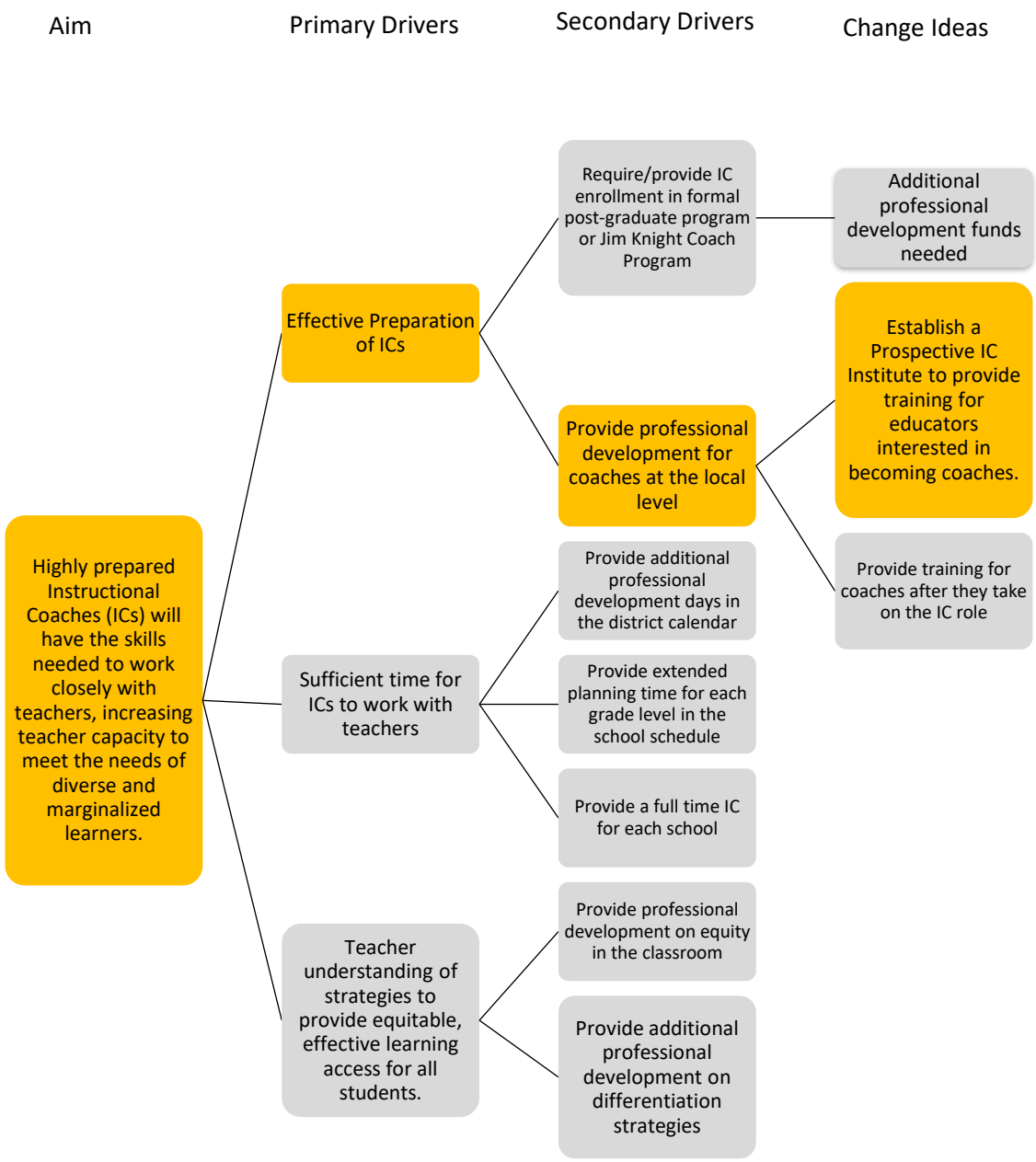
Theory of Improvement in ARPS

Seeking an efficient, fiscally realistic strategy for preparing instructional coaches while they are currently serving in other teaching roles is a challenge, but it is not insurmountable, as detailed in

the driver diagram (Figure 14). In ARPS, the model was to provide an Instructional Coach Institute that sought to prepare educators prior to assuming coaching roles, building their capacity to support other teachers and providing the opportunity for further student impact. As policymakers and the community at large call for improved student outcomes, providing highly qualified and well-prepared educators in all schools is essential. Ultimately, the goal to improve student learning outcomes can be achieved by increasing teacher capacity, and instructional coaches allow schools to provide individualized professional learning opportunities for teachers in unique and relevant ways. However, coaches' learning must be supported as well.

Figure 14

Theory of Improvement Driver Diagram



Parents want their child to receive a top quality education in preparation for college or career, and research shows an effective teacher has a significant impact on a student's academic achievement (Darling-Hammond et al., 2009; Tucker & Stronge, 2005). As in any other field,

educational best practices change over time and teachers should adapt their classroom practices as well. Change, however, is not easy although it is very possible in the right conditions (Fullan et al., 2005). For educators to change, the right conditions include continually supported and intensive professional development opportunities. (Darling-Hammond et al., 2009). A reasonable conclusion is that student achievement will not improve if teachers do not change instructional practices, but teachers need job embedded support to effectively implement new instructional practices (Devine et al., 2013; Hirsch, 2009; Learning Forward, n.d.). Fortunately for educators, instructional coaches can provide this essential support for meaningful instructional change.

NCLB (2001) recognized the need for sustained support and required school and district improvement plans to focus on professional development. Thus, the implementation of instructional coaches as an effective professional development model emerged fully in the early 2000s, although utilizing a coach to improve skills was not a new idea. Other fields including sports, health sciences, and organizational management also used coaches to improve employees' skills through job embedded professional development (Bozer & Jones, 2018; Eisenberg et al, 2017; Knight, 2009). As a result, federal policy focused more on professional development, many districts now implement instructional coaches to support teachers in their instructional practice (Woulfin & Rigby, 2017).

Unfortunately, instructional coaches typically lack preparation for their leadership role because there is not a required licensure or coursework requirement for coaches as there is for administrators and superintendents. Most literature about developing instructional coaches focused on how to improve their skills after they become a coach (Gallucci et al., 2010; Kowal & Steiner, 2007; Will, 2017). For this reason, the researchers' theory of improvement sought to develop and implement an Instructional Coach Institute for prospective instructional coaches

which focused on the coaching role, equitable learning opportunities, andragogy, coaching models and addressing challenging conversations in an effort to effectively increase the aptitude of potential coaches and build the capacity of teachers as they work to meet the diverse needs of students and increase student achievement.

Institutionalizing the Role of Instructional Coaches

Instructional coaches are an effective way to support teachers as they grow instructionally by integrating new learning through job embedded professional development, but because ICs are relatively new in the education field, there is not a clear definition of an instructional coach. As Woulfin and Rigby (2017) stated, “The coach’s role is not yet institutionalized; it varies across states, districts, and even within schools” (p. 323) and “there are substantial differences in the structures and practices of coaching across contexts” (p. 324).

For this improvement initiative, the researchers defined instructional coaches as highly qualified educators who leave the classroom to become instructional leaders, providing job embedded professional development for school-based educators. Typically, instructional coaches are responsible for: leading professional development and monitoring implementation fidelity; modeling high yield instructional practices and effective strategies; observing teachers and providing feedback; analyzing data and facilitating next instructional steps; utilizing the coaching cycle to support both novice and experienced teachers; and understanding how adults learn.

The lack of required coursework, licensure, or training to become an instructional coach hinders the understanding of coaching responsibilities and the expectations of the role compared to the teaching role. Instructional coaches in ARPS are typically selected as coaches because of their effective classroom instructional practices or leadership of school level professional

development. However, they begin coaching without any specific preparation specific to the role. Instructional coaches must work closely with teachers to increase teacher capacity, ensuring teachers meet the needs of diverse learners and ultimately increasing student achievement, necessitating IC preparation.

Improvement Methodology & Design for the Instructional Coach Institute

In order to address the need for instructional coach preparation, the researchers decided to implement an Instructional Coach Institute and study the impact of the Institute on participants. This section details the steps the researchers took to design the this improvement initiative including the methodology the researchers used, the chosen research design, how formative and summative data was collected, and the procedures the researchers followed throughout the process.

For purposes of this study a design team was assembled consisting of stakeholders with various expertise to contribute to this improvement initiative. The design team provided feedback on the improvement initiative, oversaw the implementation and provided ongoing input throughout the process as needed. All design team members were employed by ARPS, consisting of the Assistant Superintendent for Instructional Services, the Director for Middle Schools and Academically Gifted Services, an elementary principal, an experienced instructional coach, and a new-to-the-role instructional coach. The varied backgrounds and experiences of this team had the potential to positively impact the implementation of the improvement initiative and create a valuable experience for the school district. The researchers also provided their own specific background experience, one being the Exceptional Children's Director and one the Elementary Education and Title I Director for ARPS. Across the team, there were representatives from

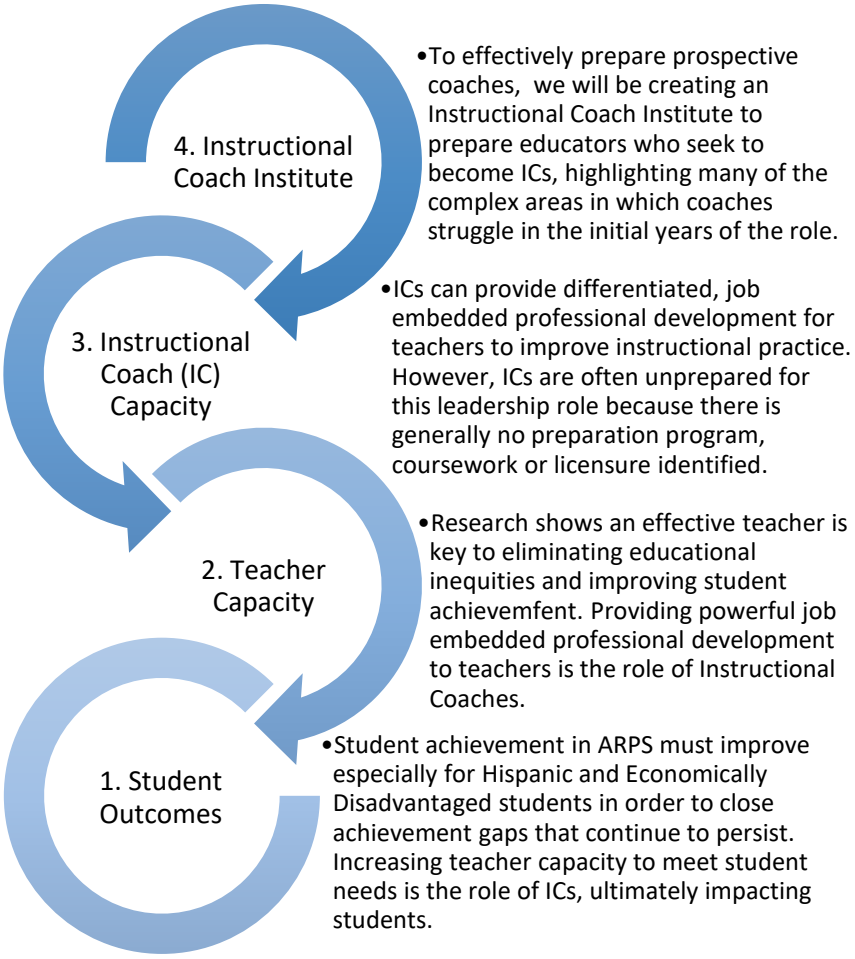
elementary, middle school, high school and district office experience, as well as varied lenses through which each team member worked with instructional coaches.

Improvement Initiative

To begin this Improvement Initiative, the researchers developed a progression that considered contributing elements that influence student achievement (Figure 15). The researchers began by exploring the lack of student achievement, especially for Black/African American, Hispanic/Latinx, and economically disadvantaged students, and the resulting achievement gaps in student outcomes both nationally and in ARPS' data. For this reason, the driving force behind the planned Improvement Initiative began with a focus on student outcomes, especially regarding achievement gaps for identified subgroups in ARPS. This led the researchers to consider the importance of teacher capacity to effectively meet the varied student needs in the classroom. Addressing the learning needs of the range of students in any given class, teachers must be adequately prepared to provide differentiated instruction. "Differentiation lifts the professional level of teachers by giving them both the opportunity and tools to chart pathways to success for all of the young people they serve" (Tomlinson & Murphy, 2015, p. 2).

Figure 15

Improvement Initiative Progression



Increasing teacher capacity requires professional learning opportunities that meet the demands of changing classrooms and student needs. Teachers must demonstrate a broad range of instructional skills and content knowledge, requiring ongoing and robust professional development. Both explicit and embedded professional development is essential to assist in building teacher capacity to facilitate student learning. Teachers should be supported through professional learning from trainings and other outside opportunities, but also through in-classroom support as they seek to implement new learning. Models of professional development

resulting in increased, measurable student learning gains include integrated time for students to reflect on new learning, make changes to practice and receive feedback (Darling-Hammond, Hyler, & Gardner, 2017.)

The vehicle by which individualized professional learning opportunities can best be delivered is through instructional coaches. This provided the basis for part three of the Improvement Initiative progression, where the emphasis is on IC capacity, a powerful element in helping teachers grow professionally. However, to provide teacher support at a highly effective level, ICs must be prepared themselves. As there was generally no convenient licensure, preparation program or coursework specific to advancing to this role, the improvement initiative created and implemented an Instructional Coach Institute, providing targeted learning opportunities in key skill areas and equitable practices that are essential for effective coaching upon entering the role.

Improvement initiative specifications. The purpose of the improvement initiative, the Instructional Coach Institute, was to provide aspiring instructional coaches with training and skills necessary to be effective coaches prior to taking on the role. Ideally this specific instruction benefited participants in both their current roles and for future leadership positions. The improvement initiative consisted of six sessions for teachers interested in becoming coaches at some point in their career. Researchers determined, with the help of the improvement initiative design team, that six sessions would provide sufficient time to cover the necessary topics, and was a reasonable number of sessions for teachers to meet after the school day without placing undue expectations on them. In addition, there were two homework assignments in which participants engaged during the course of the Institute, allowing additional participant reflection on session content.

The beginning session provided an overview of coaching, basic responsibilities of a coach and the necessary skill set to coach successfully. The session also established key areas to be covered in the remaining sessions. At the end of each session, including the first, data was gathered from participants regarding the focus topic. Subsequent sessions provided training in andragogy (principles of adult learning), addressing bias in classroom practices, various coaching models, asset versus deficit-based thinking, and skills needed for conducting difficult conversations. Each of the session topics aligned to two or more of Bryk et al.'s (2010) Essential Supports for School Improvement, which provided the theoretical framework for this Improvement Initiative. By addressing these topics, the Institute sought to increase prospective coaches' aptitude in building the teacher capacity to meet the diverse needs of students, potentially leading to increased student achievement.

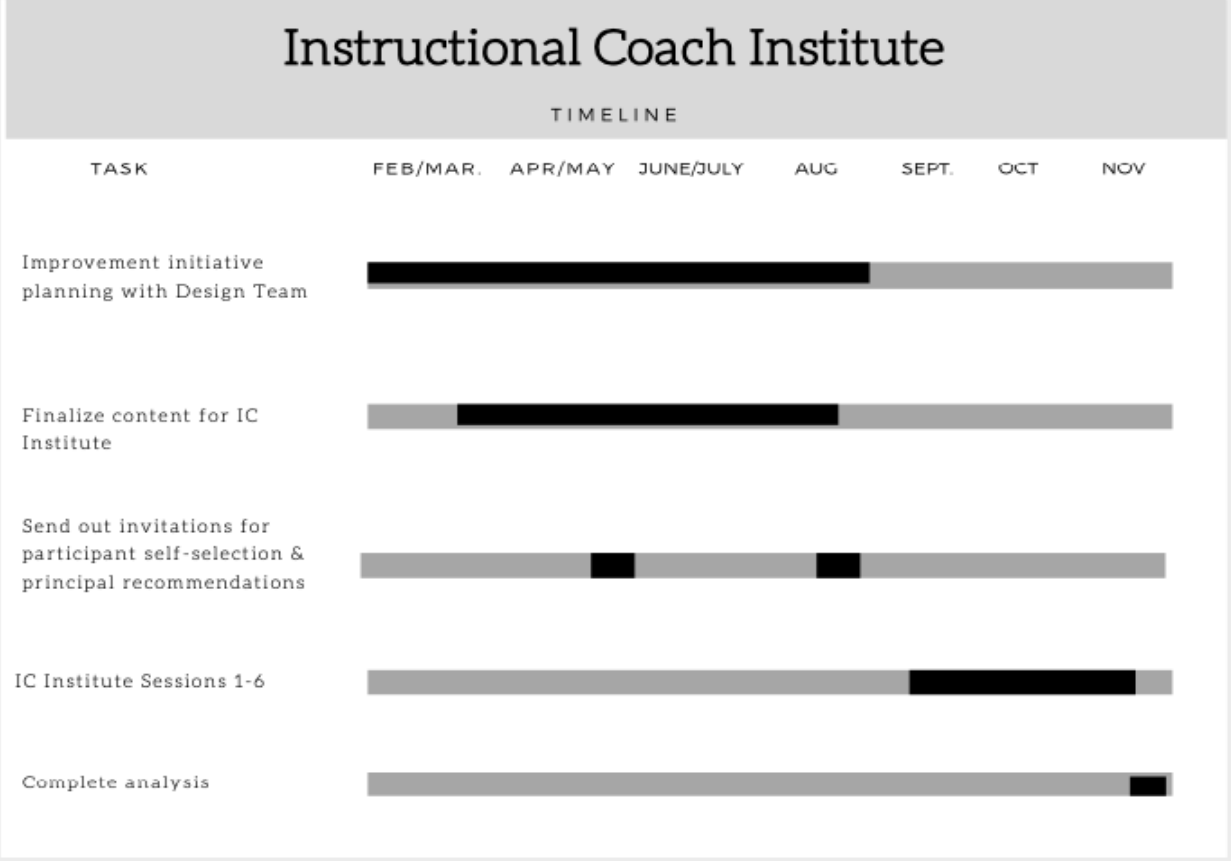
To support this improvement initiative, the design team provided input as to the delivery of the content. In addition, they were prepared to address any concerns that arose during the process by providing problem solving strategies and suggesting solutions. Ultimately, intervention by the design team was not necessary during this improvement initiative. At the conclusion of the improvement project, outcome data from the Instructional Coach Institute was shared with the team to determine long-term applications and sustainability of the Institute for ARPS.

Implementation of the improvement project began with preparation throughout the spring and summer of 2020 for content of the Institute, with implementation of the Institute in the fall of 2020. During this timeframe, modifications had to be made due to COVID-19. The timeline for the actual Institute was eight weeks and the virtual sessions were scheduled approximately every two weeks. The eight week time frame for the Institute accommodated ARPS' school calendar

restrictions and provided reflection time for participants between sessions. The timeframe also respected that teachers had responsibilities and obligations related to their teaching roles while taking part in the improvement initiative. Each of the six Institute session lasted one and half-hours either after the school day or on an optional teacher workday. The additional time between sessions allowed the researchers to complete the Plan-Do-Study-Act reflection cycle (Langley et al., 2009) and provide two virtual content assignments between specific sessions to support on-going participant learning. The timeframe for the Improvement Initiative is illustrated in Figure 16.

Figure 16

Timeframe for Improvement Initiative



There were both long-term and short-term outcomes the researchers expected to achieve upon conclusion of the improvement initiative. The Institute design allowed for a pretest and posttest comparison of participant self-reported efficacy in content from each of the six session areas of the Institute. The short-term goal was that participants would show a statistically significant difference in their self-reported understanding of the instructional coaching areas and develop an increased understanding of how these skills benefit the coaching role, as measured after each session and then again after the entire Institute compared to their knowledge and understanding before the Institute began. Knowledge and understanding of the six session topics, if increased in prospective IC candidates, can serve to enhance the coach candidate pool over the long term. In addition, there is the long term potential to strengthen current classroom practice of participants, resulting in increased performance among diverse learners in the classrooms of teachers who attended the Institute.

M**ethodology**

The study focused on current ARPS' employees with at least five successful years of experience as educators in a kindergarten through fifth grade school setting, who participated in the Instructional Coach Institute designed to inform and prepare prospective instructional coaches. As there were 13 elementary schools in the district, a minimum of 13 participants was expected, with a goal of having at least one teacher from each school and a maximum number of 26 participants for the improvement initiative. Principals were told they would be asked to encourage teachers they believed possessed the leadership potential to take on this role, but participant registrations exceeded expectations and administrator recommendations were not needed. Ultimately, the Institute began with 29 participants. Participants self-selected for this

improvement initiative based on personal interest in potentially becoming an instructional coach for ARPS.

The non-probability, purposive sampling procedure required that participants be self-selected from the current district elementary teachers who possessed an interest in becoming an instructional coach, requiring participants to identify themselves for participation in the study. Demographics of the resulting participants included males and females with a minimum of five years teaching experience. As noted previously, the staff ethnic distribution of ARPS was predominantly white and female, and the participants reflected this demographic distribution. The participants in the Institute were primarily kindergarten through fifth grade classroom teachers, but also included two Exceptional Children's teachers, an Individualized Education Plan specialist, a behavior support specialist, and an intervention specialist.

Research Design

For this improvement initiative, the researchers used a within group experimental design (Tanner, 2012). More specifically it was a one group pretest and posttest design in which all participants completed a pretest at the beginning of the first Institute session and a posttest at the end of the final Institute session. Using a pretest and posttest design allowed comparison between participants' answers to questions about instructional coaching skills and equitable classrooms from the beginning of the improvement initiative to the end of the initiative. The researchers developed the survey items based on essential components of instructional coaching as extrapolated from research and from equitable classroom practices as identified in Maryland's Montgomery County Public Schools' *A Resource for Equitable Classroom Practices* (2010). The researchers also used essential elements for culturally proficient practices (Lindsey, Martinez,

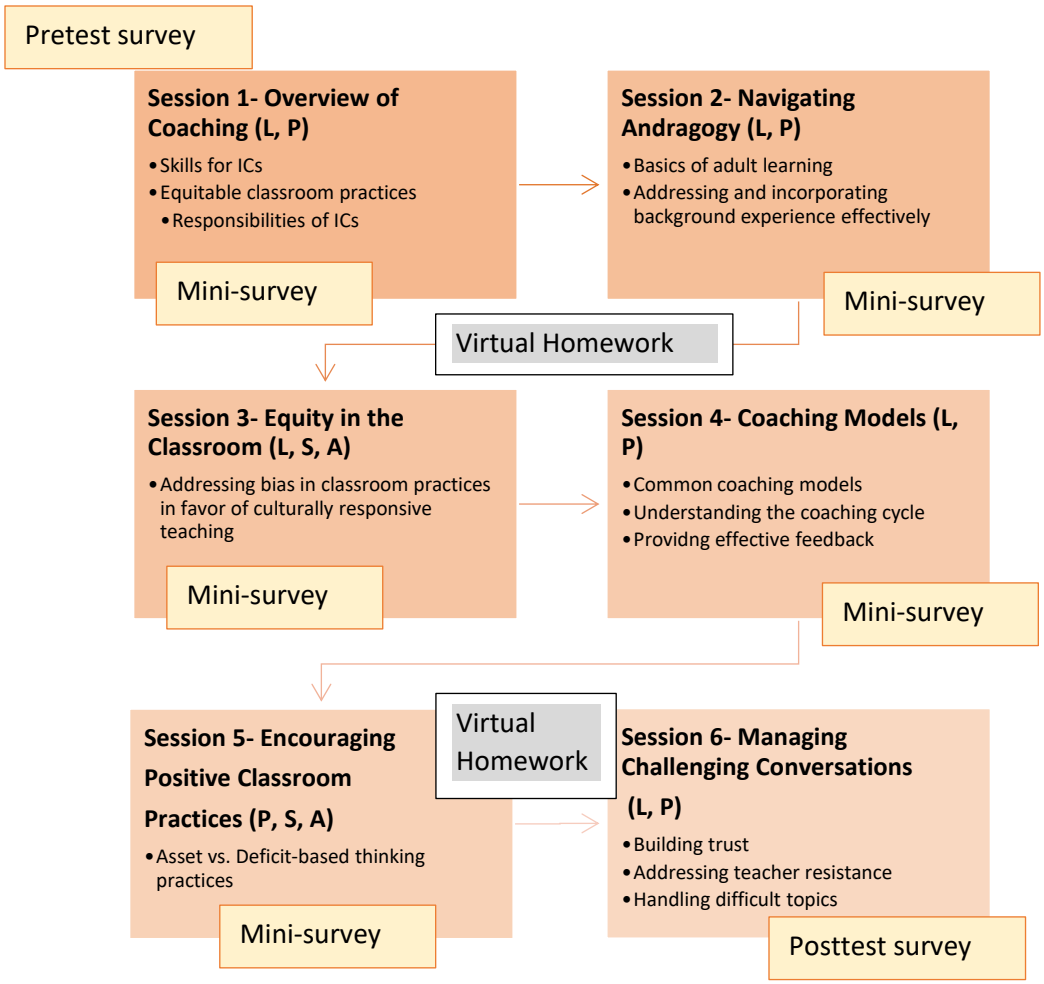
Lindsey, & Myatt, 2020) to develop survey items. All surveys used in the Institute are found in Appendices A through G.

After each hour and a half session concluded, time was preserved at the end of the session for participants to take a mini-survey, collecting immediate feedback data regarding their understanding of each session topic and skills that was compared to participants' responses on the Institute pretest. The collection of this continuous data determined if participants reported an increase in self-reported self-efficacy in the skill areas addressed and allowed researchers to follow the Plan-Do-Study-Act framework (Langley et al., 2009). The data was analyzed after each session for statistically significant improvement and informed Institute content delivery in upcoming sessions (Figure 17). Researchers analyzed participants' lingering questions from the post session surveys about coaching skills or topics and aligned the questions to upcoming Institute sessions. Researchers shared the questions with the appropriate facilitators of upcoming sessions in order for them to incorporate supporting content in their sessions.

Bryk et al.'s (2010) Essential Supports for School Improvement provide the theoretical framework for the entire Institute and each session was given a notation as it corresponded to this framework. Each session of the Institute aligned with at least two of the Essential Supports directly, as labeled in Figure 17. Leadership is abbreviated as "L", researchers did not see Parent Community Ties, the fifth Bryk et al.'s (2010) support as applicable to the content of the Institute sessions.

Figure 17

Formative Assessment Cycles at the Conclusion of Each Session During the Eight-Week Institute



Researchers consulted with facilitators for each Institute session to guide session content and facilitators provided all instruction to ensure there was no bias based on the leadership roles held by the researchers. Facilitators included an ARPS elementary school principal who had previously been an instructional coach, the ARPS Assistant Superintendent for Curriculum & Instruction, the Chief Academic Officer at a state Advancement of Teaching center, the ARPS English as a Second Language/Migrant Education Programs Director, a Middle and Secondary

Education Coordinator at the local Education Service Alliance, and the Assistant Professor and Program Director of a local university Educational Leadership program.

Balancing measures refer to the monitoring of impacts that are not being measured in the improvement initiative but may be affected (Carnegie Foundation for the Advancement of Teaching, 2019). While specific coaching skill areas were included in the Institute, the study measured self-reported improvement in skills and understandings of participants. Since participants self-selected for the Institute based on personal goals and motivations, personal interest may have prompted participants to seek additional outside information beyond that provided in the course of the Institute. There were no specific balancing measures in place for this possibility, though the researchers do not believe this possibility had an adverse impact on any data collected. Additional balancing measures included participants falling behind in regular teaching responsibilities, which researchers were mindful of during the course of the Institute especially in light of the changes to the school calendar and teachers' responsibilities due to COVID-19.

Formative and Summative Improvement Methodology

The pretest and posttest design was administered to participants electronically through an Institute pretest (Appendix A), an Institute posttest (Appendix G), and mini-surveys after each Institute session (Appendices B through F) through Qualtrics, a web-based survey software program. Each participant had an anonymous identifier that allowed researchers to match participant's responses from the pretest, posttest, and post session surveys, and maintained participant confidentiality.

The researchers emailed the pretest survey link at the beginning of the first session for participants to complete prior to beginning the content for session one. Links for each mini-

survey were emailed directly to participants near the end of each session and facilitators also shared the survey links with participants as part of their presentations at the conclusion of their session. Implementation time for the survey instruments was approximately ten minutes per session. For Institute session five, one survey link did not work correctly and this was reported to the researchers by the participants. The researchers emailed a corrected link to all participants immediately to correct this issue. The impact on the collected data was minimal and did not affect overall responses. All efforts were made to ensure the participant experience was as straightforward and efficient as possible while gathering crucial data.

Measurement and Variables

The structure of this study utilized both quantitative and qualitative methodology based on the survey data being collected. The independent variable was participation in the Instructional Coach Institute. The dependent variable for the research was self-reported efficacy in targeted skills pertaining to the IC role. At the conclusion of the Institute, the pretest survey data, collected by the researchers, was compared to the posttest survey data using Statistical Package for the Social Sciences (SPSS) for analysis. The same process was followed for pretest data and mini-survey data.

Outcome, driver and process measures were analyzed from data collected through the pretest and posttest, utilizing Likert scale questions, rank order prioritization and open-ended questions, and taking approximately ten minutes to administer. Outcome measures assisted the researchers in determining if progress was made on the improvement to be measured (Carnegie Foundation for the Advancement of Teaching, 2019). In this case, the outcome measure was determined using a dependent samples T-test used to compare pretest responses of the participant group from the pretest to the post test. A dependent samples T-test was also used to compare

participants' responses from the pretest to their responses on each post session mini-survey (Tanner, 2012). The ranked order question used on the pretest, posttest, and the first session mini-survey was analyzed using a one way Friedman's Analysis of Variance (ANOVA) (Tanner, 2012). Data from the ANOVA were analyzed to determine any differences reported by the participants to determine if there was a statistically significant difference between participants' knowledge and understanding prior to the Institute compared to after the completion of all Institute sessions, examining how the theory of improvement performed (Carnegie Foundation for the Advancement of Teaching, 2019), which was a process measure.

On the post session mini-surveys, outcome measures that used open-ended survey items were analyzed using double blind In Vivo coding (Saldaña, 2016) for first cycle coding of qualitative data and then the researchers collaborated for the second cycle of coding. In Vivo coding allowed the researchers to utilize specific participant generated terms and phrases provided in the open-ended responses relative to the content of the institute (Saldaña, 2016). Use of participant generated language assisted researchers in determining which concepts, related to institute content, resonated most with participants. Each post session mini-survey included one or more open-ended questions. These questions were designed to solicit participants' deeper insight from the sessions, and included opportunities for participants to share why they selected particular rank orders, or why they responded in specific ways on other questions, as well as asking what might have surprised them or what they might like to learn more about (see Appendices B-G). Topics participants indicated they wanted to learn more about were shared with session facilitators for subsequent sessions to inform content.

Procedure

Before beginning the study, protocols for access to the subjects was completed. This included both the Western Carolina University Institutional Review Board proposal procedure and the ARPS District Research Proposal, which was submitted to the Assistant Superintendent of Instructional Services. Confidentiality for all participants was maintained by ensuring that all instruments were submitted anonymously using an anonymous identifier. While participants were known to the researchers because of their participation in the Institute, participants' individual responses on surveys were not identifiable to the researchers except through the anonymous identifiers, maintaining the validity and confidentiality of responses.

The study began by sending an email invitation to all elementary certified educators to solicit participants for the Instructional Coach Institute. The invitation was sent for the first time following approval of the researchers' proposal defense in May 2020. After the first invitation, 29 participants registered, exceeding participation expectations and a second invitation was not distributed. Once self-selection of participants who met the criteria of five years teaching experience was completed, further information regarding the Institute was provided. Although calendar appointments for each Institute session were sent to all participants after they registered, researchers realized, based on feedback and attendance, participants also needed additional reminders about the dates and times for upcoming sessions. These reminders were provided by emailing participants approximately a week before each session.

Upon beginning the first session, participants completed the confidential pretest survey using Qualtrics. To complete the study in a timely manner, each survey adhered to a consistent timeline of sending the survey at the end of each session to promptly collect data. Facilitators built this time into each session. The posttest Qualtrics survey was administered as part of the final session of the institute. Formative assessment cycles occurred by including a Qualtrics

mini-survey at the conclusion of each Institute session, emphasizing the specific coaching skills covered in each individual session. All participants were expected to participate in the assessment survey collections, although not all participants completed each survey. Participants were reminded routinely that responses were confidential and only identifiable to the participant based on their unique identifier.

At the conclusion of the study, researchers shared data with the original design team, and a discussion was held regarding the effectiveness of the Instructional Coach Institute. Short-term outcomes were revisited to determine next steps for sustainability of the Institute. These short-term goals included the areas where participants self-reported a statistically significant level of efficacy in each of the targeted areas of the Institute regarding topics such as the ability to work with adult learners, promoting equitable classroom practices, understanding of various coaching models and ability to conduct challenging conversations. Long term goals included enhancement of the coach candidate pool. In addition, there is the long term potential to strengthen current classroom practice, resulting in increased performance among diverse learners in the classrooms of teachers who attended the Institute. Although long-term data were not collected in this research, this could be an area for future research and could then be used, in conjunction with the short-term data to yield additional discussion points and future action plans for the design team regarding the feasibility and effectiveness of offering the Instructional Coach Institute in the future.

The Impact of COVID-19

As researchers planned for the Instructional Coach Institute sessions began, schools across the nation suddenly were upended in the spring of 2020 due to the COVID-19 global pandemic. ARPS, like other systems in the state, were mandated to close, and teachers began

immediately providing remote instruction to students. Despite the increased challenges, all session presenters were still available and confirmed their willingness to provide Institute sessions in the fall of 2020. It was also during this time that the first “Save the Date” invitation was dispersed to district teachers. The researchers were concerned the sudden change to remote instruction and increased stress on teacher responsibilities would negatively impact the willingness of teachers to register for the Institute. Surprisingly, response to the first “Save the Date” invitation showed little to no negative impact on registration. In fact, the registration response exceeded expectations, was reflective of participants from all schools, and included such skilled educators that the administrator recommendations were ultimately not needed or solicited. However, other changes did require modifications to the format and modality of the study.

The initial plan was for each session of the Instructional Coach Institute to be conducted in person with current ARPS’ instructional coaches providing support for the main presenter. Due to indoor group size restrictions and social distancing requirements, the sessions moved to a fully online format instead. Participants logged into each session using Zoom, an online meeting platform. Presenters provided their session live using the online platform, utilizing as much participant interaction as possible within the modified format. The online delivery meant that opportunities to use current instructional coaches for more interactive session activities with participants were limited, and the current ICs ultimately supported only one session using pre-recorded role-plays and examples of their work.

To maintain consistency and simplicity for participants, researchers chose to utilize one online platform type for all sessions, using a pre-existing Zoom account belonging to one of the researchers. At the beginning of each session, one researcher opened the meeting link and the

other researcher logged into the session and explained that neither researcher would be online during the sessions to maintain participation confidentiality. In addition, participants were reminded the sessions were not recorded for this same reason. The administrative assistant for one researcher monitored each session in case of technical issues, and also took attendance to issue continuing education credits to participants. If the Institute is conducted virtually in the future, the ability to record sessions for participants will be an asset to accommodate various schedules and provide a documented resource for later review.

After the initial Institute announcements and registration information were sent to teachers, ARPS, in response to COVID-19, changed the school system calendar for 2020-2021 prior to the beginning of the school year. The researchers adjusted the dates and times of the final three sessions to accommodate the updated ARPS calendar. Again, all presenters were contacted. The calendar changes impacted two session dates, but presenters were available and willing to attend the alternative date. The alternative date moved an existing teacher workday, so impact on participants was minimal. After the school year and the Institute began ARPS also changed the student attendance schedule, moving from a fully remote learning environment to a combination of in-person and remote learning, which allowed kindergarten through second grade students to return for in-person learning five days a week, while all other grades alternated virtual and in-person learning throughout the week. Students in kindergarten through second grade could choose to stay remote, resulting in many teachers initially conducting a hybrid of in-person and virtual learning simultaneously. Before the conclusion of the Institute, third grade was also brought back to face-to-face instruction full time.

COVID-19 also had other resulting impacts on ongoing enrollment in the Institute. Eight teachers who began the professional development series ended their participation during the

course of the Institute due to increased instructional demands, changes to personal and professional schedules, and the need to supervise students during Institute presentation times based on changes to specific school schedules. Three participants requested flexibility to participate at other times, which could not be accommodated since the sessions were not recorded to maintain confidentiality. In general, ARPS teachers reported being overwhelmed and tired because of frequent schedule modifications, the change to virtual and hybrid learning, and revised job responsibilities. Participating in optional, personal interest professional development was not a priority many educators could focus on with a high degree of fidelity during this time.

Instructional Coach Institute Plan-Do-Study-Act Cycles and Data

Researchers conducted four complete Plan-Do-Study-Act cycles (Langley et al., 2009), each of which are detailed in this section. While COVID-19 required the researchers to make slight modifications to the original implementation plans, overall the Institute went ahead as initially designed. For each PDSA cycle, there is an explanation of the planning and implementation of each session in the cycle, a statistical analysis of the quantitative data collected, an analysis of qualitative data collected, and a description of how the data was used to determine adjustments to subsequent Institute sessions. The appropriate data tables and figures are included with each PDSA cycle.

PDSA Cycle 1

The first session of the Instructional Coach Institute, Overview of Coaching, occurred four weeks into the ARPS school year. The design team provided input regarding session content and suggested resources to share, which the presenter received prior to the session.

Plan. Researchers collaboratively planned with the facilitator of the first session, a current ARPS elementary principal who previously served as an instructional coach. The researchers provided the presenter with the goals for the session, which provided participants with an overview of the responsibilities of the instructional coach role and generally explored equitable classroom practices. The researchers also provided suggested resources for the facilitator to use, including *A Resource for Equitable Classroom Practices* (Montgomery County Public Schools, 2010) and the facilitator selected other resources such as the article "What Good Coaches Do" (Knight, 2011). This session was designed to align with two of the five framework elements identified by Bryk et al. (2010), specifically Leadership as a Driver for Change and Professional Capacity.

Do. The Overview of Coaching session began by having participants complete the Institute pretest (Appendix A). The facilitator's presentation included personal expertise and several activities for participants. An overview regarding responsibilities of an instructional coach from the perspectives of former and current coaches was provided. Basic equitable classroom practices were shared and discussed. This session included locally made videos of current ARPS coaches explaining the role of a coach and participating in role play scenarios an IC might typically encounter. Due to COVID-19 restrictions at the time, local ICs made these videos to share instead of participating in person as originally intended. Institute participants had opportunities to read and reflect on the Knight (2011) article. The final group activity was to watch and discuss Elena Aguilar's video "5 Pitfalls to Avoid as a New Coach" (2018). At the conclusion of the session, participants completed the post session mini-survey (Appendix B) for data collection purposes. This post session mini-survey consisted of one rank order question

about coaching tasks, one question regarding participants' level of agreement with equitable classroom practices, and open-ended questions.

Study. Table 1 shows the results of a nonparametric Friedman ANOVA test of differences for how participants ranked each coaching task before the Institute began and after the first session. The data analysis showed no significant change in participants' ranking of coaching tasks from the beginning of the Institute and immediately after the mini-session for each of the coaching tasks: lesson planning χ^2 (1, N = 16) = 0.40, p = .53; providing feedback χ^2 (1, N = 16) = 0.29, p = .59; reflecting on lessons χ^2 (1, N = 16) = 3.77, p = .05; modeling practices χ^2 (1, N = 16) = 2.27 , p = .13; conducting professional development χ^2 (1, N = 16) = 0.11, p = .06; and promoting equitable practices χ^2 (1, N = 16) = 3.60, p = .06.

Table 1

Descriptive Statistics and Friedman ANOVA Results Indicating Importance of Instructional Coaching Tasks After the Specific Institute Session

Task	Pre Test Mean Rank	Mini Session Mean Rank	N	Chi-Square*	df	p*	Asymp. Sig
Lesson Planning	1.44	1.56	16	0.40	1	.53	.53
Providing Feedback	1.56	1.44	16	0.29	1	.59	.59
Reflecting on Lessons	1.72	1.28	16	3.77	1	.05	.05
Modeling Practices	1.34	1.66	16	2.27	1	.13	.13
Conducting Professional Development	1.47	1.53	16	0.11	1	.74	.74
Promoting Equitable Practices	1.69	1.31	16	3.60	1	.06	.06

*p < .01

The additional questions in the pretest and mini-survey after this session allowed participants to indicate how much they agreed that each statement reflected an equitable classroom practice (Table 2).

Table 2

Descriptive Statistics and T-Test Results Indicating Agreement that Each Item is an Equitable Classroom Practice After the Specific Institute Session

Question	Pretest		Mini-survey		n	95% CI for Mean Difference	t	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Welcoming	4.63	0.50	5.00	0.00	19	-0.61, -0.13	-3.23	18	.005	1.05
Representation	4.84	0.37	4.95	0.23	19	-0.33, 0.16	-1.00	18	.331	0.35
Modeling	4.32	0.82	4.47	0.61	19	-0.65, 0.33	-0.68	18	.506	0.29
Language	4.72	0.57	4.89	0.32	19	-0.47, 0.14	-1.14	17	.269	0.36
Strategies	4.74	0.45	4.89	0.32	18	-0.45, 0.13	-1.14	18	.268	0.40
Wait Time	4.78	0.43	4.94	0.24	18	-0.42, 0.09	-1.37	17	.187	0.48

*$p < .05$

Data collected on the Institute pretest indicated participants somewhat to strongly agreed ($M = 4.63$, $SD = 0.50$) that welcoming students by name as they enter the classroom each day is an equitable classroom practice and after the session they strongly agreed ($M = 5.00$, $SD = 0.00$). The paired samples t-test showed the difference from the pretest to after the session was statistically significant $t(18) = -3.23$, $p = .005$. No other measures from this session showed a statistically significant difference in participants' agreement prior to the Institute compared to after this session. However, participants indicated agreement the practices provided were

equitable practices before the Institute demonstrating they already had a solid grounding in equitable classroom practices.

Double blind In Vivo coding of session one qualitative data yielded six descriptive second order themes as determined by researchers: relationships, partnerships, respect, feedback, listening, and equitable climate. Within the relationships theme, participants' responses about coaching reflected creating support and trust; the importance of personal interaction; honesty; and relationships are necessary between coaches, teachers, administrators, and students. Participants in this session clearly identified the value of relationships as an essential component of the work of instructional coaches. As one participant noted, "…nothing can be accomplished unless an understanding partnership and relationship has been established between teachers and coaches."

The partnership theme included participant responses that reflected building equality, teachers feeling valued, connections between the teachers and coaches, and promoting growth. Responses in the respect theme included statements about love, equality, welcoming environments, trust, teachers feeling heard, and open communication. Participants' responses aligned with the feedback theme included coaches providing specific feedback, how feedback improves practice and enriches instruction, prompts reflection, and collaboration. For the theme of listening, participants' answers included strengthening relationships, understanding each other, and respect for others' perspectives.

The final theme that researchers classified participants' responses for session one into was equitable climate and responses included statements about inclusive classroom culture and respect for and representation of varied backgrounds. The importance of an equitable classroom climate also emerged from the session content as a key theme, as one participant explained "…if

the classroom isn't full of love, respect and equality, nothing else matters." One participant made this connection by stating:

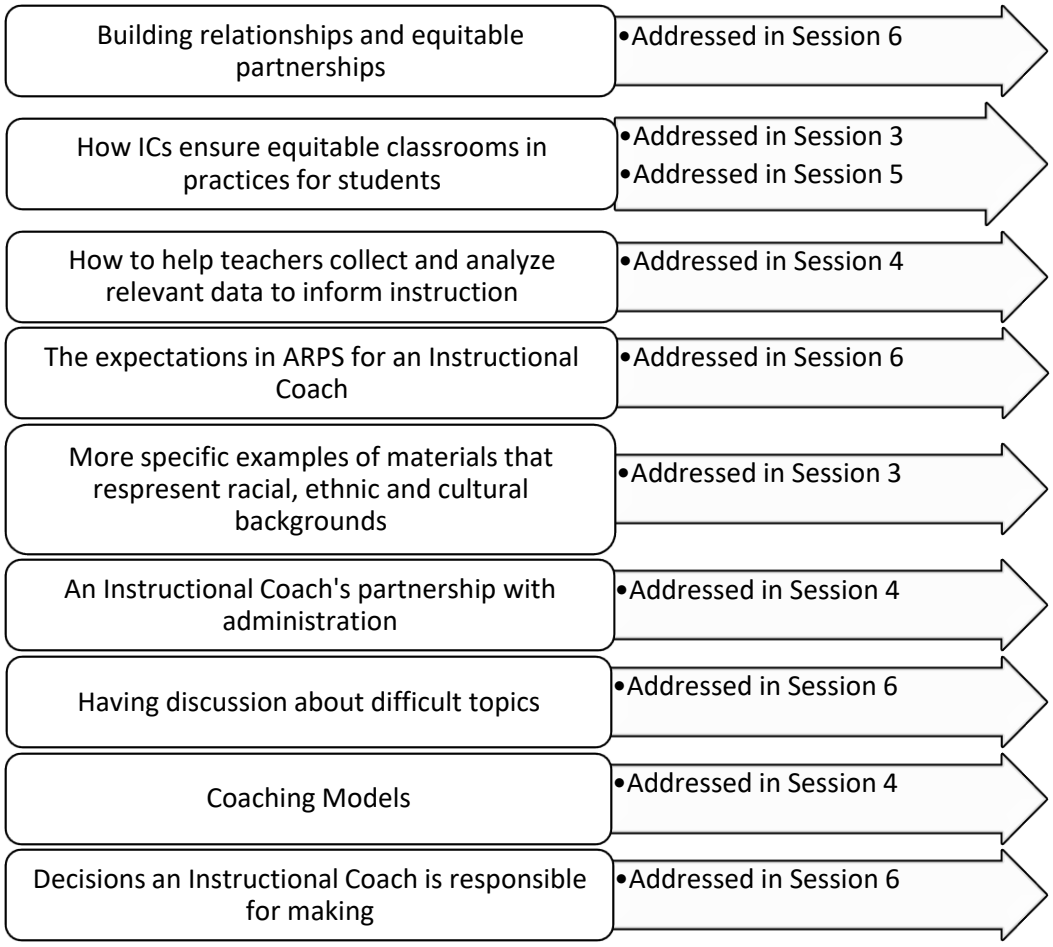
> I feel that if teachers plan well, there is rationale and reasoning behind their lessons, that they are prepared and know their subject matter, it will yield to great teaching. Giving specific feedback on what worked well and what did not is critical for improvement. Reflection is crucial.

The themes researchers identified based on participant responses from session one demonstrated alignment with Bryk et al.'s framework (2010) connected with Leadership as a Driver for Change and Professional Capacity as researchers expected. Participants' responses also aligned with Student Centered Learning and Ambitious Instruction, which was unexpected, but also important for school transformation.

Act. Based on the data collected and queries participants indicated they wanted to know more about, researchers aligned the questions with upcoming sessions. These questions were shared with the appropriate upcoming session facilitator to consider as they developed their content in collaboration with the researchers. Participant requests from session one regarding additional learning topics and how those requests were addressed by researchers can be found in Figure 18.

Figure 18

Participant Requested Topics Following Session One



PDSA Cycle 2

The second session of the Instructional Coach Institute, Navigating Andragogy, occurred one week after the first session.

Plan. Researchers' goal for session two was for participants to increase their knowledge related to working with adult learners, as andragogy is a key component of an IC's work and requires different nuances than when working with children. The facilitator was an expert on

professional development from the regional educational service alliance. Researchers shared relevant participant queries from session one with the facilitator for session two and provided feedback to the facilitator on the planned presentation prior to the session date. Researchers designed this session to align with two of the five framework elements identified by Bryk et al. (2010), specifically Leadership as a Driver for Change and Professional Capacity.

Do. The facilitator ensured this session was focused on the principles of andragogy. The facilitator also included information on how to work with resistant teachers and relevant social emotional learning practices for adults. Participants were provided time to reflect and ask questions throughout the session. They completed the mini-survey at the conclusion of the session (Appendix C).

Study. Participants rated their knowledge on principles of andragogy on the mini-survey for session two. Table 3 data showed that initially the participants indicated an average to slightly below average understanding of aspects of andragogy, including best practices when working with adults ($M = 3.13$, $SD = 0.83$).

Table 3

Descriptive Statistics and T-Test Results Indicating Level of Understanding of Andragogy After the Specific Institute Session

Question	Pretest		Mini-survey		n	95% CI for Mean Difference	t	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Best practices	3.13	0.83	3.73	0.59	15	-1.01, -0.19	-3.15	14	.007	0.83
Experiences	3.27	0.96	3.73	0.59	15	-1.09, 0.16	-1.61	14	.131	0.58
Resistance	2.87	1.13	3.53	0.74	15	-1.41, 0.08	-1.92	14	.076	0.70

*p < .05

The paired samples t-test revealed the difference between participants' understanding of aspects of andragogy prior to and immediately after the session was statistically significant only for an increased knowledge or understanding of best practices when working with adult learners, $t(14) = -3.15$, $p=.007$. This data showed participants gained knowledge about skills used when working with adult learners, which will be important to them as coaches. There was no statistically significant difference for understanding of effectively incorporating adults' background experience in classroom practice or for mitigating teacher resistance immediately following the session on andragogy.

Double blind In Vivo coding of session two qualitative data yielded two descriptive second order themes, relationships and resistance. Within the relationships theme, participants' responses about coaching reflected creating safe spaces, being curious rather than judgmental, valuing experiences, being respectful and knowledge of social emotional learning strategies.

Participants' responses that fell into the resistance theme included understanding fear of change, need to establish a clear purpose and relevance for learning, asking questions instead of judging, and building trust.

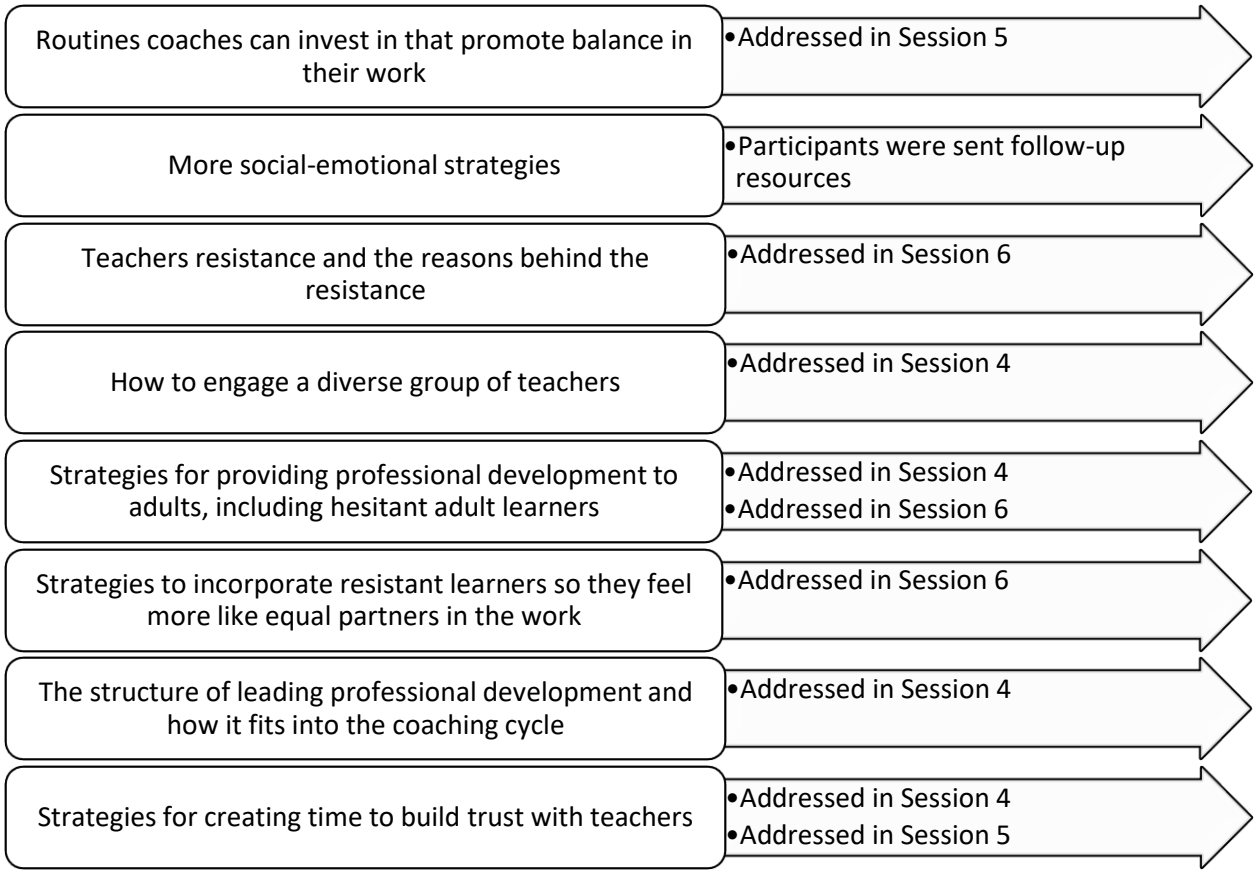
Again, the importance of relationships in the work of ICs was highly evident, as participants recognized in this session the value of relationships specific to working with adults. As one educator in the Institute explained, instructional coaches who spend the time to build and invest in relationships with adults create "a 'safe haven' for learning". In addition, participants were intrigued by and requested more information about teacher resistance. Most felt managing teacher resistance would be the most challenging element of working with adults. As a participant explained, "adults often have more deep-rooted biases/opinions that have developed over time, which can create even more difficulty when trying to teach and learn new concepts that may counter prior understanding." Two correlations from Bryk et al.'s framework (2010), Leadership as a Driver for Change and Professional Capacity, connected to the themes that were evident in participants' responses. The researchers expected this alignment in participants' learning.

Act. Researchers noted participants had many questions about working with resistant teachers and about social emotional practices for adults. The facilitator provided an additional resource, "SEL Three Signature Practices for Adults", from the Collaborative for Academic, Social, and Emotional Learning (CASEL, n.d.) which researchers emailed to participants after the session based on participant requests. Participants also had questions related to working with resistant teachers, which were shared with the facilitators for the final session of the Institute, as the topic aligned with the questions and could be addressed when participants learned about how

to conduct difficult conversations with others. These and other participant queries from session two, as well as how they were addressed by researchers, can be found in Figure 19.

Figure 19

Participant Requested Topics Following Session Two



PDSA Cycle 3

Plan. For session three, Equity in the Classroom, researchers collaborated with the ARPS English as a Second Language/Migrant Programs Director. The researchers shared with the facilitator that participants were very interested to learn more about equitable classroom practices based on their responses to session one. Researchers designed this session to align with three of the five framework supports identified by Bryk et al. (2010), specifically Leadership as a Driver

for Change, Student Centered Learning, and Ambitious Instruction. The specific goals for session three were for participants to delve deeper into classroom equity and allow participants to understand hidden bias and strategies for promoting equitable practices in the classroom and school.

Do. Session three occurred three weeks after session two. The first homework assignment had been provided to participants between sessions two and three. It focused on reading a short article from Elena Aguilar titled "Inside the Mind of This Coach: What Was I Thinking?!" (2015), and watching the connected video recording of Ms. Aguilar role playing a coaching moment, which included a text version of her coaching moves during the interaction. The activity followed up with reflective questions for the Institute participants, the purpose of which was to continue to reinforce skills learned in sessions one and two of the Institute.

For session three, researchers provided the *Equitable Classroom Practices Toolkit* (Maryland, 2010) as a suggested resource for the facilitator, who also utilized the Equitable Classroom Practices Observation Checklist (Louisiana State Personnel Development Grant, 2010) as key resources for the session. The facilitator focused on culturally responsive teaching and provided time for participants to reflect on their personal perspectives and experiences compared to those of their students. Participants completed the post session mini-survey (Appendix D) at the end of the session for data collection purposes.

Study. Data comparing the pretest to the mini-survey from the session (Table 4) was analyzed by the researchers to determine if the session goals were achieved. Data in Table 4 indicated if participants initially thought they might have observed hidden bias ($M = 2.71$, $SD = 0.73$) and after the Institute session they considered this question again as to whether or not they had observed hidden bias in schools ($M = 3.29$, $SD = 0.47$). The paired samples t-test revealed

the difference between the participants' observation of unintentional hidden bias before the Institute and after the session was statistically significant, t(13) = -2.60, p=.014, which indicated the session increased participants' understanding of unintentional hidden bias in the schools.

Table 4

Descriptive Statistics and T-Test Results Indicating Level of Understanding of Hidden Bias, Culturally Responsive Teaching, and Observation of Unintentional Hidden Bias and Knowledge of Culturally Proficient Practices After the Specific Institute Session

Question	Pretest		Mini-survey		N	95% CI for Mean Difference	T	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Hidden bias**	1.93	0.27	2.29	0.47	14	-0.72, 0.01	-2.11	13	.055	0.94
Cultural**	2.07	0.27	2.36	.050	14	-0.64, 0.07	-1.75	13	.104	0.72
Observe***	2.71	0.73	3.29	0.47	14	-1.00, -0.13	-2.60	13	.014	0.93
Assessing***	2.29	0.99	3.14	1.03	14	-1.57, -0.15	-2.60	13	.022	0.85
Valuing***	3.00	0.71	3.46	0.52	13	-0.99, 0.07	-1.90	12	.082	0.74
Managing***	2.23	0.83	3.15	0.80	13	-1.50, -.035	-3.49	12	.004	1.13
Adapting***	2.77	0.73	3.23	0.62	13	-0.99, 0.07	-1.90	12	.082	0.64
Institution***	2.07	0.62	2.42	0.51	14	-0.72, 0.01	-2.11	13	.055	0.63

*p < .05
**This question had 3 answer choices.
***This question had 4 answer choices.

Participants' knowledge of culturally proficient practices was also analyzed by assessing cultural knowledge before the Institute (M = 2.29, SD = 0.99) and immediately after the session (M = 3.14, SD = 1.03). For managing the dynamics of difference related to managing various

cultures in a classroom, participants' knowledge was limited before the Institute (M = 2.23, SD = 0.83) compared to immediately after the session (M = 3.15, SD = 0.80). The paired samples t-test showed a statistically significant difference for assessing cultural knowledge, $t(13) = -2.60$, $p = .022$) and for managing the dynamics of difference, $t(12) = -3.49$, $p = .004$). The other areas addressed showed no statistical difference in participants' understanding of the topic immediately after the session.

Using Double blind In Vivo coding of participants' responses to the session three mini-survey, the researchers identified two overarching second order themes described as awareness and intentionality. Awareness and intentionality were supported by several supporting categories that primarily revolved around the need for cultural understanding in the classroom, as well as realizing the influence a teacher has in the classroom. Participant responses that researchers coded as awareness included reflections on the impact of privilege and experiences, cultural awareness, cultural impact and understanding influence. Researchers coded participant responses regarding culturally responsive teaching as intentionality. In the mini-survey responses, one educator shared this realization:

> I feel like my eyes were really opened to the fact that our lives and our experiences really do shape the way we teach. As much as we believe we leave those experiences "at home" they totally shape our paradigm, and that's ok! We just need to be vigilant in our awareness of it!

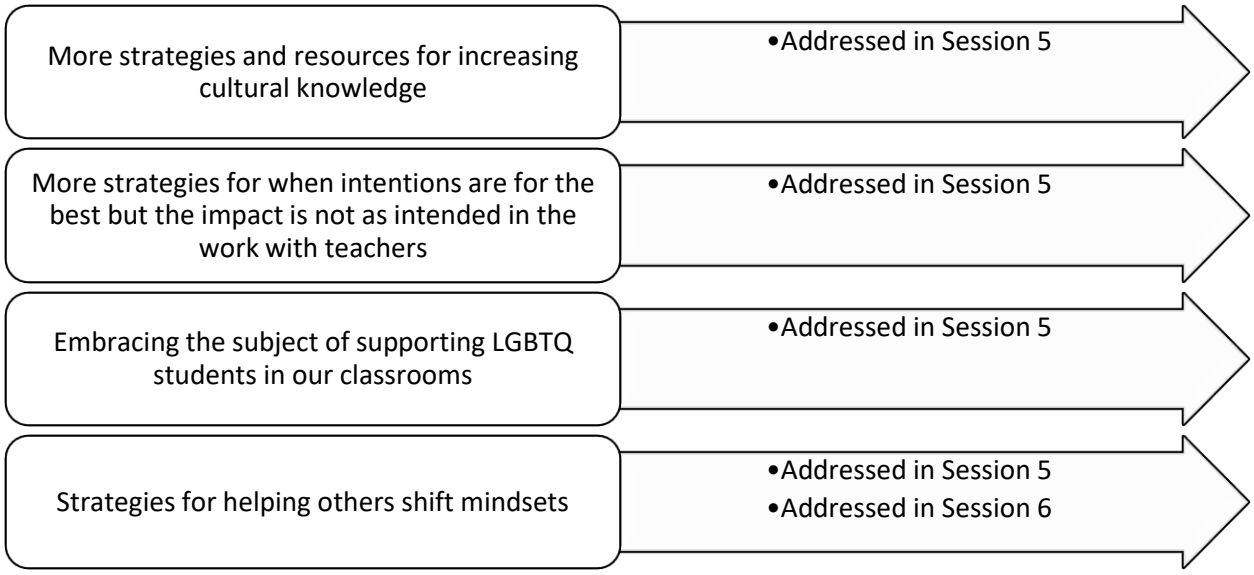
Initially, researchers planned for this session to align with Leadership as a Driver for Change, Student Centered Learning and Ambitious Instruction in Bryk et al.'s framework (2010), but participant responses also connected with the opportunity to build Professional Capacity, as an IC can support teachers in becoming aware of personal impact and making

intentional classroom decisions. This was confirmed by one participant who stated “I feel that I have a better understanding of cultural diversity and how to integrate culture into my classroom.” In addition, one participant expressed surprise at the presenter’s explanation of implicit bias, and asserted that the clarity allowed her to better understand the concept and realize the prevalence of implicit bias in our world today.

Act. While the quantitative data did not show a statistically significant difference in all areas, the areas of statistical significance and the qualitative responses indicated participants increased in their understanding of equitable classrooms and schools. Researchers shared the queries participants had following this session with the facilitators of sessions five and six based on the connections to the content of those presentations. The participant requests for additional information and how those were addressed can be found in Figure 20.

Figure 20

Participant Requested Topics Following Session Three



PDSA Cycle 4

PDSA cycle four consisted of both sessions four and five of the Institute. Data was collected independently from each session for analysis.

Plan. Sessions four, Coaching Models, and five, Encouraging Positive Classroom Practices, occurred consecutively on an optional teacher workday at the end of the first quarter of school. Researchers designed session four to align with Bryk et al.'s (2010) supports. Specifically, session four aligned with Leadership as a Driver for Change and Professional Capacity. The researchers and the facilitators collaboratively planned the content for the sessions, with the facilitators taking the planning lead once session goals for learning were shared. Researchers also provided feedback on the session content once facilitators had prepared their presentations.

Do. Session four, Coaching Models, was conducted by the chief academic officer of a state Center for the Advancement of Teaching. This facilitator was also a former educator and instructional coach in ARPS. This session focused on increasing participants' knowledge of coaching models, specifically directive, transformational and facilitative coaching, as well as the coaching cycle. Participants also learned about the concepts of coaching heavy and coaching light. Participants completed the post session mini-survey (Appendix E) for data collection purposes at the end of the session.

Study. Researchers anticipated participants would increase their knowledge about coaching models significantly because this topic was likely to be new learning for participants. Data from Session 4 detailing the pretest to the mini-survey are reflected in Table 5.

Table 5

Descriptive Statistics and T-Test Results Indicating Level of Understanding of Coaching Models After the Specific Institute Session

Question	Pretest		Mini-survey		n	95% CI for Mean Difference	T	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Directive	1.80	1.42	3.27	0.59	15	-2.42, -0.51	-3.30	14	.005	1.34
Facilitative	2.07	1.43	3.27	0.59	15	-2.09, -0.31	-2.89	14	.012	1.09
Transform	1.87	1.51	3.13	0.52	15	-2.24, -0.30	-2.80	14	.014	1.13
Cycle	1.47	1.30	3.20	0.77	15	-2.56, -0.91	-4.52	14	.000	1.62
Heavy/ Light	1.47	1.36	2.67	1.11	15	-1.96, -.044	-3.38	14	.004	0.97

*$p < .05$

Data showed that prior to beginning the Institute, participants mostly rated themselves as having little to no knowledge of topics regarding the instructional coaching models. Before the Institute, participants rated their understanding of directive coaching (M = 1.80, SD 1.42), facilitative coaching (M = 2.07, SD = 1.43), transformational coaching (M = 1.87, SD = 1.51), the coaching cycle (M = 1.47, SD = 1.30), and coaching heavy and coaching light (M = 1.47, SD = 1.36). The paired samples t-test revealed the difference between the participants' understanding of each topic of instructional coaching before the session and immediately after this session increased. Data were statistically significant for directive coaching, t(14) = -3.30, p = .005), facilitative coaching, t(14) = -2.89, p = .012), transformational coaching, t(14) = -2.80, p = .014), the coaching cycle t(14) = -4.52, p = .000) and coaching heavy and coaching light, t(14) =

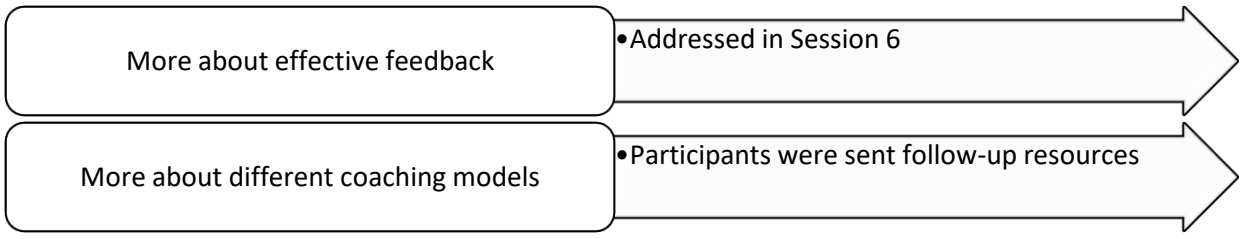
-3.38, p = .004). The data clearly indicate that participants' learned about coaching models and the coaching cycle and this session achieved its goals.

Double blind In Vivo coding of the qualitative data from session four, Coaching Models, resulted in one overarching theme, which the researchers classified as protocols for coaching. Based on participant open-ended responses this theme can effectively be explained as the necessary protocols for effective instructional coaching and their responses reflected coaching models, coaching cycles, and feedback practices. The clarity of this session was summarized by one participant who stated that "different models/approaches can be utilized depending on the teachers' levels of need." As expected based on the session design, examples of Leadership as a Driver for Change and Professional Capacity from Bryk et al.'s framework (2010) were identified in participants' responses.

Act. Session four resulted in statistically significant t-test results for all survey items. This session provided meaningful learning for participants regarding the specifics of coaching protocols and the power of coaching models. Still, some participants had continued questions, which were applicable for session six and shared with that facilitator. The follow-up items and how researchers addressed these participant requests are shown in Figure 21.

Figure 21

Participant Requested Topics Following Session Four



Plan. Session five, Encouraging Positive Classroom Practices, occurred immediately after session four on an optional teacher workday at the end of the first quarter of school. Again, the session was planned collaboratively between the researchers and the facilitators, with researchers offering feedback on the presentation and ensuring alignment of Institute objectives before it was presented. Researchers designed session five to align with three of Bryk et al.'s (2010) supports, specifically Professional Capacity, Student Centered Learning, and Ambitious Instruction.

Do. A professor from a university in the ARPS region led session five, which focused on the impact of asset versus deficit-based ideologies in classrooms and schools. The presenter helped participants identify deficit-based aspects currently in education and in the ARPS district, how they can shift to an asset-based focus as instructional coaches and in their own classrooms. Participants completed the post session survey (Appendix F) for data collection purposes at the conclusion of the session.

Study. Table 6 data reflected participants' understanding of asset and deficit-based ideology before and after session five. The data indicated on the pretest that Institute participants had very little knowledge or understanding of asset-based ideology ($M = 2.17$, $SD = 0.72$) and deficit-based ideology ($M = 2.17$, $SD = 0.72$). The paired samples t-test revealed the difference between the participants understanding of asset-based ideology before the Institute and after the session was statistically significant, $t(11) = -5.63$, $p = .000$) and was also statistically significant before the Institute and after this session for understanding of deficit-based ideology, $t(11) = -5.63$, $p = .000$). This session achieved the goal of increasing participants' understanding of these ideologies in order to address them as instructional coaches.

Table 6

Descriptive Statistics and T-Test Results Indicating Level of Understanding for Asset and Deficit-Based Ideologies After the Specific Institute Session

	Pretest		Mini-survey			95% CI for Mean Difference				
Question	M	SD	M	SD	n		t	df	Sig. (2 tailed)*	Cohen's d
Asset **	2.17	0.72	3.33	0.49	12	-1.62, -0.71	-5.63	11	.000	1.90
Deficit**	2.17	0.72	3.33	0.65	12	-1.62, -0.71	-5.63	11	.000	1.70

*p < .05
**This question had 4 answer choices.

Researchers coded participants' responses to open ended questions using Double Blind In Vivo coding for session five. Researchers identified three second order themes in participants' responses designated as Expectations, Assumptions and Behaviors. The supporting categories around asset-based thinking practices focused on the support an instructional coach provides to teachers in establishing and supporting these practices. Responses coded in the expectations theme reflected growth mindset and asset-based thinking. Responses coded as assumptions included recognizing stereotypes, awareness of assumptions, and willingness to challenge and change. Response coded in the behaviors theme indicated participants' actions including intentionality of positive practices and shifting paradigms.

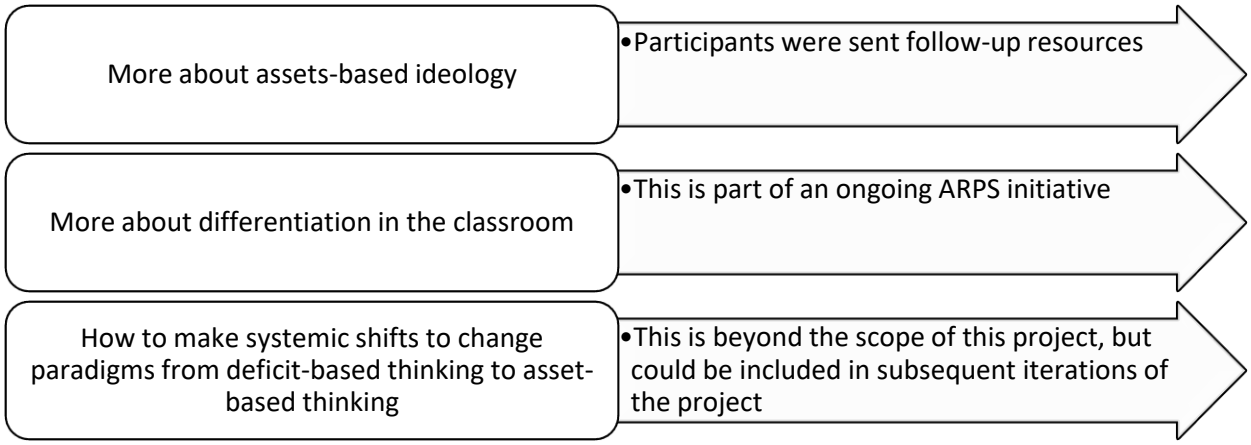
Many participants noted personal surprise at recognizing the systemic presence of deficit-based ideology, as well as the prevalence of stereotypical thinking. One participant commented that "as educators we must be self-aware of the assumptions that we bring with us to the profession." Several participants also expressed the benefit of recognizing the value of applying

asset-based ideology to the family and background of a student, not only the student, as a strategy in building and strengthening family and school communication and supports for students.

Act. The analyzed data and questions from session five that would be applicable for the final session were shared with the facilitator for the last session of the Institute. The participant requests and how they were addressed are found in Figure 22.

Figure 22

Participant Requested Topics Following Session Five



Final Session. Session six, Managing Challenging Conversations, was not part of a PDSA cycle because the researchers would not be able to act upon this data, other than to inform future Instructional Coach Institutes. The researchers planned this session in collaboration with the ARPS Assistant Superintendent for Curriculum and Instruction with the goal to address how to conduct difficult or challenging conversations with others. The final session occurred two and a half weeks after sessions four and five, and followed the second homework assignment. The second homework assignment prompted participants to view the video by act.tv entitled

"Systemic Racism Explained" (2019) and reflect on video content. The purpose was to reinforce learning from the previous sessions, and consider the connections between the sessions regarding the vital need for equitable practices.

For session six, the facilitator focused on techniques participants can use as an instructional coach when a difficult conversation is needed. The data collected from participants included questions in the posttest of the Institute (Appendix G) for this session and are depicted in Table 7. Data showed no statistical difference from pretest responses compared to mini-survey responses after the session regarding participants' ability to provide feedback and conduct difficult conversations with teachers.

Table 7

Descriptive Statistics and T-Test Results Indicating Preparedness to Provide Feedback and Have a Difficult Conversation After the Specific Institute Session

	Pretest		Mini-survey			95% CI for Mean Difference				
Question	M	SD	M	SD	N		t	df	Sig. (2 tailed)*	Cohen's d
Feedback	4.07	0.59	4.47	0.52	15	-0.95, 0.15	-1.57	14	.138	0.72
Conversation**	2.87	0.74	3.40	0.51	15	-1.12, 0.05	-1.95	14	.072	0.84

*p < .05
**This question had 4 answer choices.

Double Blind In Vivo coding of participants' responses on the session six mini-survey identified two themes in participant responses explained as relationships and encouraging growth. Responses coded in the relationship theme reflected the importance of establishing honesty, developing trust, and developing understanding as an instructional coach. Participants

reiterated the importance of relationships in the work of instructional coaches, as well as utilizing the work of ICs to encourage teacher professional growth. Responses coded as encourage growth included participants' responses about feedback and asking questions instead of judging. Participants expressed surprise at the level of honesty needed when having difficult conversations and the benefits it could have on the coach-teacher relationship.

One participant shared appreciation for learning that approaching someone in the most effective way "can make a huge impact not only on the relationship but also make feedback be accepted with a positive attitude and motivate change." Several educators also referenced the session facilitator's suggestion to begin difficult discussions with a question instead of approaching the conversation with judgement. Participants found this approach beneficial in supporting the relationship between the instructional coach and teachers. As anticipated, participant responses aligned to Bryk et al.'s framework (2010) components Leadership as a Driver for Change and Professional Capacity.

The results of all the mini-surveys showed statistically significant growth in 12 out of 32 survey items or 38%. While this initial growth after each session is important, researchers also measured participant growth upon completion of the entire Institute to determine the long term impact and those results are summarized next.

Summative Evaluation Results and Analysis for the Instructional Coach Institute

This section examines data collected from Instructional Coach Institute participants who attended all six sessions of the Institute. This section details the quantitative data from the participants' pretest and posttest results to determine if the Institute content was retained and demonstrated an impact on participants' understanding of instructional coaching. Summative evaluation results from the data collected and the researchers' analysis are shared throughout this

section. Comparisons to relevant formative data within the PDSA cycles are included to complete the data analysis process.

The quantitative data analysis compared participants' responses from the pretest (Appendix A) to the posttest (Appendix G) to determine if there was a statistically significant change for each individual question. All questions from the pretest were replicated for the posttest. In addition, the posttest included open-ended questions for session six since this survey served as the session six mini-survey as well as the posttest for the Institute. The open-ended questions were only analyzed to inform researchers about the effectiveness of session six and to provide additional insight into participants' understanding, but not as part of the summative analysis. Researchers completed a detailed statistical analysis for each question.

Table 8, specific to session one, Overview of Coaching, shows the results of a nonparametric Friedman ANOVA test of differences in how participants ranked each coaching task before the Institute began and at the conclusion of the Institute. The data analysis showed no significant change in participants' ranking of coaching tasks from the beginning to the end of the Institute: lesson planning χ^2 (1, N = 13) = 1.60, p = .21; providing feedback χ^2 (1, N = 13) = 0.33, p = .21; reflecting on lessons χ^2 (1, N = 13) = 2.27, p = .13; modeling practices χ^2 (1, N = 13) =1.33 , p = .25; conducting professional development χ^2 (1, N = 13) = 2.78, p = .10; and promoting equitable practices χ^2 (1, N = 13) = 2.27, p = .19.

Table 8

Descriptive Statistics and Friedman ANOVA Results Indicating Importance of Instructional Coaching Tasks Upon Completion of the Institute

Task	Pre Test Mean Rank	Post Test Mean Rank	n	Chi-Square	df	*p**	Asymp. Sig
Lesson Planning	1.65	1.35	13	1.60	1	.21	.21
Providing Feedback	1.58	1.42	13	0.33	1	.21	.56
Reflecting on Lessons	1.69	1.31	13	2.27	1	.13	.13
Modeling Practices	1.35	1.65	13	1.33	1	.25	.25
Conducting Professional Development	1.31	1.69	13	2.78	1	.10	.10
Promoting Equitable Practices	1.69	1.31	13	2.27	1	.19	.13

*p < .01

Table 9 data, also representing session one, indicated that before the Institute participants reported a high level of agreement about each item representing an equitable classroom practice and there were no statistically significant differences related to agreement about whether each item was an equitable classroom practices from beginning to end of the Institute. Before the Institute, participants generally agreed or strongly agreed that each practice was considered an equitable practice and participation in the Institute may have served to confirm this knowledge for them.

Table 9

Descriptive Statistics and T-Test Results Indicating Agreement that Each Item is an Equitable Classroom Practice Upon Completion of the Institute

Question	Pretest		Posttest		n	95% CI for Mean Difference	T	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Welcoming	4.87	0.35	4.73	1.03	15	-0.49, 0.76	0.46	14	.653	.17
Representation	4.93	0.26	4.73	1.03	15	-0.40, 0.80	0.72	14	.486	.77
Modeling	4.47	0.64	4.47	1.06	15	-0.78, 0.78	0.00	14	1.000	0
Language	4.60	0.63	4.60	1.06	15	-0.73, 0.73	0.00	14	1.000	0
Strategies	4.67	0.62	4.53	1.06	15	-0.62, 0.88	0.71	14	.709	-0.15
Wait Time	4.67	0.49	4.60	1.06	15	-0.64, 0.78	0.84	14	.843	-0.08

*$p < .05$

These pretest and posttest results did not bear long-term retention of this learning as statistically significant, though the mini-survey from session one had shown one area, welcoming rituals, of statistically significant learning for participants. Analysis of the mini-survey related to session one results revealed participants' immediate new or reinforced learning, but researchers felt it prudent to consider both the quantitative and qualitative results to depict participants' understanding. The data reinforced themes borne from participants' qualitative responses such as the value of relationships and listening, nurturing respect, and building equitable classroom climates. Relationships included those existing between teachers and students, as well as the value of a partnership between instructional coaches and teachers.

Also included in session one was a survey item in which participants ranked by perceived importance various tasks of an instructional coach. The measures of the ranked items from the

pretest to the mini-survey were not statistically significant as measured by an ANOVA, though it was interesting that the rank order of the items were almost completely reversed from pretest to mini-survey. For example, modeling practices was initially rated as a task of high importance on the pretest, but was considered a task of lower importance after the completion of session one. In contrast, reflecting on lessons was initially rated a low importance task, but at the conclusion of session one, the rank mean was that of a task of high importance. These results were mirrored for this item from pretest to posttest. The researchers concluded that while this survey task yielded no statistically significant measurement results on the ANOVA, the pattern of similar reversals from pretest to mini-survey and pretest to posttest demonstrated a change in thinking for participants regarding the work of instructional coaches. While the results did not indicate significant learning that held from the beginning to the end of the Institute, the participants' responses to the qualitative questions reflected that the session content did serve to pique the interest of participants for upcoming topics of learning.

Table 10 data, focusing on content from session two, Navigating Andragogy, showed that before the Institute, participants indicated an average to slightly below average understanding of aspects of andragogy including best practices ($M = 3.20$, $SD = 0.86$) and recognizing and mitigating teacher resistance to new learning ($M = 2.93$, $SD = 1.03$). The paired samples t-test revealed the participants' understanding of aspects of andragogy increased from the beginning of the Institute to the end and was statistically significant for an increased understanding of best practices, $t(14) = -2.20$, $p=.045$, and for mitigating teacher resistance, $t(14) = -1.91$, $p = .03$). There was no statistically significant difference for understanding of effectively incorporating adults' background experience in classroom practice. Researchers met the Institute goals to

increase understanding of best practices for andragogy and to increase understanding of how to address resistant teachers.

Table 10

Descriptive Statistics and T-Test Results Indicating Level of Understanding of Andragogy Upon Completion of the Institute

Question	Pretest		Posttest		n	95% CI for Mean Difference	t	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Best practices	3.20	0.86	3.87	0.64	15	-1.32, -0.02	-2.20	14	.045	.09
Experiences	3.33	0.64	4.07	0.98	15	-1.56, 0.09	-1.91	14	.08	.86
Resistance	2.93	1.03	3.87	0.74	15	-1.78, -0.08	-2.36	14	.03	1.03

*p < .05

Session two, Navigating Andragogy, provided mini-survey results from the session that yielded statistically significant outcomes from the concept of incorporating best practices when working with adults. This was mirrored in the pretest and posttest results, in addition to statistically significant results for mitigating teacher resistance, indicating long term retention of the new learning even at the conclusion of the Institute. Qualitative results from the session two mini-survey elicited two clear themes, which connected to the quantitative results, from participants around the value of building relationships and mitigating teacher resistance, both of which align with the best practices of andragogy. In this session, the relationship referenced the work between ICs and teachers. These results around working with adults, have the potential to improve the work the Institute's participating educators are engaged in with their current ICs, the

colleagues in their school with which they work closely at this time, and in the long run if they move into the coaching role.

Table 11 represents the data related to content from session four, Coaching Models. Participants mostly rated themselves as having very little knowledge of topics regarding the instructional coaching models on the pretest. The highest pre-institute rating was for directive coaching (M = 2.33, SD 1.18) and the next highest understanding was for facilitative coaching (M = 2.20, SD = 0.94). Before the Institute participants generally had very little knowledge or understanding of transformational coaching (M = 2.07, SD = 1.03), the coaching cycle (M = 2.07, SD = 1.03), and coaching heavy and coaching light (M = 2.07, SD = 1.03). The paired samples t-test revealed the difference between the participants understanding of each topic of instructional coaching before and after the Institute was statistically significant for directive coaching, $t(14) = -3.62$, $p = .003$), facilitative coaching, $t(14) = -4.56$, $p = .000$), transformational coaching, $t(14) = -4.80$, $p = .000$), the coaching cycle $t(14) = -4.80$, $p = .000$) and coaching heavy and coaching light, $t(14) = -4.41$, $p = .001$). The Institute succeeded in statistically improving participants' knowledge of instructional coaching methods and the coaching cycle, which are important to successful coaching.

Table 11

Descriptive Statistics and T-Test Results Indicating Level of Understanding of Coaching Models Upon Completion of the Institute

Question	Pretest		Posttest		n	95% CI for Mean Difference	t	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Directive	2.33	1.18	3.73	0.70	15	-2.23, -0.57	-3.61	14	.003	1.44
Facilitative	2.20	0.94	3.73	0.70	15	-2.25, -0.81	-4.56	14	.000	1.63
Transform	2.07	1.03	3.73	0.70	15	-2.41, -0.92	-4.80	14	.000	1.89
Cycle	2.07	1.03	3.73	0.70	15	-2.41, -0.92	-4.80	14	.000	1.89
Heavy/Light	2.07	1.03	3.67	0.82	15	-2.38, -0.82	-4.41	14	.001	1.72

*$p < .05$

Session four resulted in the most new learning for participants based on the statistically significant results analyzed. This proved to be the only session in which the same key concepts that were statistically significant in the pretest to mini-survey results were also statistically significant for participants in the pretest to posttest survey outcomes. Specifically, this was seen in three of the coaching types (directive, facilitative and transformational), presented in the session, as well as the concept of coaching cycles and the practice of coaching heavy and coaching light. When analyzing the qualitative data, the overarching theme that evolved was described as protocols for coaching These protocols included the coaching models, as well as coaching cycles and the feedback practices of an IC. Participants appreciated the insight into this language specific to instructional coaches, and based on qualitative data, initially believed this was the core of the coaching role.

The data in Table 12, representing session five, Encouraging Positive Classroom Practices, indicates that Institute participants reported they had very little knowledge regarding understanding of asset-based ideology (M = 2.00, SD = 0.65) and deficit-based ideology (M = 2.07, SD = 0.62) on the pretest. The paired samples t-test revealed the difference between the participants' understanding of asset-based ideology before and after the Institute showed a statistically significant increase, t(14) = -6.54, p = .000) and participants' knowledge of deficit-based ideology also increased a statistically significant amount from before to after the Institute, t(13) = -5.67, p = .000). This statistical significance demonstrated participants increased their knowledge of these concepts, which has the potential to inform their current classroom practices as well as how they may coach others in the future.

Table 12

Descriptive Statistics and T-Test Results Indicating Level of Understanding for Asset and Deficit-Based Ideologies Upon Completion of the Institute

Question	Pretest		Posttest		n	95% CI for Mean Difference	T	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Asset **	2.00	0.65	3.40	0.51	15	-1.86, -0.94	-6.54	14	.000	2.39
Deficit**	2.07	0.62	3.29	0.61	14	-1.68, -0.75	-5.67	13	.000	1.98

*p < .05
**This question had 4 answer choices.

The Encouraging Positive Classroom Practices session was couched in asset versus deficit-based practices, and resulted in no statistically significant quantitative outcomes related to

the key concepts of the session when analyzing the mini-survey results. However, the Institute posttest outcomes yielded statistically significant results around participant understanding of asset-based thinking and deficit-based thinking. It can be inferred the long-term retention of the concepts was aided from understanding demonstrated in participant qualitative responses. The responses elicited several themes around the concepts of expectations (growth mindset and asset-based thinking), assumptions (recognizing and challenging stereotypes and assumptions), and behaviors (intentional positive practices and shifting of paradigms), which resonated with participants. The qualitative participant responses shared that these concepts were unfamiliar for many prior to the Institute, and researchers were pleased to see that not only did participants develop an understanding of them, but retained them throughout the Institute.

Table 13 data from session three, Equity in the Classroom, shows that initially participants indicated they had some understanding of hidden bias (M = 2.07, SD 0.26) and culturally responsive teaching (M = 2.07, SD = 0.26). The paired samples t-test revealed the difference between the participants' understanding of hidden bias from before to after the Institute was statistically significant, $t(14) = -4.58$, $p=.000$, and there was also a statistically significant difference for participants' understanding of culturally responsive teaching, $t(14) = -1.17$, $p = .001$). There was no statistical significance in participants' observation of unintentional hidden bias from beginning to end of the Institute. This increased knowledge may impact how the participants approach their classroom as well as their future interactions with educators to address equitable practices if they become instructional coaches.

Table 13

Descriptive Statistics and T-Test Results Indicating Level of Understanding of Hidden Bias, Culturally Responsive Teaching, and Observation of Unintentional Hidden Bias and Knowledge of Culturally Proficient Practices Upon Completion of the Institute

Question	Pretest		Posttest		n	95% CI for Mean Difference	T	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Hidden bias**	2.07	0.26	2.67	0.49	15	-0.88, -0.32	-4.58	14	.000	1.54
Cultural**	2.07	0.26	2.60	0.51	15	-0.82, -0.25	-4.00	14	.001	0.96
Observation***	2.87	0.74	3.13	0.52	15	-0.76, 0.22	-1.17	14	.262	0.42

*p < .05
**This question had 3 answer choices.
***This question had 4 answer choices.

Table 14 data, also from session three, shows participants rated their understanding of culturally proficient practices including assessing cultural knowledge (M = 2.27, SD = 0.88), valuing diversity (M = 3.13, SD = 0.74), managing the dynamics of difference (M = 2.36, SD = 0.84), adapting to diversity (M = 2.80, SD = 0.68), and institutionalizing cultural knowledge (M = 2.07, SD = 0.59). The paired samples t-test revealed a statistically significance difference between the participants understanding of aspects of culturally proficient practices before and after the Institute for all concepts included in this component of the Institute: assessing cultural knowledge, t(14) = -5.14, p = .000; valuing diversity, t(14) = -2.48, p = .027; managing the dynamics of difference, t(13) = -3.61, p = .003; adapting to diversity, t(14) = -3.16, p = .007; and institutionalizing cultural knowledge, t(14) = -5.87, p = .000. Again, Institute participants' data indicate they have increased their knowledge of culturally responsive practices, which may help

participants promote their own equitable classrooms more effectively in the future and support others in doing the same.

Table 14

Descriptive Statistics and T-Test Results Indicating Knowledge of Culturally Proficient Practices Upon Completion of the Institute

Question	Pretest		Posttest		n	95% CI for Mean Difference	T	df	Sig. (2 tailed)*	Cohen's d
	M	SD	M	SD						
Assessing**	2.27	0.88	3.20	0.41	15	-1.32, -0.54	-5.14	14	.000	1.35
Valuing**	3.13	0.74	3.67	0.49	15	-1.00, -0.07	-2.48	14	.027	0.85
Managing**	2.36	0.84	3.36	0.50	14	-1.60, -0.40	-3.61	13	.003	1.45
Adapting**	2.80	0.68	3.47	0.52	15	-1.12, -0.21	-3.16	14	.007	1.11
Institution**	2.07	0.59	3.13	0.52	15	-1.46, -0.68	-5.87	14	.000	1.92

*p < .05
**This question had 4 answer choices.

In the session mini-survey for session three, Equity in the Classroom, significant results from participants were found in the concepts of being aware of having observed unintentional hidden bias, assessing cultural knowledge, and managing the dynamics of different cultures in the classroom. The pretest to posttest results extended the mini-survey learning, demonstrating statistically significant results in the same areas from the earlier learning named as understanding the concept of hidden bias, assessing cultural knowledge and managing the dynamics of different cultures in the classroom. In addition, culturally responsive teaching, valuing diversity, adapting to diversity, and institutionalizing cultural knowledge all had lasting results for participants through the final session to the posttest survey.

The accompanying identified qualitative themes were based around the importance of awareness of hidden bias and the value of intentionality when making culturally responsive decisions in the classroom. Participants expressed understanding of the influence, and sometimes privilege, they, as teachers possess based on their role in the classroom. Researchers believe that these results can be carried into classroom settings and improve the work teachers do with students, but will also provide these prospective coaches with tools to support teachers should they become coaches.

Data in Table 15, specific to session six, Managing Challenging Conversations, indicated no statistically significant difference in participants' level of preparedness to offer feedback or have a difficult conversation with a teacher from before to after the Institute. Although there was no statistically significant change in this data, the content is still essential for an IC to understand.

Table 15

Descriptive Statistics and T-Test Results Indicating Preparedness to Provide Feedback and Have a Difficult Conversation Upon Completion of the Institute

Question	Pretest		Posttest		n	95% CI for Mean Difference	T	df	Sig. (2 tailed) *	Cohen's d
	M	SD	M	SD						
Feedback	3.67	0.90	4.27	0.80	15	-1.35, 0.15	-1.72	14	.108	0.71
Conversation**	2.93	0.70	3.40	0.51	15	-1.05, 0.12	-1.71	14	.110	0.76

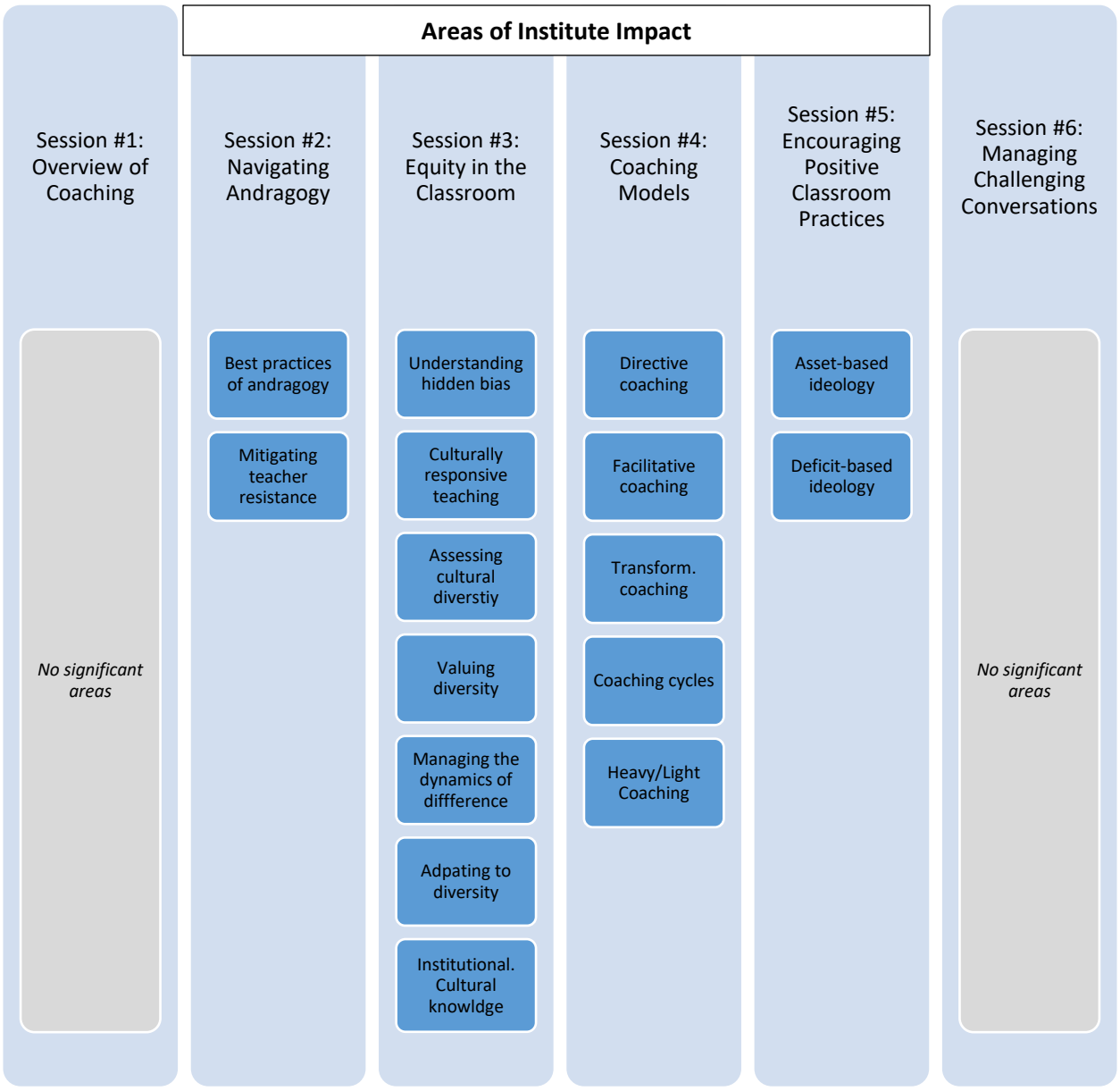
*p < .05
**This question had 4 answer choices.

Though this final session in the Institute, Managing Challenging Conversations, yielded no statistically significant quantitative outcomes in either the mini-surveys or the pretest and posttest results, the qualitative data indicated this session resonated with participants. Themes from In Vivo coding demonstrated a revisited focus on the teacher and instructional coach relationship, which proved to be a recurring theme throughout the Institute, as well as a realization for participants that the purpose of the instructional coaching role was to encourage teacher growth. Though the quantitative data analyzed provided no significant data for this session, the researchers found it notable that this session was referenced as a favorite session by several participants. Though not defined by participants, it can be interpreted through short answer responses that the appreciation of the session could be narrowed into reasons that included the interest in the topic of difficult discussions, the supporting session content addressing questions requested by participants, or the respect expressed for the session facilitator. Regardless of the reason, this session was a valuable component of the Institute for participants, even though there were no statistically significant results.

Overall, participants responded to 32 items on the pretest and posttest. Data demonstrated a statistically significant improvement in participant's knowledge on 16 of the items or 50% of the survey items for the entire Institute (see Figure 23). While there is room for improvement in the sessions when the Institute is conducted again by adjusting the content in the less effective sessions, data shows the Institute increased participants' understanding with regards to the role of instructional coaching and equitable classroom practices, meeting the researchers' short term goals.

Figure 23

Summative data showing areas of statistical significance from the IC Institute pretest to posttest



Final Thoughts on the Instructional Coach Institute Data

Analyzing the results of the full Institute pretest and posttest and the mini-survey data was informative, but the complete picture of the impact of the Instructional Coach Institute

became evident when the data were combined with participants' qualitative responses for additional analysis. Though this improvement initiative supported the future instructional coaching program in ARPS, a secondary benefit was assisting educators in understanding the ways in which working with coaches benefit classroom work. In addition, developing and implementing the coaching institute increases potential coaches' capacity to know and understand the coaching role and equitable learning opportunities, andragogy, coaching models and addressing challenging conversations. These skills have the potential to help aspiring coaches build the capacity of teachers to meet the diverse needs of students, simply by increasing awareness.

The need for this Instructional Coach Institute is evidenced by the lack of a cost effective, easily accessible preparatory instructional coach training opportunity that strengthens the ability of coaches to support teachers, ultimately benefiting students. "Research, policy, and practice that explores the active ingredients of instructional coaching and the development of rigorous coaching models can help close achievement gaps, and ensure that all children reach their social-emotional, behavioral, and academic potential" (Connor, 2017, p. 82). In essence, a strong instructional coaching program can facilitate teacher growth and ultimately student performance.

How the Theory of Improvement Aligned with the Outcomes

The researchers' theory of improvement sought to develop and implement an Instructional Coach Institute for prospective instructional coaches, focusing on the coaching role, equitable learning opportunities, andragogy, coaching models and addressing challenging conversations in an effort to effectively increase the aptitude of potential coaches and build the capacity of teachers as they work to meet the diverse needs of students and increase student achievement. Though not all topics of learning provided within the Institute resulted in

statistically significant learning, the mini-survey quantitative measures elicited 12 out of 32 survey items, or 38 %, that were statistically significant within the Institute. From the beginning of the Institute to the end of the Institute, 16 out of 32 survey items, or 50%, had a statistically significant difference, as well as qualitative measures which produced clear themes derived from the Institute learning topics. These measures led the researchers to suppose that the recurring themes, revisited over several Institute sessions, produced cumulative learning outcomes for participants, and would be beneficial for future iterations of the Institute.

Data collected from the Instructional Coach Institute was categorized into both short term impacts and long term retention of concepts and skills. The mini-surveys following each session provided participants with an immediate opportunity to share new or reinforced learning, as well as providing a formative evaluation methodology throughout the duration of the Institute. The pretest and posttest design provided an opportunity for summative evaluation and is indicative of lasting learning as measured at the completion of the Institute. Each PDSA cycle allowed researchers to continue to enhance each upcoming session based on participant feedback and collaboration with the design team and facilitators. Researchers deduced that using participants' questions and feedback as part of the PDSA cycles to enhance and guide content of subsequent Institute sessions likely led to the long term outcomes showing more growth than the short term outcomes.

Throughout the Institute, additional anecdotal notes were maintained by the researchers. These notes consisted of observations from implementation of the Institute, as well as notes from comments shared informally from participants, from participants' administrators and from participants' current instructional coaches. These notes provided insight into the impact beyond the sessions themselves and in the greater school community.

The origin of Institute planning included both short term and long term goals. In the short term, Institute participants, upon completing the sessions, would show understanding of the session topics and how they would benefit the coaching role. An additional opportunity would be that the gained knowledge increased the capacity of the current ARPS educators participating in the Institute, impacting their practice in the classroom and as growing school leaders. The long term goal would be to enrich the potential pool of instructional coach candidates. Both quantitative results and qualitative results demonstrated an increase in participant understanding of the topics, leading researchers to confirm that both short term and long term goals were met with partial success statistically.

ARPS educators who participated in the Institute were awarded continuing education credits for their work and time, but self-selected to be part of the Instituted based on personal interest and goals. Participants reported satisfaction with the learning from the sessions and at times surprise regarding the work instructional coaches were involved in at both the school and district level. As one participant from session six explained, “Being a coach is more than being a great teacher or super data analyzer, but a good listener, observer, and motivator of others to be better at serving the children of our community”.

There were no outright negative responses from participants, though there were a couple of questions regarding the message of the Institute as compared to their understanding of district initiatives. For example, in session four, one participant expressed surprise to hear a discussion of deficit-based strategies and felt this could be a “flip in philosophy” based on current district practices, questioning if the expectation of the district to include reading groups in classroom instruction was in opposition of the message. The clarification for this query, while not included as part of the Institute, includes a level of reflection not often seen in other professional

development opportunities at the district level. The level of reflection by participants regarding their own experiences with coaches was also shared in short answer responses, and served to support the goals of the researchers.

One participant's reflection on her own coach during session one infers a new understanding of coaching work, as she noted "I have the most awesome coach in the world! I thought she was awesome just because she was a GOOD person. Now I see how she practices many of the concepts shared this evening". Over the course of the Institute, several participants expressed surprise at the concept of equitable classroom practices being part of the Institute content, but quickly began to make sense of the many interwoven skills required of a coach, such as understanding asset-based strategies and supporting culturally responsive practices. One participant shared the value of coaches modeling these strategies and practices for teachers, and another noted the value of coaches being humble as opposed to showing authority, a trait this participant recognized as supporting an equitable classroom when teachers incorporate the practice with students, just as a coach would model with teachers. The awareness and growing understanding to build the capacity of teachers currently in the classroom only serves to better support our community of students, as well as strengthening the coaching candidate pool for upcoming years.

Other Valuable Lessons from the Instructional Coach Institute

Data collected from the Instructional Coach Institute demonstrated that participants grew in their knowledge and understanding of instructional coaching and equitable practices. In addition to the quantitative and qualitative data the researchers learned additional lessons. These lessons, include lessons for leadership, lessons for social justice, and lessons for implementation are elaborated on in this section. The researchers also learned lessons regarding aspects of the

Institute that will be important for sustainability of the Institute in the future as well as suggesting additional ideas for future research.

Lessons for Leadership

Based on data collected from the Instructional Coach Institute improvement project and research on best practices for instructional coaching, relationships matter between ICs and teachers (Aguilar, 2013; Jorissen et al., 2008; Knight, 2009; Knight, 2016) just as they do between students and teachers, or teachers and administrators. Laying a foundation that the instructional coach cares about teachers is essential for the coaching relationship to work effectively (Aguilar, 2013; Knight, 2009). Administrators must understand the importance of giving coaches time to build relationships with school staff to make way for transformational coaching that positively impacts students. School leaders should allow time for new coaches to build relationships, establishing firm ground for other coaching tasks. This is similar to the time needed for beginning teachers to develop a nurturing classroom environment for students. Implementing an Instructional Coach Institute did not provide the time to build relationships between potential ICs and the teachers they will work with; however, the Institute did reiterate the value of relationships in the coaching partnership, while also providing basic training in necessary coaching skills to reduce time loss in the coaching cycle due to "learning on the job" (Fullan & Knight, 2011; Jorissen et al., 2008) because being an IC is a role that extends beyond the basics.

Coaches need to understand that transformational coaching is the ultimate goal (Aguilar, 2013), but that it takes knowledge of the different coaching strategies to allow for transformational coaching to occur, which the Institute provided. Every teacher may require a

different approach from the IC and becoming dependent on any one coaching method will impair a coach's ability to be successful.

The social emotional part of the andragogy session resonated with participants based on the qualitative data from the Institute. This interest may be attributed to the unusual instructional circumstances teachers currently find themselves in due to COVID-19, but it also serves to remind school leaders that taking emotional care of teachers is an important part of the job as leaders. For ICs, emotional intelligence is essential for success (Aguilar, 2013). Knowing when to focus on the teacher's personal wellbeing is essential to being able to help a teacher improve instructional practices and knowing when a teacher is mentally and emotionally ready for a difficult conversation is an essential aspect of the emotional intelligence a successful coach needs.

Lessons for Social Justice

Every school and school system will have its own social justice issues to address. Coaches need to work with administrators and teachers to identify and remedy these issues in the classroom and throughout the school. Coaches should understand their own belief systems and be aware of how their personal privilege and bias based on experiences may impact the classroom. Helping other educators increase their awareness of their own biases and privilege as well as to acknowledge the opportunity gaps that exist (Darling-Hammond, 2010) may result in more equitable classrooms for all students, potentially increasing student performance outcomes to close achievement gaps that persist.

The Institute data confirmed that participants began the Institute with some understanding of equitable practices, even before attending the various sessions. Institute participants did not have an understanding of asset-based or deficit-based approaches before attending the sessions,

which are essential concepts for making transformational change to educational institutions (Gorski, 2018). After attending session four, Encouraging Positive Classroom Practices, one participant asserted that the session was amazing, and "should be mandatory" for every regular education teacher to assist all teachers in shifting mindsets to asset-based ideology. Although it cannot be guaranteed, participants' increased awareness of asset-based thinking may prompt them to make changes to their classroom practices and be better prepared to address deficit thinking if they become instructional coaches at some point in their careers. Qualitative data from this session also showed participants connected asset-based thinking to working with entire families and not just the students themselves, an unintended but important outcome for transforming schools according to Bryk et al. (2010).

The Instructional Coach Institute did not explicitly address Lesbian, Gay, Bisexual, Transgender, Queer (LGBTQ) issues and on the open-ended responses, there were specific questions a participant or participants asked about how coaches could support teachers in being more inclusive of LGBTQ students and families. LGBTQ concerns should be addressed in our schools in order for them to be equitable and welcoming for all students and their families and coaches can play a role in helping teachers pick inclusive materials, looking for representation of all students in the classroom, and helping educators identify their own biases that may impact the classroom. This is an area for growth for the Institute if ARPS continues implementing the Institute in the future.

Lessons for Implementation

The researchers believe the Instructional Coach Institute can be continued in ARPS and the model could also work in other school systems. The session topics were grounded in research about best practices for coaching and social justice. School systems should adapt the sessions

that address equity and social justice issues to reflect the demographics of their students, and there may be unique system-specific needs each system should prepare potential instructional coaches to address. The researchers also recommend that any school system seeking to provide training for aspiring coaches should include a session about their local expectations for coaches because the expectations of the coaching role can vary widely from place to place (Deussen, et al. 2007; Lucas, 2017; Mangin & Dunsmore, 2015; Woulfin & Rigby, 2017) although the fundamental skills of how to be a successful coach are the same (Aguilar, 2013; Knight, 2016).

Lengthening the timeframe for the Institute to span the entire school year is also a strategy to consider. There was clear interest from educators in ARPS about learning to become an IC as was evident when 29 elementary educators signed up for the training after the first open invitation. Teachers chose this professional development activity, but then had to balance it with other professional responsibilities as well. Expanding the sessions to once a month over the course of the school year may increase participants' ability to participate. Another option would be to conduct the Institute over the summer when teachers do not have school responsibilities.

Researchers also found that continuing communication and reminders throughout the Institute with participants was key. The researchers thought sending an initial email welcoming participants and then sending direct reminders to everyone through their calendars would be sufficient, which was not the case. Participants clearly needed frequent reminders about upcoming sessions and the researchers determined that sending a reminder email approximately a week before each Institute session was beneficial.

Lessons for Sustainability

The results of the Institute showed growth among the participants in their understanding of coaching and equitable practices. Still there is always room for improvement. The skills

shared in the Institute are ones that ARPS should continue to promote and include in future programming for the Institute. This will ensure a high quality professional development activity for both classroom teachers and aspiring instructional coaches.

For sustainability purposes, the researchers recommend offering the Instructional Coach Institute every two years in ARPS due to the limited number of coaching positions within the school system and the relatively low turnover in these positions. Other school systems with larger numbers of ICs may want to consider holding an Institute annually, especially if there is a high turnover among the coaches. The Institute could also be expanded to include middle and high school teachers who are interested in becoming coaches because the topics for the Institute are relevant to coaches at the elementary and secondary levels.

Participants cited having strong and well respected presenters as a motivating factor for them throughout the Institute so continuing to find a mix of relevant and professional presenters from within ARPS and from outside organizations will be important moving forward with the Institute. The researchers also recommend adapting the homework assignments to provide participants the opportunity to practice coaching at some point during the Institute alongside a current IC in ARPS.

The structure of the Institute is another important consideration for sustainability. The researchers strongly recommend keeping the sessions as live sessions, even if the sessions occur live using a virtual platform. This allows participants to have discussions and ask questions, receiving immediate feedback. Participant responses from the Institute indicated the ability to talk with others during the sessions was very beneficial and maintaining opportunities for interaction should be a priority for future Institutes. The researchers also recommend recording future sessions to accommodate participants who may be absent from a session due to other

personal or professional responsibilities; however, the Institute organizers should set a limit on how many sessions a participant could watch after the fact in order to maintain the integrity of the Institute as a whole.

Suggestions for Future Research

The researchers recommend that this same study should be conducted again to verify the results since the sample size for this study was small. Research on whether the Institute is more effective with all sessions held in-person versus all virtual or a hybrid model is also another avenue for future consideration. Another future area of research could be to compare perceptions of instructional coaches who attended the Institute compared to those coaches who did not. Researchers could also consider conducting an ethnographic study or similar research on ICs perceptions of experiences in their first three years of coaching. Since coaching can impact the equitable practices in schools, another research idea is to study the impact of new instructional coaches as compared to veteran ICs or how coaches address deficit-based thinking to shift to asset-based thinking

Conclusions from a Not So Basic Training

The ultimate aim of this study was to improve preparation of prospective ICs in ARPS by increasing their understanding of principles of coaching and equitable classroom practices. Based on the number of initial participants, there is a demand for professional development related to instructional coaching that is cost efficient and balances with teachers' other duties and responsibilities. Of the participants who attended each session, data showed a statistically significant change in their understanding of instructional coaching and equitable practices on half of the posttest measures. Although there is additional room for improvement in future Institutes, the researchers were satisfied with these results, especially considering the impact of COVID-19.

Student outcomes can be positively impacted by teachers who have the capacity to provide differentiated instruction to meet the variability of student needs. Participants in the Institute, even if they do not ultimately become coaches, will be better equipped to address equity issues in their classrooms and schools after this Institute. If the participants become coaches, they will have the skills to support ARPS teachers, who will need sustained support to learn about equitable classrooms and to change their current instructional practices to be more inclusive for all students. Based on qualitative results, participants clearly recognized the importance of relationships and building partnerships with their colleagues. This collaborative culture can have a transformational effect on classrooms and schools and can result in more equitable educational opportunities for students.

In ARPS, instructional coaches are the people who can best provide sustained professional support for teachers, especially learning that promotes positive classroom practices and equity. Instructional coaches have the capability to provide explicit and embedded individualized professional learning opportunities for teachers, but only when the coaches themselves have the capacity to do so. In ARPS, instructional coaches have previously had no preparation prior to assuming the coaching role, spending time learning necessary skills to be successful on the job, while also performing other various responsibilities of ARPS coaches. The Instructional Coach Institute provided participants the opportunity to learn coaching skills before they take on this leadership role and reduces their learning curve if they become coaches.

The Instructional Coach Institute for prospective coaches was implemented to prepare ARPS educators seeking to become coaches by building their capacity to support teachers. Basic coaching skills and strategies to promote equitable classrooms throughout the school system provided a foundation for participating aspiring ICs. Even in the event these participants do not

become instructional coaches in the long term, their capacity as teachers to address diverse needs now has a new level of understanding as classroom leaders. They are better prepared to address social justice issues and promote equity within ARPS' schools and also know how to promote these practices using coaching techniques to prompt growth among their colleagues. These outcomes have the potential to positively impact student achievement in ARPS and lead to a more equitable school system. Instructional coaches have the potential to support this educational transformation, but only when we provide them training that goes beyond the basics.

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Appendix A

Pretest Questions for Instructional Coach Institute

1. Create a Unique Identifier for yourself using: the year your car was made, the first letter of the street where you live, the number of pets you have, and the last letter of your middle name. For example, a participant who drives a 2005 vehicle, lives on Main Street, has 2 pets, and their middle name is Jane would be 2005M2e

2. How would you rank the coaching tasks below in order of importance?
   (1=most important 6=least important)

_____ Lesson planning with teachers
_____ Providing feedback to teachers on practices
_____ Reflecting on lessons with teachers
_____ Modeling classroom instructional practices
_____ Conducting professional development
_____ Promoting equitable classroom practices

3. What three skills do you believe are most beneficial for an instructional coach to possess? Choose only three.

- ☐ Communicating effectively with staff
- ☐ Promoting equitable classroom practices
- ☐ Being a good listener
- ☐ Interpreting data
- ☐ Understanding of high yield strategies
- ☐ Understanding of best practices in delivering professional development
- ☐ Conducting discussions around challenging topics

4. To what degree do you believe each of the following items represents equitable classroom practices?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Teacher welcomes students by name as they enter the classroom each day.	○	○	○	○	○
Teachers ensures classroom visuals, supports, and materials represent racial, ethnic and cultural backgrounds of classroom students.	○	○	○	○	○
Teacher models the use of graphic organizers.	○	○	○	○	○
Teachers uses and/or displays words in classroom from students' heritage language.	○	○	○	○	○
Teachers uses probing and clarifying strategies to	○	○	○	○	○

scaffold for students.					
Teacher uses wait time.	○	○	○	○	○

5. How comfortable are you regarding each topic below rated to andragogy (principles of adult learning)?

	No Knowledge or Understanding	Very Little Knowledge or Understanding	Average Knowledge or Understanding	Above Average Knowledge or Understanding	Complete Knowledge and Understanding
Utilizing best practices when working with adult learners	○	○	○	○	○
Effectively incorporating background experience of adults in classroom practice	○	○	○	○	○
Recognizing and mitigating teacher resistance related to new learning	○	○	○	○	○

6. How knowledgeable are you on each of the following topics regarding coaching models?

	No Knowledge or Understanding	Very Little Knowledge or Understanding	Average Knowledge or Understanding	Above Average Knowledge or Understanding	Complete Knowledge and Understanding
Directive (instructive) coaching	○	○	○	○	○
Facilitative coaching	○	○	○	○	○
Transformational coaching	○	○	○	○	○
The coaching cycle	○	○	○	○	○
Coaching heavy / coaching light	○	○	○	○	○

7. How well do you understand each topic and how it may impact a classroom?

	No Knowledge or Understanding	Very Little Knowledge or Understanding	Average Knowledge or Understanding	Above Average Knowledge or Understanding
Asset-based ideology	○	○	○	○
Deficit-based ideology	○	○	○	○

8. What is your level of understanding of the concept of hidden bias?

- ○ No understanding
- ○ Some understanding
- ○ Complete understanding

9. What is your level of understanding of culturally responsive teaching?

- ○ No understanding
- ○ Some understanding
- ○ Complete understanding

10. Do you think you have ever observed unintentional hidden bias?

- ○ No, I haven't observed it.
- ○ Maybe, but I'm not sure.
- ○ Yes, I have observed it occasionally.
- ○ Yes, I have observed it regularly.

11. Rate your level of knowledge of each concept around culturally proficient practices.

	Not Familiar	Limited Knowledge	Full Understanding	Full Understanding and Can Apply My Knowledge
Assessing cultural knowledge	○	○	○	○
Valuing diversity	○	○	○	○
Managing the dynamics of difference	○	○	○	○
Adapting to diversity	○	○	○	○
Institutionalizing cultural knowledge	○	○	○	○

12. How prepared do you believe you to walk into a teacher's classroom and offer immediate feedback on any lesson being taught?

- ○ Very unprepared
- ○ Generally unprepared
- ○ Neither prepared or unprepared
- ○ Generally prepared
- ○ Very prepared

13. How prepared do you believe you are to have a difficult conversation with a teacher who is resistant to change? For example, a teacher who is resistant to changing instructional practices to create a more equitable classroom environment.

- ○ Very unprepared
- ○ Somewhat unprepared
- ○ Generally prepared
- ○ Very prepared

Appendix B

Mini-Survey Questions for Instructional Coach Institute, following Session 1:

Overview of Coaching

1. Enter the Unique Identifier you created for yourself using: The year your car was made, the first letter of the street where you live, the number of pets you have, and the last letter of your middle name. For example, a participant who drives a 2005 vehicle, lives on Main Street, has 2 pets, and their middle name is Jane would be 2005M2e

2. How would you rank the coaching tasks below in order of importance? (1=most important 6=least important)

_____ Lesson planning with teachers

_____ Providing feedback to teachers on practices

_____ Reflecting on lessons with teachers

_____ Modeling classroom instructional practices

_____ Conducting professional development

_____ Promoting equitable classroom practices

3. Based on question 2, why did you choose the order you chose, specifically the 2-3 items you ranked the highest?

4. What three skills do you believe are most beneficial for an instructional coach to possess? Choose only three.

- [ ] Communicating effectively with staff
- [ ] Promoting equitable classroom practices
- [ ] Being a good listener
- [ ] Interpreting data
- [ ] Understanding of high yield strategies
- [ ] Understanding of best practices in delivering professional development
- [ ] Conducting discussions around challenging topics

5. Based on question four, why did you choose your top three skills as the most beneficial skills for an instructional coach?

6. How would you define the term "equitable classroom" to a layperson?

7. To what degree do you believe each of the following items represents equitable classroom practices?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Teacher welcomes students by name as they enter the classroom each day.	○	○	○	○	○
Teachers ensures classroom visuals, supports, and	○	○	○	○	○

materials represent racial, ethnic and cultural backgrounds of classroom students.					
Teacher models the use of graphic organizers.	○	○	○	○	○
Teachers uses and/or displays words in classroom from students' heritage language.	○	○	○	○	○
Teachers uses probing and clarifying strategies to scaffold for students.	○	○	○	○	○
Teacher uses wait time.	○	○	○	○	○

8. What from the session was most surprising for you?

9. What, if anything, from today's session would you like to know more about?

Appendix C

Mini-Survey Questions for Instructional Coach Institute, following Session 2:

Navigating Andragogy

1. Enter the Unique Identifier you created for yourself using: The year your car was made, the first letter of the street where you live, the number of pets you have, and the last letter of your middle name. For example, a participant who drives a 2005 vehicle, lives on Main Street, has 2 pets, and their middle name is Jane would be 2005M2e

2. How comfortable are you regarding each topic below rated to andragogy (principles of adult learning)?

	No Knowledge or Understanding	Very Little Knowledge or Understanding	Average Knowledge or Understanding	Above Average Knowledge or Understanding	Complete Knowledge and Understanding
Utilizing best practices when working with adult learners	○	○	○	○	○
Effectively incorporating background experience of adults in classroom practice	○	○	○	○	○
Recognizing and mitigating teacher resistance related to new learning	○	○	○	○	○

3. What do you believe will be the most challenging when working with adults as opposed to working with children?

4. What from the session was most surprising for you?

5. What, if anything, from today's session would you like to know more about?

Appendix D

Mini-Survey Questions for Instructional Coach Institute, following Session 3:

Equity in the Classroom

1. Enter the Unique Identifier you created for yourself using: The year your car was made, the first letter of the street where you live, the number of pets you have, and the last letter of your middle name. For example, a participant who drives a 2005 vehicle, lives on Main Street, has 2 pets, and their middle name is Jane would be 2005M2e

2. What is your level of understanding of the concept of hidden bias?

- ○ No understanding
- ○ Some understanding
- ○ Complete understanding

3. What is your level of understanding of culturally responsive teaching?

- ○ No understanding
- ○ Some understanding
- ○ Complete understanding

4. Do you think you have ever observed unintentional hidden bias?

- ○ No, I haven't observed it.
- ○ Maybe, but I'm not sure.
- ○ Yes, I have observed it occasionally.
- ○ Yes, I have observed it regularly.

5. Rate your level of knowledge of each concept around culturally proficient practices.

	Not Familiar	Limited Knowledge	Full Understanding	Full Understanding and Can Apply My Knowledge
Assessing cultural knowledge	○	○	○	○
Valuing diversity	○	○	○	○
Managing the dynamics of difference	○	○	○	○
Adapting to diversity	○	○	○	○
Institutionalizing cultural knowledge	○	○	○	○

6. What from the session was most surprising for you?

7. What, if anything, from today's session would you like to know more about?

Appendix E

Mini-Survey Questions for Instructional Coach Institute, following Session 4:

Coaching Models

1. Enter the Unique Identifier you created for yourself using: The year your car was made, the first letter of the street where you live, the number of pets you have, and the last letter of your middle name. For example, a participant who drives a 2005 vehicle, lives on Main Street, has 2 pets, and their middle name is Jane would be 2005M2e

2. How knowledgeable are you on each of the following topics regarding coaching models?

	No Knowledge or Understanding	Very Little Knowledge or Understanding	Average Knowledge or Understanding	Above Average Knowledge or Understanding	Complete Knowledge and Understanding
Directive (instructive) coaching	○	○	○	○	○
Facilitative coaching	○	○	○	○	○
Transformational coaching	○	○	○	○	○
The coaching cycle	○	○	○	○	○
Coaching heavy / Coaching light	○	○	○	○	○

3. How prepared do you believe you to walk into a teacher's classroom and offer immediate feedback on any lesson being taught?

- ○ Very unprepared
- ○ Generally unprepared
- ○ Neither prepared or unprepared
- ○ Generally prepared
- ○ Very prepared

4. What from the session was most surprising for you?

5. What, if anything, from today's session would you like to know more about?

Appendix F

Mini-Survey Questions for Instructional Coach Institute, following Session 5

Encouraging Positive Classroom Practices

1. Enter the Unique Identifier you created for yourself using: The year your car was made, the first letter of the street where you live, the number of pets you have, and the last letter of your middle name. For example, a participant who drives a 2005 vehicle, lives on Main Street, has 2 pets, and their middle name is Jane would be 2005M2e

2. How well do you understand each topic and how it may impact a classroom?

	No Knowledge or Understanding	Very Little Knowledge or Understanding	Average Knowledge or Understanding	Above Average Knowledge or Understanding
Asset-based ideology	○	○	○	○
Deficit-based ideology	○	○	○	○

3. Based on the information presented in this session, are there changes to your classroom or instructional practice(s) you would like to make moving forward? Please explain your answer.

4. What from the session was most surprising for you?

5. What, if anything, from today's session would you like to know more about?

Appendix G

Posttest Questions for Instructional Coach Institute, including Mini-Survey Questions, following Session 6

1. Enter the Unique Identifier you created for yourself using: The year your car was made, the first letter of the street where you live, the number of pets you have, and the last letter of your middle name. For example, a participant who drives a 2005 vehicle, lives on Main Street, has 2 pets, and their middle name is Jane would be 2005M2e

2. How would you rank the coaching tasks below in order of importance?
(1=most important 6=least important)

_____ Lesson planning with teachers

_____ Providing feedback to teachers on practices

_____ Reflecting on lessons with teachers

_____ Modeling classroom instructional practices

_____ Conducting professional development

_____ Promoting equitable classroom practices

3. What three skills do you believe are most beneficial for an instructional coach to possess? Choose only three.

☐ Communicating effectively with staff

☐ Promoting equitable classroom practices

☐ Being a good listener

☐ Interpreting data

☐ Understanding of high yield strategies

☐ Understanding of best practices in delivering professional development

☐ Conducting discussions around challenging topics

4. To what degree do you believe each of the following items represents equitable classroom practices?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Teacher welcomes students by name as they enter the classroom each day.	○	○	○	○	○
Teachers ensures classroom visuals, supports, and materials represent racial, ethnic and cultural backgrounds of classroom students.	○	○	○	○	○
Teacher models the use of graphic organizers.	○	○	○	○	○
Teachers uses and/or displays words in classroom from students' heritage language.	○	○	○	○	○

Teachers uses probing and clarifying strategies to scaffold for students.	○	○	○	○	○
Teacher uses wait time.	○	○	○	○	○

5. How comfortable are you regarding each topic below rated to andragogy (principles of adult learning)?

	No Knowledge or Understanding (1)	Very Little Knowledge or Understanding (2)	Average Knowledge or Understanding (3)	Above Average Knowledge or Understanding (4)	Complete Knowledge and Understanding (5)
Best practices when working with adult learners	○	○	○	○	○
Effectively incorporating background experience of adults in classroom practice	○	○	○	○	○
Recognizing and mitigating teacher resistance related to new learning	○	○	○	○	○

6. How knowledgeable are you on each of the following topics regarding coaching models?

	No Knowledge or Understanding	Very Little Knowledge or Understanding	Average Knowledge or Understanding	Above Average Knowledge or Understanding	Complete Knowledge and Understanding
Directive (instructive) coaching	○	○	○	○	○
Facilitative coaching	○	○	○	○	○
Transformational coaching	○	○	○	○	○
The coaching cycle	○	○	○	○	○
Coaching heavy / coaching light	○	○	○	○	○

7. How well do you understand each topic and how it may impact a classroom?

	No Knowledge or Understanding	Very Little Knowledge or Understanding	Average Knowledge or Understanding	Above Average Knowledge or Understanding
Asset-based ideology	○	○	○	○
Deficit-based ideology	○	○	○	○

8. What is your level of understanding of the concept of hidden bias?

- ○ No understanding
- ○ Some understanding
- ○ Complete understanding

9. What is your level of understanding of culturally responsive teaching?

- ○ No understanding
- ○ Some understanding
- ○ Complete understanding

10. Do you think you have ever observed unintentional hidden bias?

- ○ No, I haven't observed it.
- ○ Maybe, but I'm not sure.
- ○ Yes, I have observed it occasionally.
- ○ Yes, I have observed it regularly.

11. Rate your level of knowledge of each concept around culturally proficient practices.

	Not Familiar	Limited Knowledge	Full Understanding	Full Understanding and Can Apply My Knowledge
Assessing cultural knowledge	○	○	○	○
Valuing diversity	○	○	○	○
Managing the dynamics of difference	○	○	○	○
Adapting to diversity	○	○	○	○
Institutionalizing cultural knowledge	○	○	○	○

12. How prepared do you believe you to walk into a teacher's classroom and offer immediate feedback on any lesson being taught?

○ Very unprepared

○ Generally unprepared

○ Neither prepared or unprepared

○ Generally prepared

○ Very prepared

13. How prepared do you believe you are to have a difficult conversation with a teacher who is resistant to change? For example, a teacher who is resistant to changing instructional practices to create a more equitable classroom environment?

- ○ Very unprepared
- ○ Somewhat unprepared
- ○ Generally prepared
- ○ Very prepared

14. What from today's session was most surprising for you?

15. What, if anything, from today's session would you like to know more about?