

THE IMPACT OF LOOPING IN AN ELEMENTARY SCHOOL SETTING

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## **ABSTRACT**

Maureen J. Findley: The Impact of Looping in an Elementary School Setting  
(Under the direction of Dr. Brian Gibbs)

The mandates of federal and state education policies require educational leaders at all levels to select and implement research-based strategies to increase student achievement levels for all students. “Looping, a term coined by Jim Grant, author of the ‘Looping Handbook’ refers to the not-so-new but increasingly common practice of keeping groups students together for two or more years with the same teacher” (Northeast and Islands Regional Educational Lab. at Brown Univ., 1997, p.3). The purpose of this mixed methods study was to investigate the relationship between student assignments to a classroom practicing looping and student achievement on the state’s End-of-Grade (EOG) exam in an elementary school setting. The students’ achievement levels on the third and fourth grade EOG exams were used to determine if the assignment to a looping classroom had a statistically significant impact on student achievement. The comparison focused on disaggregated student subgroups to examine the relationship between the assignment to a looped classroom and the narrowing of the persistent achievement gap between minority students and their Caucasian counterparts. In addition, this study investigated how teachers and administrators practicing looping perceive the impact of looping on student achievement.

The results of the quantitative portion of this study revealed that students’ assignment to a classroom that practiced looping did not have a statistically significant impact on overall student achievement nor did looping narrow the achievement gap. The results did indicate that

assignment to a looping classroom positively impacted mathematical achievement levels for students in the African American subgroup but did not have a statistically significant impact for any other student subgroup. The qualitative portion of this study consisted of semi-structured interviews with the teachers and administrator engaged in looping to provide context and descriptive data. The findings indicated that the teachers and administrators feel that looping is a positive experience for some students and had the potential to positively impact student achievement but is not a positive experience for all students. Overall, the teachers and administrator found looping positively impacted relationships but had limited impact on achievement levels.

To my mother, best friend, and guardian angel, this is possible because of your love and unwavering belief in all of my dreams. I am blessed to be your daughter.

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## **LIST OF ABBREVIATIONS**

AYP	Annual yearly progress
ESEA	Elementary and Secondary Education Act
ESSA	Every Student Succeeds Act
IRB	Institutional Review Board
MAP	Measures of academic progress
MHN	Maslow's Hierarchy of Needs
NAEP	National Assessment of Educational Progress
NCDPI	North Carolina Department of Public Instruction
NC EOG	North Carolina End of Grade
NCLB	No Child Left Behind
SAT	Stanford Achievement Test
VAM	Value added measure

## **CHAPTER ONE: STUDY OVERVIEW**

### **Introduction**

Policy is made at the state and federal levels of our government, but its results live in our schools. Educational leaders in schools face the decision to select and implement organizational structures and strategies to address the demands of current educational policy. Looping, as a school organizational and pedagogical strategy, is an attempt to increase student achievement, narrow the achievement gap (Bogart, 2002, p.47) and is a school-based response to a long line of educational policy focused on accountability for individual student achievement. The necessity to review and measure the effectiveness of school-based responses such as looping is prevalent to address the policy requirements to increase school accountability and improve student outcomes for all students.

Looping refers to the practice of groups students with the same students and teacher or group of teachers for two or more years. The decision by school leaders to utilize the instructional strategy of looping to address student achievement deficiencies directly links to the motivation theory outlined in Maslow's Hierarchy of Needs (1943). Maslow (1943) asserts that all people have five levels of needs and some are more fundamental than others, and if those fundamental needs are not addressed, the person will not be able to achieve or feel satisfied at the higher needs levels. Through the lens of Maslow's Hierarchy of Needs (1943), school leaders must develop and implement instructional strategies which address lower needs levels to impact student achievement levels which are part of the higher-level needs in Maslow's hierarchy. Looping presents an approach to educating and meeting the needs of the whole child therefore,

addressing lower level need is necessary to allow a student to experience satisfaction of higher level needs.

The desire and urgency to improve individual student achievement in public schools nationwide has exponentially increased since the 1983 release of a report titled *A Nation at Risk*. The report “opened with the claim that the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people” (Ravitch, 2010, p. 27). With growing concerns about the quality of education offered in public schools, the federal government along with a multitude of private businesses and organizations spearheaded a reform movement to develop and promote instructional programs and materials designed to improve student achievement.

As educational organizations focused on strategies to improve student achievement, the federal government’s involvement in public education “shifted during the Reagan and G.H.W. Bush presidencies from delivery of services to achieve educational opportunity and equity to standards and outcomes with the goals of educational excellence and greater student achievement” (Mills, 2008, p. 11). In the response to a call for educational reforms and academic excellence, the United States government passed the *No Child Left Behind* (NCLB) Act in 2002 during G.W. Bush’s administration, expanding the federal government’s control over public schools across the nation. Several elements of NCLB have forced a change in the way school leaders and policymakers approach school reforms and programs to achieve set levels of proficiency. NCLB placed standardized test scores as the primary measures of quality schools and student performance. The NCLB mandate states, “to administer annual assessments in reading and language arts and math, at a minimum, to all students in grade levels three through eight” (Mills, 2008, p. 12).

One requirement established by NCLB required districts to report annual progress for specific subgroups within the student population and places emphasis on increasing equity and achievement for all students. A second requirement set forth by NCLB were annual measurable objectives (AMOs), which measure district and school progress in reaching 100% proficiency for all students. AMOs are determined by a state's internal plan to meet the nation's deadline of 100% of students being proficient in reading, language arts, and math by the end of the 2013-2014 school year (Mills, 2008, p. 14).

In addition to the setting of requirements for measuring and reporting student achievement levels, NCLB implemented strict sanctions for states, districts and schools who consistently failed to meet established goals. Depending on a school's progress toward meeting AMOs and Adequate Yearly Progress (AYP), specific sets of corrective actions could be sanctioned by the state to assist progress toward increasing achievement. "Sanctions threatened or imposed by the system include permitting student transfers to other public schools, offering supplemental education services (tutoring) to disadvantaged students, 'corrective action,' and the formulation or implementation of a restructuring plan" (Ahn & Vigdor, 2014, p. 6). Ravitch (2010) asserts,

The problem was the misuse of testing for high-stake purposes, the belief that a test could identify with certainty which students should be held back, which teachers and principals should be fired or rewarded, and which schools should be closed. The idea that these changes would inevitably produce better education was deeply flawed. (p. 158)

With districts and schools focused on implementing structures to increase student achievement on standardized tests and avoiding sanctions imposed by the federal government, educational leaders gave specific attention to subgroups tracked through AYP. This focused on improving subgroup student achievement became referred to as the achievement gap.

The achievement of minority students represents a long-standing issue in the field of education. Across the U.S., Caucasian students and students from wealthy, well-educated families have consistently outperformed students from most other ethnic backgrounds and students from impoverished families on virtually every indicator of academic achievement in the host of studies that have addressed this issue. The term ‘achievement gap’ is often used to refer to this phenomenon. (North Carolina Department of Public Instruction, 2000, p. 4)

This heightened awareness to address and narrow the achievement gap led many districts and school leaders to select and implement research-based changes in organizational structures and/or instructional practices based on the perceived ability to address and narrow the achievement gap.

A multitude of research-based strategies exist which are aimed at addressing the issue of eliminating the achievement gap and increasing individual student achievement for all students, specifically minority student subgroups (Marzano, 2009, p.30). One such reform that requires further research is the use of looping in elementary education settings to improve student achievement. Looping is defined as teachers and students moving together from one grade level to the next as a group (Nevin, Cramer, Voigt, & Salazar 2008, p. 283).

Existing literature supports looping as a system that allows teachers to “know the students’ preferred way of learning, behavior patterns, interest, emotional stability, and social skills” (Nicholas & Nicholas, 2002, p. 19) from day one. In addition, looping creates an educational environment in which teaching and learning begin on day one of the second year because of the previously established student teacher relationship. A key advantage of looping is this practice provides “the teacher more time to analyze and observe the children” (Bracey 1999,

p. 169). Bracey's (1999) emphasis on the teacher having an extended amount of time to learn students and form lasting relationships is mirrored in *A Standing Ovation for Looping* by Chirichello and Chirichello (2001). In addition to increased teacher knowledge and understanding of individual students' needs, looping for at least two years establishes an environment in which students have a greater sense of belonging and creating enduring bonds between teachers and students (Westerfield, 2009, p. 123).

This study investigates the impact of looping on individual student achievement and narrowing the achievement gap in an elementary school setting. Nevin et al. (2008) found that looping in elementary school settings has shown "that students themselves reported social, academic, and emotional gains" (p. 284). Conducting research to provide statistically sound evidence supporting looping as a means to improve student achievement and narrow the achievement gap extends the existing findings on the potential benefits of looping. Identifying a research-based instructional strategy, which increases individual student achievement and narrows the achievement gap, provides options for educational leaders facing the pressures of federal and state government legislation to improve student achievement.

### **Problem Statement**

The relationship between student achievement levels and student assignment to a looping classroom was investigated in this study. Upon review of the current research related to the impact of looping on student achievement (see for example; Bracey 1999, Chirichello & Chirichello 2001, Nevin et al., 2008, and Westerfield 2009), a gap exists in the analysis of the impact of looping on narrowing the achievement gap. The impact of looping on specific student subgroups and the impact of looping on closing the achievement gap between minority students and their Caucasian counterparts has not been researched. In the current age of accountability,

educational leaders at all levels of schooling seek research-based instructional strategies and classroom organizational structures that have the potential to improve student achievement and help in closing the achievement gap among diverse student populations in today's public school classrooms.

This study was conducted for two reasons: first in response to the gap in looping research related to the impact on specific student subgroups, and second the need for instructional strategies and classroom organizational structures to address the state and federal mandates to improve student achievement for all students. The ability to respond to the gap in current looping research is possible because of the aggregated student achievement data collected by schools in response to NCLB and *Every Student Succeeds Act* (ESSA) mandates. The federal legislation addressing student achievement requires states to assess and analyze achievement data specific to student racial, ethnic, and socioeconomic status groups. The availability of detailed student achievement data makes the investigation of the impact of looping on specific student subgroups possible. This study has the opportunity to potentially add to the research that identifies looping as a classroom organization structure, which can improve student achievement, or could further the research support that the structure of the classroom impact student achievement or the achievement gap. Next, I will review the purpose and hypotheses guiding this research study.

### **Purpose of the Study**

The purpose of this study was to investigate the relationship between student assignments to a classroom practicing looping and student achievement on the North Carolina End of Grade (NC EOG) exam a state standardized test in an elementary school setting.

## **Research Hypothesis**

The assignment of students to a classroom practicing looping will positively impact EOG standardized test achievement levels for student subgroups in a statistically significant manner.

## **Major Research Questions**

1. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for student subgroups?
2. Does the assignment of students to a classroom practicing looping narrow the achievement gap in a statistically significant manner?
3. How do teachers and administrators engaged in looping perceive its impact on student achievement?

## **Minor Research Questions**

1. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the African American student subgroup?
2. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Hispanic/Latino student subgroup?
3. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Caucasian student subgroup?
4. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Asian student subgroup?
5. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Mixed-Race student subgroup?

## **Theoretical Framework**

### **Maslow's Hierarchy of Needs Theory**

Maslow's (1943) Hierarchy of Needs (MHN) theory asserts that people have a core set of needs which have an effect on the individual's motivation and behaviors. Maslow presented "five motivational needs: (1) physiological, (2) safety, (3) belonging and love, (4) esteem, and (5) self-actualization" (Dahl, 2015, p. 630). Each level addresses different needs which must be individually satisfied for each person. MHN (1943) theory mandates the lower level needs of an individual must be met before the higher-level needs begin to influence the individual's motivation and desires.

Assessing each level of need in MHN (1943) requires an understanding of the major tenets of each level and how each level is contextualized in an educational setting. The lowest level, physiological needs, encompasses basic survival needs such as food, shelter, and healthcare. Within an educational setting, the basic survival needs include books, school supplies, meals before and during the school day, as well as access to health care providers such as a nurse when required. The second level, safety, related to the environment within an individuals' home and community as well as a person's comfort level. Safety within an educational environment can refer to discipline policies and practices to include physical campus security. As well as issues related to bullying, racism, sexism, stereotypes, and the upkeep of the facilities and classrooms. The third level, belonging and love, is a person's desire to be valued by others, to be a part of a group, to make connections and sustain relationships with other people. In the educational environment, the third level of needs encompasses the collaboration among peers and teachers, the presence of the teacher within the class, a sense of community with a class and schools, personalized feedback on achievement and progress, involvement in

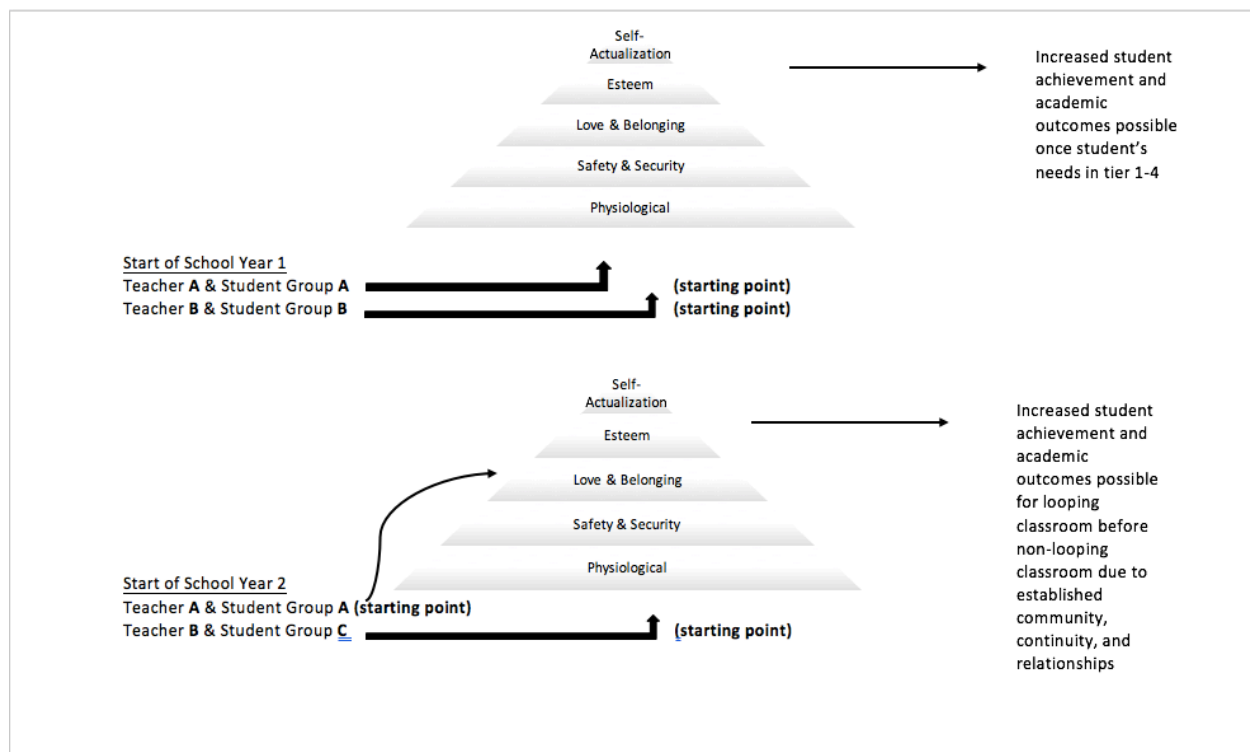
extracurricular activities, as well as positive and lasting relationships with peers and teachers inside and outside of the classroom. The fourth level in MHN is self-esteem. Self-esteem includes internal and external components. The internal components are related to drive, self-worth, self-image, and personal beliefs of competency. External components of self-esteem refer to the status which is inferred on individuals by others. In an educational setting, self-esteem is fostered through the creation of an inclusive classroom climate, responsive feedback, assessments, and opportunities to demonstrate understanding and competency. A focus on mutual respect among peers and teachers, as well as attention to character and self-confidence development for all students impacts self-esteem within an educational environment as well. Self-actualization, the final level in MHN (1943), identifies a state at which individual desires to be their best and achieve at the highest levels while contributing to the world around them. The fifth level of needs in an educational environment is the stage in which a learner desires to improve personal academic outcomes, actively engages in learned guided instruction, and seeks to have an impact on the larger educational community.

The needs specific to an educational setting outlined above at levels one through four must be met for each individual student prior to that student having internal motivation and desire for the highest level of need of self-actualization. Self-actualization refers to the stage “in which the individual can make full use of his or her talent and ability” (Dahl, 2015, p.630). Once a student has all subordinate levels of needs met and is in the stage of self-actualization within an educational environment, the opportunities for student achievement levels to be impacted increases as the student is fully utilizing individual knowledge and skills.

"A review of Abraham Maslow's Hierarchy of Needs reveals a strong support for the practice of looping" (Little & Little, 2001, p. 11). The practice of looping creates an educational

environment in which the teacher and student are promoted together for at least two consecutive years. Looping provides the opportunity for the needs of individual students to be identified and addressed due to the extended time spent together over multiple school years with the same teacher. Looping creates an extended student teacher relationship as well as fostering the building of community within a classroom, creating the opportunity for the students and the teacher to understand specific needs at each level and deficiencies which need to be addressed. As outlined in MHN theory, a student is unable to possess and act upon the motivations and desires required in the self-actualization stage until the needs in the initial four stages are met. The potential power of the instructional strategy of looping is explained by MHN theory and illustrated in Figure 1.

**Figure 1: *The power of looping through Maslow's Hierarchy of Needs***



## Study Methods

Since the data sets collected include both numerical student achievement data and interviews with teachers and administrators a mixed methods study design was selected. The quantitative portion of the study included the numerical student achievement results from the annual administration of the EOG. The qualitative portion of the study involved interviews with teachers assigned to looping classrooms and with the school administration providing context to the quantitative analysis. The primary focus of this study was the impact of student assignment to a looping classroom on student achievement including the disaggregation of data for specific student subgroups at a high performing magnet school in a suburban setting.

The qualitative portion of this study was descriptive in design. As a qualitative measure, an interview protocol for teachers participating in looping and the school administrators was employed. Lopez-Fernandez and Molina-Azorin (2011) cite the importance of utilizing qualitative methods in addition to quantitative analysis as the mixed methods approach illustrates how the qualitative research complements the quantitative research by providing clarification and more robust illustration of the results of a quantitative analysis (p. 1461).

The design for the quantitative portion of this study was an *ex-post facto* mixed correlation design model. The study did not involve the manipulation of a treatment; the data collected were utilized for the sole purpose of determining if and to what degree a relationship exists between the assignment of students to looping classrooms and student subgroup achievement levels on a state mandated test. The study was a mixed correlation design since the purpose of the study was “to determine how the outcomes for individuals who receive a treatment differ from what the outcome would have been in the absence of the treatment” (Murnane & Willett, 2011, p.33). The study utilized a factorial design since the data collected

consisted of two specific types of classroom assignments, looping and non-looping classrooms. Further explanation of study methods and research design are provided in chapter three. Taking into account the problem under investigation, the research questions, theoretical framework and research methods, the assumptions and limitations outlined in the next section are now identified.

### **Assumptions and Limitations**

Prior to conducting a research study, assumptions and limitations must be addressed. The first of four assumptions in this study is the educational practice of assigning students to a looping classroom has an impact on student achievement. The practice of assigning students could have a positive or negative impact on student achievement, but the presence of an impact is assumed. The second assumption relates to the theoretical framework for this study, assuming that because of looping students are at a higher level on Maslow's (1943) Hierarchy of Needs and therefore more likely to experience higher levels of achievement. Since the practice of looping encourages a whole child approach to education through fostering long-term relationships and community within a classroom, students will have fundamental needs such as physiological, safety, and love and belonging met allows for satisfaction of higher level needs to include self-esteem and self-actualization. The third assumption is if the assignment of students to a looping classroom has a positive impact on student achievement levels for all students, the practice of looping alone, independent of other factors in the educational experience, is not enough to increase the student achievement of specific student subgroups enough to narrow the achievement gap. The fourth assumption of this study is the use of a single elementary school site allows for the single variable of the assignment to a looping classroom to be isolated; thus, longitudinal data is available for students. Since the study utilized a single school and a single cohort of students within the school, the study design assumed that variables such as teacher

quality and maturation of students can be controlled for using longitudinal data, student achievement data, and teacher quality assessments.

In addition to the four assumptions addressed above, limitations of the study require acknowledgement as well. The study focused on a single elementary school site and a specific cohort of students who have experienced looping for a single year, the applicability and relevance is limited to context, which would be similar in nature. Generalizability is therefore limited. In addition, the elementary school site chosen for the study was already identified as high performing and is a magnet school in which the students apply to attend. This is unlike a traditional school in which students are assigned based on districting. The fact parents intentionally apply and enroll students at the study site introduces a possible selection bias. The focus on the single quantitative variable of EOG scores further limits the findings of the study, as the specific assessment is not utilized in all states or all elementary schools. In addition, the teacher effects are nested within the treatments effect since there is a single treatment of the assignment to a looping or non-looping classroom, and the teachers were only selected because the school site began the implementation with the current fourth grade cohort during their third-grade year. Since the research model utilized in this study does not address teacher quality, the teacher effects on student outcomes is a limitation of the study. Lastly, the study focuses solely on the investigation of the relationship between assigning students to looping classrooms and increased student achievement on the EOG standardized test.

### **Definition of Terms**

The terms below will be used throughout the study. Definitions are listed alphabetically and have been provided to offer clarity.

*Achievement Gap:* The achievement gap is the disparity between the achievement on standardized test, which exist between minority students and their Caucasian counterparts. Achievement gaps exist between student populations within individual schools and across districts, states, and the nation. Within this study the achievement gap refers to the achievement discrepancies between student subgroups on the EOG standardized test.

*End of Grade Assessment (EOG):* A state mandated standardized test in North Carolina designed to measure student achievement levels and progress toward mastery of objectives and grade specific competencies outlined in the standard course of study.

*Looping:* Looping is a process by which whole classrooms of the same teacher and students are promoted from one grade to the next intact.

*Non-Caucasian Students:* Student who identifies as a member of an ethnic subgroup other than Caucasian or Asian. For the purposes of this study Non-Caucasian is a student subgroup consisting of all students identifying as African American, Hispanic/Latino, and Mixed Race.

*Student Subgroups:* Groups of students who share characteristics such as gender, race, ethnicity, socioeconomic status, language and disabilities. For the purpose of this study, student subgroups are utilized to categorize students and student achievement scores for analysis of achievement gaps.

### **Chapter Summary**

Chapter one provided an introduction to the study assessing the impact of student assignment to looping classrooms on student EOG achievement levels in an elementary school. The introduction includes background information related to the practice of looping in the

classroom and the benefits of looping for students in an elementary school setting. The background of looping practices sets the stage for further analysis of the potential impact of looping on student achievement outcomes. This chapter states the purpose of the study to examine the relationship between the practice of looping and student achievement on the NC EOG standardized test based on the assertion that student in a looping classroom are at a higher level of Maslow's (1943) Hierarchy of Needs theory. The details of analysis of the major and minor research questions proposed in this chapter through mixed methods including interview protocols and an *ex-post facto* correlational design will be further discussed in the following chapters.

The next chapter presents a review of the literature relevant to this study. The review of literature will focus on the history and practice of looping and the accountability practices centered on standardized measures of student achievement.

## **CHAPTER TWO: LITERATURE REVIEW**

### **Introduction and Approach**

In this chapter, the review of literature will present six themes related to the instructional strategy of looping and achievement-based accountability. The six themes include research related to Maslow's Hierarchy of Needs (MHN), the history of looping, benefits, and controversies related to looping, the student achievement-based accountability movement, student achievement and the achievement gap, and research related to looping and student achievement. The final sections of this chapter will describe the gaps in the literature and overall themes and critiques of the literature.

### **Problem**

The relationship between student achievement and student assignment to a looping classroom was investigated in this study. Upon review of the current research related to the impact of looping on student achievement (see for example; Bracey 1999; Nevin et al., 2008; and Westerfield 2009), a gap exists in the analysis of the impact of looping on narrowing the achievement gap. The impact of looping on specific student subgroups and on closing the achievement gap between minority students and their Caucasian counterparts has not been researched. In the current age of accountability, educational leaders at all levels of schooling seek research-based instructional strategies and classroom organizational structures to improve student achievement and make progress in closing the achievement gap among diverse student populations in today's public school classrooms.

This study was conducted for two reasons: first in response to the gap in looping research related to the impact on specific student subgroups, and second the need for instructional strategies and classroom organizational structures to address the state and federal mandates to improve student achievement for all students. The ability to respond to the gap in current looping research is possible due to the aggregated student achievement data collected by schools in response to NCLB and *Every Student Succeeds Act* (ESSA) mandates. The federal legislation addressing student achievement led to achievement data specific to student racial, ethnic, and socioeconomic status groups. The availability of the detailed student achievement data makes the investigation of the impact of looping on specific student subgroups possible. Educational leaders are continually seeking research-based strategies to meet the needs of all students. The investigation in this study has the opportunity to potentially add to the research that identifies looping as a classroom organization structure, which can improve student achievement, or could further the research support that the structure of the classroom impacts student achievement or the achievement gap. Next, I will present the literature related to this study thematically.

### **Themes in Literature**

#### **Maslow's Hierarchy of Needs**

Maslow's (1943) Hierarchy of Needs (MHN) theory asserts that people have a core set of needs that have an effect on the individual's motivation and behaviors. Maslow presented "five motivational needs, (1) physiological, (2) safety, (3) belonging and love, (4) esteem, and (5) self-actualization" (Dahl, 2015, p. 630). Each level addresses different needs which must be individual satisfied for each person. MHN (1943) theory mandates that the lower level needs of an individual must be met before the higher-level needs begin to influence the individual's motivation and desires. Taormina and Gao (2013) created operational definitions for each of the

need levels present in Maslow's Hierarchy as a means to measure if a person's needs at a particular level are being met (p. 155). The operational definitions were developed "(1) to assess the satisfaction of each need, (2) to assess their expected correlations (a) with each of the other needs and (b) with four social and personality measures (i.e., family support, traditional values, anxiety/worry, and life satisfaction), and (3) to test the ability of the satisfaction level of each need to statistically predict the satisfaction level of the next higher-level need" (p.155). The operational definitions were utilized in a study which gathered survey responses from over 300 adult participants related to the satisfaction of the five needs. Taormina and Gao (2013) found that "the satisfaction of any given need was positively and significantly correlated with the need immediately below it and in the hierarchy, thus, supporting Maslow's theorized hierarchy of needs" (p. 168). The study also indicated that,

satisfaction of the physiological needs was a significant predictor of the satisfaction of every one of the four higher-level needs, suggesting that the physiological needs are profound and, as Maslow (1943) argued, that they could very well preempt one's ability to satisfy any of the higher-level needs if they are not satisfied. (p. 169)

The results found by Taormina and Gao (2013) support the necessity to assess the satisfaction of lower level needs before assessing higher level needs.

In addition to an understanding of how the needs in the hierarchy relate to one another, an understanding of the tenets of each need and how each level is contextualized in an educational setting is imperative prior to assessing satisfaction levels. The lowest level, physiological needs, encompasses basic survival needs such as food, shelter, and healthcare. Milheim (2012) presents a model of Maslow's five needs levels specific to the educational environment, though the study focuses on needs within an online school environment with major tenets of each level in Maslow's Hierarchy (1943) are applicable to traditional educational environment as well (p. 161). Within an educational setting, the basic survival needs include books, school supplies,

meals before and during the school day, as well as access to health care providers such as a nurse when required (Milheim, 2012, p.161). The second level, safety, related to the environment within an individuals' home and community as well as a person's comfort level. Safety within an educational environment can refer to discipline policies and practices, physical campus security, issues related to bullying, racism, sexism, stereotypes, and the upkeep of the facilities and classrooms (Milheim, 2012, p. 162). The third level, belonging and love, is a person's desire to be valued by others, to be a part of a group, to make connections and sustain relationships with other people. In the educational environment, the third level of needs encompasses collaboration among peers and teachers, the presence of the teacher within the class, a sense of community with a class and schools, personalized feedback on achievement and progress, involvement in extracurricular activities, as well as positive and lasting relationships with peers and teachers inside and outside of the classroom (Milheim, 2012, p.163). The fourth level in MHN is self-esteem. Self-esteem includes internal and external components. The internal components are related to drive, self-worth, self-image, and personal beliefs of competency. External components of self-esteem refer to the status which is inferred on an individual by others. In an educational setting, self-esteem is fostered through the creation of an inclusive classroom climate, responsive feedback, assessments and opportunities to demonstrate understanding and competency, a focus on mutual respect among peers and teachers, as well as attention to character and self-confidence development for all students (Milheim, 2012, p.163-164). Self-actualization, the final level in MHN (1943) identifies a state at which individual desires to be their best and achieve at the highest levels, while contributing to the world around them. The fifth level of needs in an educational environment is the stage in which a learner desires to

improve personal academic outcomes, actively engages in learned guided instruction, and seeks to have an impact on the larger educational community (Milheim, 2012, p. 164).

With a clear understanding of the hierarchy of needs for individuals within an educational environment, it is imperative the school faculty and staff are vigilant in assessing the satisfaction of each need level for individual students. School leaders should also provide resources to meet the lower level needs which in turn will allow for performance and satisfaction of the higher-level needs such as esteem and self-actualization which are necessary for academic success. Assessing the satisfaction of the hierarchy of needs of individual students can be accomplished by utilizing tested measures such as the two scales developed by Lester (2013). Lester (2013) presents Lester's scale which "assess the extent to which the five needs are satisfied in the respondents" (p.16). Once student's needs are assessed, educators can begin developing strategies and identifying resources to meet those needs.

Studies related to student performance and Maslow's Hierarchy of Needs (1943) have shown needs of students must be identified and met to increase student retention and for students to experience academic progress and success (Freitas & Leonard, 2011, p. 12). Freitas and Leonard (2011) emphasize "a way to help students met these needs is by generating and publicizing resources for student learning, as well as creating policies and learning experiences that assist students to meet their needs" (p. 12).

Along with providing resources necessary to meet student's needs, Deering, McAleese, Hannah, and McLean (2013) outline the importance for educators to focus on all levels of Maslow's Hierarchy (1943) not just esteem and self-actualization which are linked directly to student achievement (p. 3). Understanding and addressing the needs of students through a holistic approach centers on "helping to develop the full potential of every young adolescent so

they grow into the kind of adults we would like to have as our doctors, teachers, and neighbors someday” (Deering, McAleese, Hannah, & McLean, 2013, p.4).

Further exploration of each level of Maslow’s (1943) Hierarchy of Needs theory and how those needs can be assessed and addressed within an educational environment support the use of the theory as the theoretical framework for this study. In addition, the emphasis placed on identifying and meeting the lower level needs of students prior to students being able to achieve at high level needs to include esteem and self-actualization reinforce MHN (1943) ability to explain the potential power of the instructional strategy of looping. Table 1 reviews the studies and key findings presented in Maslow’s Hierarchy of Needs. The next section reviews the literature related to the history of looping.

**Table 1: *Maslow’s Hierarchy of Needs***

<b>Study</b>	<b>Year Published</b>	<b>Author(s)</b>	<b>Key Findings</b>
Maslow’s Hierarchy of Needs and Student Academic Success	2011	Freitas, F.A. & Leonard, L.J.	For students to succeed their needs on the hierarchy must be met. It is imperative that faculty and staff identify student’s needs and connect them with resources to meet their needs so those needs don’t impede academic progress.
Toward a Better Experience: Examining Student Needs in the Online Classroom through Maslow’s Hierarchy of Needs Model	2012	Milheim, K.L.	Presents a model to explain the five levels of needs specific to school environments to include school supplies, clear directions, collaboration, feedback, and assessment.
Teaching the Whole Student: Maslow Means	2013	Deering, P.D., McAleese, J.,	Deficient needs preoccupy students when they are not met but drop off

Middle School		Hannah, J.R. & McLean, D.	their radar once met. Many schools overemphasize achievement which is part of the esteem level of the hierarchy and lose sight of basic needs at the base of the hierarchy.
Measuring Maslow's Hierarchy of Needs	2013	Lester, D.	Conducted a survey among students to rate the importance of their needs. Results mirrored the hierarchy of needs created by Maslow.
Maslow and the Motivation Hierarchy: Measuring Satisfaction of the Needs	2013	Taormina, R. J. & Gao, J. H.	Found positive correlation among satisfaction of needs at each level on Maslow's hierarchy. The more satisfied the lower levels needs of an individual the greater satisfaction of the need at the next higher level. Also, satisfaction level with family life, support, and values has a positive correlation with satisfaction of all five levels of needs.
The SAGE Encyclopedia of Theory in Counseling and Psychotherapy	2015	Dahl, H.	Abraham Maslow's Hierarchy of Needs consists of five levels. Each subordinate level must be met prior to addressing the next level. Meeting the lower level needs of students is required before the level of self-actualization can take place.
Academic Expectations and Sense of Belonging Among Hispanic High School Students	2016	Nunez, I.	Study found students who do not feel that they belong in an educational environment tend to withdraw thus adding to the validity of the achievement gap. A focus on the sense of belonging and student engagement leads to increased success in school. A sense of belong is critical for emotional well-being and academic achievement.

## History of Looping

The educational strategy of looping defined as the practice in which the “teacher stays with the same group of children for more than one grade” (Little & Little, 2001, p. 7). The

concept of looping in education is not a new concept. The origins of looping programs date back to the German Waldorf Schools founded by Austrian educator Rudolf Steiner in the 1900s (Danley, 2012, p.10). The Waldorf Schools were founded for the purpose of educating the children of workers at the Waldorf-Astoria cigarette factories.

Rudolf Steiner designed the Waldorf Schools in a manner that required students to remain with the same teacher for multiple years (Danley, 2012, p10). Steiner believed that students remaining with the same teacher for more than one year and having the opportunity to develop long term relationships with the teacher benefited students by providing a focus on the whole child (Danley, 2012, p. 10). Barnes (1980) argues that Steiner believed that children in their first years of formal schools learned best through acceptance and emulation of authority (p. 324). Since students in elementary school settings are away from their families for the first time, the classroom becomes a second family environment for the students and the teacher takes on the role of the authority figure. In Waldorf schools, students are promoted with the same teacher for first through eighth grade. The looping of teachers and students in the Waldorf schools created an effective model which led to opening of over 350 Waldorf schools in over 20 countries (Reinsmith, 1989, p.83).

A particular Waldorf school in Germany has become well known for increasing academic achievement through the educational strategy of looping. The Koln-Holweide School called the practice of looping as “team-small-group-plan” (Little & Little, 2001, p.8). The model promoted teachers along with the students in small groups within classes of approximately 30 students throughout multiple years in school. The looping model used at Koln-Holweide promoted collaboration and cooperation among students and interpersonal development (Husband & Lang, 2000, p.49).

In the United States, the implementation of looping dates back to the single room schoolhouse (Barger, 2013, p. 2). The single room schoolhouse was a looping classroom. From the early 1600s through the mid 1800s, most Americans who attended a formal school in the United States received their education in the single room schoolhouse environment. The looping based educational practice of the single room schoolhouse persisted in the United States until the age of reform and enlightenment in the mid 1800s. The movement away from the single room, looped format of schooling in the United States followed the recommendations by Horace Mann to organize school into graded classrooms. Horace Mann believed the separation of schools into graded classrooms as the “proper classification of scholars” and many American parents agreed (Bachrach, 1995, p.19).

In 1974 Deborah Meier opened Central Park East Elementary School where students and teachers remained together for two years despite a movement away from looping with the end of the single room schoolhouse (Hitz, Somers, & Jenlink, 2007, p. 80). Meier believed it was imperative for students and teachers to remain together for at least two years to allow for time to build and maintain relationships that improved student achievement (Hitz et al., 2007, p. 80). The organization of the education environment within the school connected the building of student teacher relationships with learning pedagogy (Ganley, 2011, p. 30). Central Park East Elementary School utilized the educational strategy of looping to foster student-teacher relationships and increase achievement levels. Later in the 1980s and early 1990s looping reemerged in American schools (Gregory, 2009, p.17). The return to implementing looping in American schools created an educational environment that seeks to address the academic, emotional, and social needs of students (Barger, 2013, p. 7).

The historical roots of looping provide a starting point for the use of the instructional strategy in education. In addition to understanding where looping originated, a clear understanding of the benefits and controversies related to the instructional strategy provide a framework for the decision to implement the looping within a specific setting. Table 2 reviews the studies and key findings presented in the history of looping. The next section reviews the literature related to the benefits and controversies related to looping.

**Table 2: *History of Looping***

<b>Study</b>	<b>Year Published</b>	<b>Author(s)</b>	<b>Key Findings</b>
An Introduction to Waldorf Education	1980	Barnes, H.	Waldorf Schools utilizes the concept of looping to focus on building and sustaining long-term relationships between students and teachers. The fostering of such relationships increases student success in schools. The school design views the classroom as a second home for students. The students remain with the same teacher for the first eight years of schools.
The Whole in Every Part: Steiner and Waldorf Schooling	1989	Reinsmith, W. A.	The Waldorf School model calling for looping students and teachers together for multiple years was successful in Germany and has expanded around the globe.
Learning Together: A Manual for Multiage Grouping	1995	Bacharach, N.	Despite the benefits of multiage grouping used in early American education some experts including Horace Mann believed classrooms divided by grade level better served the needs of different aged children. The movement away from looping and the single room schoolhouses in American occurred during the era of reform and enlightenment.

Integrating Pastoral and Academic Work in Comprehensive Schools: A German Model	2000	Husbands, C., & Lang, P.	The team/small group model positively impacted schools, classes, and individual students' learning outcomes. The model offers a consistent and well-managed learning environment.
Looping: Creating Elementary School Communities	2001	Little, T., & Little, L.	Looping is a classroom design aimed to meet students' needs and foster student-teacher relationships. Looping started in the one-room schoolhouses in the United States and is the basis for the Waldorf Schools and the work of Rudolf Steiner.
The Looping Classroom: Benefits for Children, Families, and Teachers	2007	Hitz, M., Somers, M., & Jenlink, C.	Utilizes the Waldorf Schools, and Central Park East Elementary School as models for the benefits experienced by the class, individual students, and families.
The Impact of Looping on Academic and Social Experiences of Middle School Students	2009	Gregory, B.	The reemergence of the use of looping in American public schools occurred in the late 1980s and early 1990s around the same time the concerns with accountability and student achievement-based accountability were on the rise.
A Reflective Exploration of a Multiyear Elementary School Learning Experience	2011	Ganley, S.	The use of looping and multi-year classrooms at Central Park East Elementary School aimed to increase the community and connections among students in the classroom and use the improve student teacher relationships to enhance learning.

The Effects of a Looping Classroom Among Third Grade Students in an Urban District	2012	Danley, A.	The earliest development and implementation of the strategy of looping is linked to Rudolf Steiner and the Waldorf Schools in Germany. Steiner supported a multiyear classroom in which teachers and students were able to foster and maintain positive and productive relationships. The emphasis on long-term relationships would in turn lead to increased academic success for students.
Impact of Looping on Middle School Science Standardized Achievement Tests	2013	Barger, T.	The history of looping in the United States dates back to the single room schoolhouses of the 1800s in which students and teachers remained in the same classes throughout the students' education. This format dominated American schools until the education reforms led by Horace Mann.

### **Benefits and Controversies Related to Looping**

As the previous section highlighted, the strategy of looping is not a new concept and has international roots as well as in the early American single room schoolhouse. The practice of looping teachers and students together for multiple years is praised and critiqued alike by scholars as with all instructional strategies there are benefits and controversies. This section of the literature review provides the benefits and controversies related to the practice of looping. In addition to the benefits and controversies, this section will provide evidence for the support of looping through Maslow's Hierarchy of Needs Theory.

Kelly, Brown, Gittens, Taylor, and Zeller (1998) explain that looping is "a definite asset for addressing student behavior and social development" (p. 62). The practice of looping encourages students to form bonds with the teacher and with each another since they remain together for multiple years, developing a familial relationship within the classroom (Kelly et al.,

1998, p. 62). The strategy of looping creates a focus in the educational environment on developing the whole child. The relationships established through looping create an opportunity for the teacher to teach the whole student which leads to increased achievement (Nichols & Nichols, 2002, p. 19). Kohn (2010) describes the teaching of the whole child as a way to address emotional, social, and academic needs creating not only a good learner but also productive citizen (p. 2). Beaty-O'Farrell, Green, and Hanna (2010) affirm that education focused on the whole child fosters the development of citizenship skills with a respectful bond between the teacher and student, which decreases behavior incidents and increases academic achievement over time (p. 10).

Barger (2013) explains the importance of establishing a sense of belonging and providing the child with appropriate relationships within the educational environment in order to promote individual achievement (p. 20). The educating of the whole child as promoted by the use of the looping establishes an education environment that meets students' basic needs motivates them to focus on learning. Maslow's Hierarchy of Needs asserts that when a person's basic needs are not met the person's actions will be motivated by the desire to have these basic needs met (Learning Theories Knoweldgebase, 2010, p. 1). Within Maslow's Hierarchy of Needs, the top level is the need for self-actualization. Self-actualization refers to the stage "in which the individual can make full use of his or her talent and ability" (Dahl, 2015, p.630). For a child to reach the stage of self-actualization, all lower levels of needs must be meet. The strategy of looping creates a community of learners within the educational environment allowing for positive relationships between teachers, students, and parents. The relationships and community environment established by the implementation of looping "provides avenues for students to meet their deficiency level needs" (Barger, 2013, p. 21) and reach the self-actualization stage leading to

increased achievement. A study conducted by Booth (2011) found that students revealed their primary concerns as the following: physical development and growth, safety, academic, and esteem (p. 22). The concerns expressed by the students in Booth (2011) included the biological and physiological needs; safety needs, and esteem needs levels of Maslow's Hierarchy of Needs (p. 22). This study provided credibility to the use of Maslow's Hierarchy of Needs to support the power of looping as a means to meet the needs of students and improve overall academic achievement levels.

Despite the support for the strategy of looping and the benefits of utilizing an instructional model centered on whole child education, there are specific disadvantages related to looping. Simel (1998) conducted a study at the Fort Wayne Indiana Community School in 1997, and found that the teacher stated, "looping was demanding" (p. 334). Simel (1998) reported teachers found it challenging to develop new ways to motivate and encourage students while maintaining the positive community environment of the looping classroom (p. 334). Due to the nature of looping, students and teachers are together for multiple years, which made it difficult for teachers to use similar instructional strategies and materials as the students had already experienced those instructional experiences. Hanson (1995) also found the teachers "warned that the particular makeup of the class might adversely affect the group's potential to learn" (p.43). If the teacher and students within the looping classroom fail to develop a positive relationship and mutually respecting community environment, the additional years spent together could negatively affect students emotionally, socially, and academically.

Pecanic (2003) conducted a study at an elementary school located in a middle-class suburb of Los Angeles, California which has three classroom practicing looping (p. 15). Disadvantages of looping noted by Pecanic (2003) include an escalation of problems between

teacher and students who displayed personality conflicts, attachment made it difficult for teachers and students to transition at the end of the looping cycle, and students became overly familiar with the teachers and began to perceive them as friends (p. 9).

Along with the controversies related to instructional experiences and relationships between teachers and students, Vann (1997) explains that when teachers advance to a new grade level each year, teachers may experience difficulty mastering the curriculum of the new grade level (p. 41). The continued promotion of the teacher each year of a looping cycle decreases teachers' level of curriculum expertise which can negatively impact the mastery of the curriculum by students in the subsequent grades as well. Krogmann and Vant Sant (2000) found evidence that teachers demonstrate strengths and weakness in different areas of teaching and the curriculum and the strategy may prevent some students from being exposed to areas which their assigned teacher has weaknesses (p. 17). Hitz et al. (2005) highlighted the danger of a student's being placed with an ineffective teacher for two or more years having an extended negative impact on academic achievement (p. 84). In addition to the danger of a student being placed with an ineffective teacher for an extended period of time, Vann (1997) and Lincoln (1998) expressed concern for the possibility of a student's learning style being incompatible with the teaching style of the looping teacher. The incompatibility of teaching and learning styles over multiple years would impede the teacher's ability to deliver quality instruction for those students (Lincoln, 1998, p. 50).

As with any selected instructional strategy, there are benefits and disadvantages and looping is no different. Despite the disadvantages noted in the research regarding various instructional strategies, Boudett, Murnane, City, and Moody (2005) report schools are continuing to implement strategy for improving student achievement to meet the state and national

accountability mandates (p. 700). Looping is one of the instructional strategies schools are utilizing to improve student achievement. Table 3 provides an outline of the research presented in this section on the benefits and controversies related to looping. The next section will present literature on the student achievement-based accountability movement in education leading school to seek strategies to improve student achievement levels.

**Table 3: *Benefits and Controversies Related to Looping***

<b>Study</b>	<b>Year Published</b>	<b>Author(s)</b>	<b>Key Findings</b>
Getting to Know Multiyear Teaching	1995	Hanson, B.	Provides an overview of multiyear teaching. Includes discussion of drawbacks including the group of students in a given class may not work well together, teaching and learning styles may not be compatible, and separation at the end of the looping cycle can be difficult for teachers and students.
Looping: Looking Beyond the Hype	1997	Vann, A.	The level of curriculum mastery demonstrated by the teacher diminishes each year as the teacher is promoted to the next grade level. Continuing to move up in grade requires the teachers to learn and delivery instruction on different curriculum making mastery more difficult.
A Place to Hang Our Hats	1998	Kelly, P. A., Brown, S., Gittens, P., Taylor, C., & Zeller, P.	Looping at Langley Park-McCormick Elementary School in Hyattsville, MD has created a welcoming environment in which students, teachers, and parents have developed and sustained positive relationships. Looping provides a strategy for educating the whole child with focus on emotional, social, and academic development.

Multi-Year Instruction: Establishing Student- Teacher Relationships	1998	Lincoln, R. D.	Though multi-year instruction has benefits the disadvantages include the possibility of teaching and learning styles of the teacher and students being incompatible. The incompatibility of learning styles over multiple years can lead to negative effects on student achievement and the teacher's ability to provide quality instruction to all students.
Education for Building: Teaching Attitudes Toward Looping	1998	Simel, D.	Teacher interviewed by Simel described looping as demanding and the need to continually develop new instructional strategies for the students' year after year is difficult for teachers. Teachers reported the implementation of looping as a strategy that requires increased time and planning demands of teachers.
Enhancing Relationships and Improving Academics in the Elementary School Setting by Implementing Looping	2000	Krogmann, J., & Van Sant, R.	In educational settings teachers demonstrate strengths and weaknesses in relation to different aspects of the curriculum. One disadvantage to multiyear teaching is student remain with one teacher and may receive lower quality instruction in the areas the teacher has weaknesses unlike a student who receives instruction from multiple teachers who may compensate for the weaknesses of others.
The Impact of Looping Classroom Environments on Parental Attitudes	2002	Nichols, J. D. & Nichols, G. W.	The study reviewed the effects of looping on parent perceptions of the educational environment. The study found parents had positive perceptions compared to parents of students in non-looping classes. The parents viewed looping as a strategy that meet their students emotional, social, and academic needs by focusing on building relationships.

The Experience and Effects of Looping in the Elementary Classroom	2003	Pecanic, M.	The study examined the experiences and effects of looping on teachers, parents, and students in an elementary school setting. The study reported disadvantages of looping to include personality conflicts between students and teachers escalating over the time the classes are looped and students view of teachers changing from professional to friendly due to extended period of time spent together.
Teaching Educators How to Use Student Assessment Data to Improve Instruction	2005	Boudett, K., Murnane, R., City, E., & Moody, L.	In response to the state and federal mandates to increase student achievement levels on standardized test, schools are in need of strategies to improve outcomes. The research focuses on a workshop model to teach leadership and teachers how to use data to improve instruction.
The Looping Classroom: Benefits for Children, Families, and Teachers	2007	Hitz, M., Somers, M., & Jenlink, C.	Concerns related to looping include a child being placed with an ineffective teacher for two or more years. In addition, the potential for personality conflicts between the teacher and students concerned parents whose students were placed in looping classrooms. Lastly parents expressed concerns about their student being in a program with a teacher whom has different educational philosophies and beliefs than the parents for multiple years.
Classroom Management Strategies for Difficult Students: Promoting Change Through Relationships	2010	Beaty-O'Farrell, M., Green, A., & Hanna, F.	The challenges faced by teachers to manage their classrooms can be improved upon by developing personal relationships with students. When teachers use strategies focused on improving relationships the students become better prepared learners and citizens. Relationships are essential to improved student behavior and classroom management.

Progressive Education: Why It's Hard to Beat, But Also Hard to Find	2010	Kohn, A.	Defines progressive education as the use of traditional and thoughtful practices that teach the whole child and create a community within the schools. The practices involved in progressive education include multiyear teaching, hands-on learning, and mentoring of students. Addressing social, emotional, and academic needs of students leads to increase achievement.
Maslow's Hierarchy of Needs at LearningTheories.com	2010	Learning Theories Knowledgebase	Maslow's Hierarchy of Needs consists of five levels. The five levels of needs include physiological, safety, belongings, esteem, and self-actualization. All lower level needs must be met before the higher needs including self-actualization can impact actions and behavior.
This They Believe: Young Adolescents Reveal Their Needs in School	2011	Booth, M.	The study interviewed middle school student regarding their perceived needs. Each of the needs identified by the students aligned with the levels of needs outlined by Maslow's Hierarchy of Needs. As the students progressed through middle school their understanding of their needs became more sophisticated.
Impact of Looping on Middle School Science Standardized Achievement Tests	2013	Barger, T.	Maslow's Hierarchy of Needs affirms that student's basic needs must be met for the student to be able to focus and succeed in school. Schools need to be aware of students needs and which ones are not met in order to fulfill those needs and allow the student the opportunity to succeed. Looping establishes the long-term relationship between teachers and students to assist in knowing and educating the whole child.

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Abraham Maslow: The SAGE Encyclopedia of Theory in Counseling and Psychotherapy	2015	Dahl, H.	Abraham Maslow's Hierarchy of Needs consists of five levels. Each subordinate level must be met prior to addressing the next level. Meeting the lower level needs of students is required before the level of self-actualization can take place.
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### **Student Achievement-Based Accountability Movement**

The literature presented in the sections above focused on the history, benefits, and controversies related to the specific strategy of looping. To frame the current state of educational reforms which has led to schools returning to strategies such as looping to improve student achievement, a historical background is necessary. The literature presented in this section will trace the historical roots of student achievement-based accountability in the United States as well as the measures utilized in North Carolina to report student achievement and predict future achievement levels.

The Tenth Amendment of the United States Constitution delegates the responsibility of education to the states but the federal government's involvement has steadily increased over the past three decades (United States Constitution, amend X). As federal involvement in education increases, policies and legislation call for increasing accountability of schools and specifically individual student performance within America's schools. Throughout America's history, the focus on education by the federal government came during times of national concern or crisis. Dating back to President Johnson's Administration and his declared War on Poverty is when the Elementary and Secondary Act of 1965 (ESEA) was signed, providing federal funding for general education to increased opportunities for all students. The initial plan to federally fund general education in the United States was justified by Congress utilizing the General Welfare

Clause (U.S. Const, art. I, § 8). The funding provided by ESEA set a precedent for future federal legislation related to funding and involvement in education.

Though ESEA continued to provide general education funding in America, the national focus on education faded to the background following the signing of the bill and the end of the Johnson Administration. Until the release of the publication *A Nation at Risk* (National Commission on Excellence in Education [NCEE], 1983) America failed to take notice and express nationwide concern for the state of America's public education system. *A Nation at Risk* painted a devastating depiction of education in America. The report described America's education system as "a rising tide of mediocrity that threatens our very future" (NCEE, 1983). The report stressed the importance of improving the nation's education system and the fate of those who are not provided with essential knowledge. The report asserts,

The people of the United States need to know that individuals in our society who do not possess the levels of skill, literacy, and training essential to this new era will be effectively disenfranchised, not simply from the material rewards that accompany competent performance, but also from the chance to participate fully in our national life. A high level of shared education is essential to a free, democratic society and to the fostering of a common culture, especially in a country that prides itself on pluralism and individual freedom. (NCEE, 1983)

In 1984 following the release of the report, President Reagan was the first president to announce national education goals. In alignment with the President's education goals, the National Governors Association (NGA) announced in 1985 a decrease in regulation of state education systems for any district willing to be held accountable for student progress relate to specific goals (Vinovskis, 1999, p. 7). The official movement toward trading control of public education for accountability began across the country and would continue with the passing of future federal legislation on education.

Following the precedent set by Secretary of Education Terrel Bell under the Reagan Administration, every administration since has introduced and maintained national education goals. As a result of the Charlottesville Education Summit, President Bush established six national education goals including decreasing dropout rates, adding science to the elementary school curriculum, increasing opportunities for students to take foreign languages, and increasing national scores on the National Assessment of Educational Progress (NAEP) (Vinovskis, 1999, p. 25). Later in the 1990s, ESEA would be re-authorized during the Clinton Administration as the Improving America's School Act of 1994. The reauthorization of ESEA placed increased emphasis on individual student performance and held schools accountable for achievement results of all students with a focus on students from lower income families.

In the same fashion as previous presidents, President George W. Bush's Administration reauthorized ESEA as the No Child Left Behind Act of 2001 (NCLB). The third reauthorization set requirements in place for the use of testing of students to measure achievement level. The results of the testing and student outcomes were required for states to benefit from the federal funding. Unlike previous version of ESEA, NCLB implemented sanctions for schools failing to meet what was defined as Adequate Yearly Progress (AYP). In addition to requirements to meet AYP, NCLB mandated states "to administer annual assessment in reading and language arts and math, at a minimum, to all students in grade levels three through eight" (Mills, 2008, p. 12). The results of the annual assessments and progress toward meeting AYP gave specific attention to student subgroups. NCLB focused attention on improving the achievement of student subgroups including "economically disadvantaged students, students from major racial and ethnic groups, students with disabilities, and students with limited English proficiency" (NCLB, 2001).

As states across the nation took action, North Carolina also developed plans to meet the new federal accountability and student assessment mandates put in place by NCLB. In response to the requirement to assess student achievement levels annually, North Carolina developed the NC EOG for students in grades three through eight. The NC EOG assess students in the areas of English Language Arts, Reading, Mathematics, and Science. The NC EOGs are “specifically aligned to the North Carolina *Standard Course of Study* and include a variety of strategies to measure the achievement of North Carolina students” (NCDPI, 2014, p. 3). NCDPI (2014) indicates that the results of the NC EOG are utilized to compute “school and teacher growth as well as performance composites” (p. 3) in addition to being “used in determining Annual Measureable Objectives” (p. 3) as required by NCLB.

Along with measuring proficiency levels of students by utilizing NC EOG achievement data, North Carolina utilizes a Valued-Added Model (VAM) to measure the growth rate of students, or the rate at which students acquire a year’s worth of knowledge. VAMs are utilized in North Carolina to both measure student growth and predict future performance levels. Sloane, Oloff-Lewis, and Kim (2013) explain, “static average student performance measures are poor indicators of school performance and tend to reflect input characteristics...” (p.39). VAMs use a combination of historical student performance data on state assessment to predict future achievement levels on state assessments. Though VAM provide a measure of growth in addition to a one-time assessment of student performance, VAMs are not without flaws. VAMs measure growth, which just indicates that a student has learned what they should learn in a single year with an average teacher. As explained by Fierro (2014) “students do not have to improve in performance from year to year in order to grow-they simply have to maintain their learning position relative to others and at about the same level as they have performed previously” (p. 55-

56). The individual student achievement and growth rates measured utilizing VAM are incorporated into North Carolina's formula to develop growth targets as required by NCLB. The North Carolina accountability and growth formula targets were developed through the ABC's of Public Education implemented in North Carolina during the 1997-98 school year (NCDPI, 1999).

As North Carolina and states across the nation adopted plans and programs for measuring student achievement levels and progress toward annual goals, school districts and schools were tasked with selecting and implementing strategies to improve achievement levels and meet state set goals. Table 4 reviews the literature related to student achievement-based accountability movement that led states and schools to taking action to improve student achievement levels. The next section will provide a review of the literature related to how the specific strategy of looping relates to student achievement.

**Table 4: *Student Achievement-Based Accountability Movement***

<b>Study</b>	<b>Year Published</b>	<b>Author(s)</b>	<b>Key Findings</b>
United States Constitution, 10 <sup>th</sup> Amendment	N/A	United States	The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.
United States Constitution, Article I Section 8	N/A	United States	To make laws which are necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this Constitution in the government of the United States, or in any department or office thereof.

Elementary and Secondary Act of 1965	1965	Elementary and Secondary Act of 1965	First federal legislation providing general funding for primary and secondary schools in the United States.
A Nation at Risk: The Imperative for Education Reform	1983	National Commission of Excellence in Education	A report on the state of education in the United States and the need for reforms. The report presented American schools in a state of crisis and in need of reform.
North Carolina's ABC's of Public Education	1999	North Carolina Department of Public Instruction	Annual testing program and accountability efforts implemented during the 1997-98 school year in North Carolina. The program considers individual student achievement levels and value-added measures.
Mind in Society: The Road to Charlottesville: The 1989 Education Summit	1999	Vinovskis, M. A.	Essay regarding the state of education in America in the 1970s and 1980s along with decisions from the meeting between President Bush and the Nation's Governors at Charlottesville Education Summer in September 1989. The meeting and past movement to increase federal involvement in education led to national education goals and increased accountability for educational outcomes.
No Child Left Behind Act of 2001	2001	No Child Left Behind	Reauthorization of ESEA calling for increased accountability of individual student achievement and adequate yearly progress. Introduced sanctions for schools failing to meet required progress toward proficiency goals.
A Legislative Overview of No Child Left Behind	2008	Mills	Provides a detailed overview of each section of NCLB legislation. Focusing on the definitions of AYP and student subgroups to increasing understanding of federal requirements for funding.

Value-Added Models of Teacher and School Effectiveness in Ireland: Wise or Otherwise?	2013	Sloane, F. C., Oloff-Lewis, J., & Kim, S. H.	Examines the value-added model utilized in the United States and provides a critique of how the model
Does How Students are Assigned to Classrooms Matter? An Examination of Relative Achievement in Tracked and Untracked Middle Grades Language Arts Classrooms	2014	Fierro, C.	Explains how VAM can be deceiving when determining student growth. VAM can show perceived growth as long as students can maintain their achievement level relative to other students and continue to progress at a consistent level.
Interpretive Guide to the WinScan Score Reports for the North Carolina End-of-Grade Assessment: 2014-15	2014	North Carolina Department of Public Instruction	Provides an overview of the purpose of the NC EOG test and confirms the alignment of the test to <i>North Carolina Standard Course of Study</i> . Provides details for the interpreting of student scores and reports provided on student achievement levels to school leaders.

## The Achievement Gap

In nearly half-century since *Brown v. Board of Education*, minorities have made substantial progress both in terms of degree attainment and academic achievement, as measured in the National Assessment of Education Progress. The data also make it clear, however, that substantial challenges remain before the ideal of achieving high educational standards for all is a reality. (Ready, Edley, and Snow (Eds.), 2002, p. 24)

Though achievement results indicate that students from various backgrounds are achieving at higher levels there is still a discrepancy between the achievement levels of minority students and their Caucasian counterparts. Minority students are more likely to score below proficiency levels on achievement assessments in reading, math, and other subjects. The disparity which exists between the achievement levels of minority students and Caucasian students on standardized achievement assessments is referred to as the achievement gap. Ready, Edley, and Snow Eds. (2002) explain the achievement gap is being magnified by rapidly increasing minority populations and the “growing importance of education to individuals’ financial security” (p. 16).

In addition to population shifts and the financial impact of educational achievement, federal legislation has exerted increased pressure on schools to improve achievement levels for all students. The passage of legislation such as No Child Left Behind (NCLB) and Race to the Top emphasized the importance to not only raise achievement levels for all students but particularly for minority student subgroups who have consistently performed at levels below their Caucasian counterparts (Boykin & Noguera, 2011, p. vii). Despite the mandates imposed by the federal government through legislation little progress has been made to narrow or close the achievement gap. Boykin and Noguera (2011) proclaim that “if we are not willing to acknowledge and confront the numerous barriers to the opportunity to learn that many poor and minority children experience, greater progress in reducing racial disparities will be difficult to bring about” (p. 7).

Researchers (e.g., Ladson-Billings, 1995; Konrad, Helf, & Joseph, 2011; Wilkins, 2015) have developed and studied instructional strategies, engagement techniques, and culturally relevant pedagogy aimed at improving achievement levels of minority students and closing the achievement gap. Ladson-Billings (1995) defines culturally relevant pedagogy as teaching centered on “three criteria or propositions: (a) students must experience academic success; (b) students must develop and/or maintain cultural competence; and (c) students must develop a critical consciousness through which they challenge the status quo of the current social order” (p. 160). Through these three propositions Ladson-Billings (1995) encourages educators to utilize students’ culture as a lens through which the student can be successful, learn about and celebrate their culture, as well as use their knowledge and education to solve problems and seek to decrease inequities and injustices (p. 161-162). Lord (2017) conducted research in an urban North Carolina middle school to assess best practices and instructional strategies to narrow the

achievement gap. The research revealed student engagement, social interaction, differentiated activities, and varied assessment format contributed to increased math achievement scores for minority students and a narrowing of the achievement gap (Lord, 2017, p. 100-101). The best practices highlighted by Lord (2017) align with Ladson-Billings (1995) belief that instruction should engage students, allow them to experience success through various methods of assessment, and encourage social interaction and action. The qualitative comparative case study conducted by Wilkins (2015) revealed similar instructional strategies that have a positive impact on narrowing the achievement gap as Lord (2017). Wilkins (2015) study of two North Carolina elementary schools indicated minority student achievement scores increased when teachers utilized a combination of whole group instruction, cooperative groups, learning stations, peer tutoring, and individual tutoring (p. 118).

In conjunction with the classroom-based instructional strategies which yielded increased achievement levels for minority students, Wilkins (2015) found other factors which could be contributing factors to the narrowing of the achievement gap. The schools participating in the study reported a positive impact from increased involvement from minority students' parents, increased employment of veteran board-certified teachers at the schools reporting decreases in their achievement gap and decreased racial segregation of individual classroom populations (Wilkins, 2015, p.122). Ladson-Billings (1995) three-year study observing culturally relevant pedagogy found the practice best implemented when teacher's specific traits were present (p. 162). Ladson-Billings (1995) indicates that "how they thought about themselves as teachers and how they thought about others, how they structured social relations within and outside of the classroom, and how they conceived of knowledge" impacted the teacher's ability to practice culturally relevant pedagogy (p. 162-163). Each of the teachers observed by Ladson-Billings

(1995) had a passion for teaching, chose to teach low-income minority students, believed all students can learn and be successful, engaged in meaningful relationships with students and the community, and integrated culture into the curriculum (p.163). In the above-mentioned studies, the narrowing of the achievement gap through increased achievement levels of minority students required a multifaceted approach combining instructional methods, specific faculty traits, and external factors such as parental involvement. Due to the multiple dimensions of the achievement gap, narrowing or eliminating the gap requires a multidimensional approach.

Research has been conducted and instructional strategies developed to improve the level of achievement for minority students at all grade levels. Despite such efforts and minimal gains in achievement levels for students in the African American and Hispanic/Latino subgroups, the achievement gap persists and remains “strikingly similar to what it was 20 years ago” (Boykin & Noguera, 2011, p. 13). Konrad, Helf, and Joseph (2011) emphasize that changes in instructional strategies alone will not result in narrowing of the achievement gap, rather educators need to focus on using instructional time efficiently in order to impact the persistent achievement gap (p. 68). Konrad et al. (2011) explain “to be most efficient, educators must take into consideration factors when planning, delivering, and evaluating their instruction” (p. 68). Planning efficiency requires educators to get organize all elements of the educational environment to include materials, routine, and procedures (Konrad, Helf, & Joseph, 2011, p.68). Teachers should also be clear on the standards and concepts to be taught as well as clearly express their expectations for how students are to behave and interact to create an environment conducive to learning (Konrad et al., 2011, p. 69). Instructional efficiency also requires review of the method through which the teachers delivers instruction to synch students’ needs and learning type with instruction (Konrad et al., 2011, p. 70). The final element of instructional efficiency as described by Konrad et al.

(2011) is the evaluation of instruction which should be ongoing in order to inform the teacher if students are making adequate progress or not (p. 72). Konrad et al. (2011) explains,

If students are not making adequate progress, teachers can determine if students need a different type of instruction, an increase in intensity (e.g., more practice), or additional assessments to identify limited prerequisite skills. If students are making adequate progress, these data give the teacher assurance that the teaching strategies he or she is using are having a positive effect. For students who are progressing at a faster rate than expected, these data may encourage teachers to raise expectations (e.g., set higher goals, provide enrichment), thus increasing learning and instructional efficiency. (p.72)

Far too often in the age of accountability and standardized tests focus is placed on the end of year standardized assessments to measure progress of students instead of emphasizing ongoing evaluation to redirect instruction throughout the school year. A teacher armed with culturally relevant pedagogy and best practices may fail to be effective if instructional efficiency such as ongoing evaluation of instruction is not also considered and implemented to ensure the best use of instructional time.

With the nationwide focus on increasing student achievement and narrowing the achievement gap becoming more urgent each year it is imperative for educators and those in positions of educational leadership to be aware of and implement research-based instructional practices but also invest resources in the development and improvement of the educators charged with delivering instruction. Table 5 reviews the literature related to the achievement gap and instructional strategies aimed at narrowing and eliminating the achievement gap. The next section will provide a review of the research literature related to looping and student achievement.

**Table 5: *The Achievement Gap***

<b>Study</b>	<b>Year Published</b>	<b>Author(s)</b>	<b>Key Findings</b>
But That's Good Teaching! The Case for Culturally Relevant Pedagogy	1995	Ladson-Billings, G.	Defines the three elements of culturally relevant pedagogy to include academic success, cultural competency, and critical consciousness which are essential to academic success for African American students. In addition to highlighting character traits and beliefs held by teachers who are successful in teaching African American students.
Achieving High Educational Standards for All	2002	Ready, T., Edley Jr., C. & Snow, C.E. (Eds.)	Conference summary addressing advancement made in the education of minorities and what strategies and best practices are best designed to continue improving education for minorities and closing the achievement gap. Specific attention given to addressing how educational policy impacts minority students and what research-based practices are leading to improvement in achievement.
Creating the Opportunity to Learn: Moving from Research to Practice to Close the Achievement Gap	2011	Boykin, A.W. & Noguera, P	Highlights the importance of understanding the achievement gap is multi-dimensional and the approach to narrowing a closing the gap must be as well. The authors also stress the fact that many of the strategies used to improve achievement are failing because our schools have normalized failure and are no longer disturbed by the achievement gap.
Evidence-Based Instruction Is Not Enough: Strategies for Increasing Instructional Efficiency	2011	Konrad, M., Helf, S.& Joseph, L.M.	Narrowing of achievement gap requires educators to not only deliver effective instruction but to deliver efficient instruction to maximize instructional time.

Different Instructional Strategies to Close the Achievement Gap for African American Students	2015	Wilkins, L.	Comparative case study that found increased achievement for African American elementary students when teachers utilized instructional strategies such as data driven assessment, coaching, scaffolding, and summarizing. The narrowing of the achievement gap was also attributed to increased parental involvement, more experienced teaching staff, more Nationally Board-Certified teachers, and more equitable racial composition of classes.
Instructional Strategies and Best Practices for Improving the Achievement Gap in Mathematics: An Exploratory Case Study	2017	Lord, J.	Progress made to narrow the math achievement gap was observed when teachers implemented specific planning strategies and instructional model, encouraged student engagement, differentiated activities, and exhibited strong classroom management skills. These instructional strategies coupled increase teacher continuity, parent involvement, and sufficient instructional time assisted in narrowing the achievement gap.

### **Research Related to Looping and Student Achievement**

In response to federal legislation and increased accountability for student achievement scores, some school districts and individual schools have hypothesized that the implementation of looping will increase student achievement outcomes. Researchers have conducted numerous studies measuring the impact of the strategy of looping on student achievement outcomes. This section of the literature review investigates ten quantitative studies examining the relationship between looping and student achievement levels in various school settings, which have implemented the strategy of looping to improve student outcomes.

Hampton and Mumford from Cleveland State University, and Bond from University of North Carolina at Greensboro (1998) conducted a joint research project investigating the impact of Project FAST (Families Are Students and Teachers) in Cleveland, Ohio on student achievement levels (p. 410). Project FAST implemented the strategy of looping for students in kindergarten through second grade along with providing parent education opportunities to assist parents in supporting their child's education (p. 413). The intent of Project FAST was to establish and foster positive relationships between teachers and families and provide family education opportunities to aid parents in supporting their child's academic work. Hampton, Mumford, and Bond (1998) conducted a quantitative study utilizing the causal comparison of the achievement scores for students assigned to Project FAST with students assigned to traditional classes (p. 421). The study concluded that participants in Project FAST experienced improved achievement levels in reading, math, and language arts (p. 413). Hampton, Mumford, and Bond (1998) contributed the improved academic achievement to a combination of looping and parent education programs, stating, "that when time and commitment are devoted to strengthening relationship between home and school, positive results occur" (p. 426).

In a study conducted by Rodriguez and Arenz (2007) looping was implemented to measure the social, emotional, and academic benefits to students and teachers. The mixed methods study conducted at Fresno Unified School District elementary school consisted of parent, teacher and student surveys in addition to examining academic achievement levels in language arts classrooms. The quantitative analysis in the study concluded that students assigned to looping classrooms outperformed students assigned to traditional classrooms (Rodriguez & Arenz, 2007). The analysis reported significant differences in the student achievement scores in language arts, especially in the areas of writing strategies, vocabulary, and reading (Rodriguez &

Arenz, 2007). In particular, the second-grade students assigned to looping classrooms show growth beyond their non-looping peers when taking the Grade Level Assessment of Standards for the first time (Rodriguez & Arenz, 2007). In addition, the qualitative findings indicated that looping fostered long-term student teacher relations (Rodriguez & Arenz, 2007). The implementation of looping at the selected elementary school indicated support for students socially, emotionally, and academically.

Also, in 2007 Snoke conducted a study investigating “looping: the impact of a multi-year program on the academic progress, retention, and special education placement of students in two south central Pennsylvania schools”. The study utilized a comparison and regression analysis to compare the achievement, retention, and special education placement of students in looping classrooms compared to students in traditional classrooms (Snoke, 2007, p. 66). Analyzing math and reading scores on the Pennsylvania System of Schools Assessment for third, fifth, and eighth grades in looping and non-looping classrooms provided a basis for comparison. The study concluded that there was no statistically significant difference in achievement score of students assigned to looping classrooms and students in traditional non-looping classrooms (Snoke, 2007, p. 85). Snoke (2007) also conducted a comparison based on student gender, socio-economic advantage and found no statistically significant difference in student achievement levels for math or reading (p. 86)

As indicated by Snoke (2007) the study conducted by Hertich (2009) also reported the strategy of looping has no statistically significant impact on math and reading achievement levels (p. 82). Hertich (2009) reviewed a two-year looping program in which students were assessed utilizing the STAR math and reading test (p. 41). The “quantitative, non-experimental, comparative study using ex-post facto data” (Hertich, 2009, p. 41) compared achievement score

means for students in looping and non-looping classrooms. The study also reviewed the achievement data for student subgroups including gender, race, and socioeconomic status. Though the study indicated positive impact on all subgroups of students in the looping classroom compared to their peers in the non-looping classrooms, none of the differences were statistically significant. Hertich (2009) attributed the positive impacts to a combination of the looping students having higher achievement levels prior to the two-year looping program and the impact of looping (p.86). Though the study compared student achievement based on student subgroups, only students in the same subgroups were compared, no analysis was conducted to compare minority subgroups with their Caucasian peers. The lack of comparison across subgroups prevents any conclusions being drawn in relation to looping and its impact on the achievement gap for specific groups of students.

Nessler (2010) and Danley (2012) also found no statistically significant differences between the reading and math achievement levels of looping students compared to students in non-looping classrooms. Nessler (2010) conducted an independent t-test to analyze the standardized test scores for middle school students assigned to a looping classroom compared to middle school students assigned to non-looping classrooms (p. 49). The study compared math and literacy achievement rates and reported a “slightly higher mean score” (Nessler, 2010, p.84) for students in looping classrooms but not significant enough to conclude that the increase in score was related to the strategy of looping. Danley (2012) reported similar results to Nessler (2010). Danley (2012) chose to specifically focus on the achievement scores of third grade students in looping and non-looping classes (p. 84). Results from the quantitative analysis indicated positive achievement gains for both looping and non-looping students but failed to provide evidence that looping students performed significantly higher than non-looping students

(Danley, 2012, p. 86). Along with the quantitative analysis Danley (2012) administered parent surveys to measure perceptions related to student achievement levels (p.85). The parent perceptions of students' academic achievement mirrored the quantitative results indicating a lack of statistically significant difference between the parents of looping and non-looping students.

While Caauwe (2010) indicated no significant difference in reading achievement levels of students assigned to looping classrooms, math achievement levels were significantly higher than students assigned to non-looping classrooms (p.89). The study analyzed the achievement levels for elementary students in Minnesota participating in the Stanford Achievement Test Series 10 (SAT 10). Applying a comparison regression model, the mean scores were analyzed to determine if a significant difference existed between the SAT 10 reading and math achievement levels between looping and non-looping students (Caauwe, 2010, p. 57). Though the results indicated significant improvement in SAT 10 math achievement levels for students experiencing looping, the researcher suggests, "conducting a similar longitudinal study involving a larger number of students" (Caauwe, 2010, p. 89) to validate the findings.

Three of the most recent research studies conducted to measure the impact of looping on student achievement levels continued to present mixed results as the other studies presented. Barger (2013) concluded through a comparison of science achievement scores that looping had no impact on science achievement (p. 87). The study analyzed achievement levels as well as the retention of content knowledge for science students assigned to looping and non-looping classrooms. In the case of achievement and retention levels the assignment to a looping classroom had no statistically significant impact (Barger, 2013, p. 86). Barger (2013) presented a different level of analysis by reviewing science achievement levels over the traditional math and reading assessments. Similar to the study conducted by Barger (2013), Drew (2014) was unable

to conclude that independently the strategy of looping increased student achievement levels (p. 110). In the study conducted by Drew (2014) the assignment to a looping classroom was combined with extended learning time (p.10). The quantitative analysis found the program combining looping and extended learning time resulted in a positive statistically significant impact on student achievement levels in math and reading (Drew, 2014, p.109). Though significant improvements were noted in student achievement levels, further research and data collection would have to be conducted to determine if looping independent of the extended learning time had an impact.

The most recent study conducted in rural and urban South Carolina elementary schools indicated positive significant results on student achievement in math and reading for students assigned to looping classrooms (Washington, 2015, p. 5-6). Utilizing a causal comparative model Washington (2015) compared the Measure of Academic Progress (MAP) achievement scores of students assigned to looping classrooms with their peers assigned to traditional classrooms (p. 55-56). Each year except the initial second grade school year, the students in looping classrooms performed significantly higher on the reading and math MAP (Washington, 2015, p. 84-85). Washington (2015) attributed the lack of significant difference between the scores of looping and non-looping students to the use of audio and visual aids during the MAP to assist young learners who may not have the skills necessary to complete the assessment (p. 90). Despite the lack of significant impact of looping in the initial year, looping was attributed as a significant factor in producing positive student achievement outcomes.

The results of quantitative research examining the relationship between looping and student achievement outcomes has produced mixed results. Some of the cases indicated a significant difference between the achievement levels of students in looping classrooms

compared to their peers assigned to traditional classrooms while others concluded that looping had no significant impact on achievement levels. This study seeks to fill a gap in the research related to looping and student achievement by providing an analysis of the impact of looping on specific student subgroups. This study also adds to the limited quantitative research related to looping through a mixed methods approach. Table 6 provides a summary of the research related to the relationship between looping and student achievement.

**Table 6: *Research Related to Looping and Student Achievement***

<b>Study</b>	<b>Year Published</b>	<b>Author(s)</b>	<b>Key Findings</b>
Parent Involvement in Inner-City Schools: The Project FAST Extended Family Approach to Success	1998	Hampton, F. M., Mumford, D. A., & Bond, L.	The study found that participants of Project FAST experienced improved achievement levels in reading, math, and language arts in comparison to students not in the program. The researcher concluded that looping in conjunction with the parent education and outreach programs contributed to improvements in student achievement levels.
The Effects of Looping on Perceived Values and Academic Achievement	2007	Rodriguez, C., & Arenz, B.	Significantly different language arts achievement scores were recorded for elementary school students assigned to looping classroom in comparison to peers in non-looping classrooms. The study also concluded that the long-term relationships form in a looping classroom support students' socially, emotionally, and academically.

Looping: The Impact of a Multi-Year Program on the Academic Progress, Retention, and Special Education Placement of Students in Two South Central Pennsylvania Schools	2007	Snoke, J. M.	Through a causal comparison and regression analysis the study concluded that there was no statistically significant difference between Pennsylvania state math and reading test for student's assignment to looping classrooms compared to those in non-looping classrooms.
The Academic Influences of Second and Third Grade Looping in One Delaware School District	2009	Hertich, L. L.	An ex-post-facto quantitative study comparing student outcomes on the STAR reading and math assessment for students in a two-year looping program in comparison to peers in non-looping programs. The study found positive impacts on STAR achievement for all looping student and student subgroups compared to their peers in non-looping classes. Though positive the results were not statistically significant.
The Impact of Looping Practices on Student Achievement at a Minnesota Inner City Elementary School	2010	Caauwe, C. M.	The researchers compared reading and math achievement scores on the Stanford Achievement Test Series 10 for students in a school practicing looping and students in a non-looping school. The study utilized a causal-comparison regression model and found no statistically significant difference in reading scores. Though statistically significant difference was noted in math scores. Students in the looping class performed significantly higher on the math assessment than non-looping students.

The Impact of Curriculum Looping on Standardized Literacy and Mathematics Test Scores	2010	Nessler, R.	Ex-post-facto, quantitative research study middle school standardized test scores for students assigned to a looping class were compared with peers assigned to a non-looping class. The researcher conducted an independent t-test and concluded no statistically significant difference exist between the reading and math scores of students in looping classes compared to students in non-looping classes.
The Effects of a Looping Classroom Among Third Grade Students in an Urban School District	2012	Danley, A. J.	In the comparison of AIMS web reading and math assessment scores for third grade students in looping compared to non-looping classrooms, the researcher found no statistically significant differences.
Impact of Looping on Middle School Science Standardized Achievement Tests	2013	Barger, T. M.	An independent t-test analysis of PSSA in science indicated there was no statistically significant difference in achievement scores for students in a looping program compared to students in a non-looping program. Looping did not contribute to science achievement levels.
Looping and Extended Learning Time: Effects on Secondary Academic Achievement in At-Risk Adolescents	2014	Drew, J. M.	Utilizing RDD the study found statistically significant positive difference in student achievement levels in math and reading for students enrolled in the looping and extended learning time program compared to students not enrolled. Though results were statistically significant the study cannot conclude if independently looping or extended learning time impacted achievement levels. The study concluded the combined program impacted achievement levels.

The Effect of Looping on the Reading and Math Grade Equivalencies of Second, Third, Fourth, and Fifth Grade Students	2015	Washington, A.	Through causal comparison model the study found statistically significant positive difference in the percentage of students at or above grade level in looping classes compared to non-looping classes. The study also found statistically significant positive difference in reading and math grade level equivalences for all grades except second in looping classes.
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Along with the quantitative research presented, extensive qualitative research studies have been conducted examining the impact student assignment to looping classrooms. The qualitative studies provide findings that affirm the use of the strategy of looping. Table 7 provides a brief overview of five recent qualitative studies on looping in elementary school settings.

**Table 7: Recent Qualitative Research on Looping in Elementary School Settings**

Study	Author & Year	Study Type	Type of Data Analyzed	Key Findings
Experiences of Looping for Students with Learning Disabilities: A Phenomenological Case Study	2011 Brown,	Phenomenological Case Study	Interview, Questionnaire, Examination of Student Artifacts, & Direct Observation	Looping positively impacted social and emotional skills for students with learning disabilities. The study did not find significant improvements in academic achievement or speech improvements.
Studying the Looping Cycle in Early Childhood Public Education: A Multiple Case Study Analysis	2014 Thomas , K.A.	Multiple Case Study	Focused Interviews	Study found teachers lacked knowledge about the practice of looping but found looping to be beneficial strategy for students.
Exploring Teachers' Narratives About	2014 Nunn,	Narrative, Critical	Face-to-Face Interviews,	Looping can have positive impacts but not all classes can loop.

Satisfaction and School Administrator Support After Involuntarily Transfer to a Looping Classroom	C.	Event Model	Field Notes, Reflections	Teacher and student demographics impact the success of looping and a teacher's job satisfaction when looping. Familiarity with students makes year two easier for teacher preparation.
The Prairie Valley Project: Development of a Rural, School-Wide, Multiage Elementary Classroom Design	2014 Bailey, G. J.	Explanatory Multiple Case Study	Survey	Teachers and parents demonstrated support for the transition to multiage classrooms, but in comparison teachers showed less support than parents.
Evaluating a Looping Model in a Departmentalized and Teamed School to Improve Rigor, Relevance, and Relationship Structures	2015 Weaver, J. J.	Action Research	Interviews & Surveys	Looping improved rigor, relevance, and relationship building structures for students when departmentalized teams and looping was utilized.

### Gaps in Literature

A majority of the literature and research related to looping that current exist is qualitative and focuses on the social, emotional, and relational impacts of the strategy (Chirichello & Chirichello, 2001; Pecanic, 2003; Nicholas & Nicholas, 2002; Hintz et al., 2007; Brown, 2011; Thomas, 2014; Nunn, 2014; Bailey, 2014; Weaver, 2015). Most of the current research available on the strategy of looping is framed within the re-emergence of looping in American schools since the late 1980s and early 1990s. Though the focus of looping research has been qualitative, in recent years quantitative and mixed methods studies have been conducted examining the relationship between looping and students' achievement levels (Snoke, 2007; Hertich, 2009; Nessler, 2010; Barger, 2013; Drew, 2014; Washington, 2015). Within the qualitative and quantitative research related to the topic of looping there are gaps, which are problematic for the

assessing the validity of looping as a strategy to improve student achievement. Four specific gaps exist in looping research, which call for additional studies and exploration. The gaps include a lack of attention to student subgroups, no analysis of the impact of looping on the achievement gap, attention primarily focused on math and reading achievement levels, and limited diversity in the school sites selected for analysis.

While one of the quantitative studies mentioned offers a limited analysis of the impact on achievement levels for specific student subgroups such as gender, ethnicity, and socioeconomic status, the analysis was limited to the comparison of identical student subgroups in looping and non-looping classes (Hertich, 2009). In addition to the limited consideration of student subgroups, none of the looping studies reviewed specifically addressed the achievement gap and the impact looping may have on narrowing the gap in outcomes which exist between Caucasian students and minority peers. Also absent from the research is the impact on looping in subject areas other than math and reading. The study conducted by Barger (2013) was the only research focused on science achievement instead of reading and math. The lack of diversity in site selection is also noted as a majority of the studies have been conducted in traditional elementary school settings (Hampton, Mumford, & Bond, 1998; Rodriguez & Arenz, 2007; Caauwe, 2010, Danley, 2012). Few studies utilized middle and secondary sites for conducting research (Barger, 2013 and Drew, 2014). There was no mention in any of the research studies of school sites having magnet or other school choice options.

In previous studies the researchers have recommended that future research should focus on expanding the collection of looping research and addressing some of the gaps. Rodriguez and Arenz (2007) and Snoke (2007) recommend further investigation into the overall impact of looping on student achievement gains. Caauwe (2010) and Barger (2013) recommended studies

that provide increased control for extraneous variables and account for student demographics (p. 90). Washington (2015) identified a need for research “to investigate whether looping classes play a critical role in the statistically significant difference in grade equivalency levels for students” (p. 91). Several researchers recommended additional studies be conducted that are more longitudinal in nature and address the number of years students are assigned to a looping classroom (Nessler, 2010; Caauwe, 2010, Barger, 2013; Washington, 2015). Conducting studies to address the gaps in current looping research provides an opportunity for additional understanding of the potential impact the strategy can have on student achievement levels.

### **Chapter Summary**

The literature reviewed in this chapter provides historical background of looping as well as a review of quantitative and qualitative research previously conducted regarding the impacts of looping. Following the re-emergence of looping in the United States, the study designs and results have remained fairly constant (Snock, 2007; Hertich, 2009; Caauwe, 2010; Nessler, 2010; Barger, 2013; Drew, 2014; Washington, 2015). Researchers have utilized similar models of causal comparison analysis and have concluded in most cases that looping has a positive impact but not a statistically significant impact on student achievement levels. In addition to the consistency in looping research regarding methods and outcomes the researchers are in agreement that looping has other non-academic based benefits for students including positive impacts on student social, emotional, and relational development. Proponents and opponents of looping agree there are also potential consequences related to the strategy of looping which include poor teacher quality impacting students for multiple years, incompatible personalities, and difference in teaching and learning styles. The strategy of looping therefore needs additional

research to expand the resources available to assist schools in determining if the implementation of looping will be beneficial for their school, teachers, and students.

This study sought to address some of the gaps in current and past looping research literature. With specific attention given to the achievement levels of student subgroups and the impact of looping on narrowing the achievement gap this study will expand the scope of looping research. Along with expanding the current looping research available this study also provides a continuation of the quantitative analysis of the impact of looping on student achievement levels in an elementary school setting. The following chapter will present the methods through which the research questions were addressed.

## **CHAPTER THREE: METHODOLOGY**

### **Introduction**

In this chapter, I discuss the rationale behind the research design selected to study the relationship between student assignment to looping classrooms and relative student achievement scores on standardized state test. The methodology which includes to site selection, data collection, research design, and analysis procedures will be described.

### **Theoretical Framework**

#### **Maslow's Hierarchy of Needs Theory**

Maslow's (1943) Hierarchy of Needs (MHN) theory asserts that people have a core set of needs that have an effect on an individual's motivation and behaviors. Maslow presented "five motivational needs: (1) physiological, (2) safety, (3) belonging and love, (4) esteem, and (5) self-actualization" (Dahl, 2015, p. 630). Each level addresses different needs which must be individual satisfied for each person. MHN (1943) theory mandates that the lower level needs of an individual must be meet before the higher-level needs begin to influence the individual's motivation and desires.

Assessing each level of need in MHN (1943) requires an understanding of the major tenets of each level and how each level is contextualized in an educational setting. The lowest level, physiological needs, encompasses basic survival needs such as food, shelter, and healthcare. Within an educational setting the basic survival needs include books, school supplies, meals before and during the school day, as well as access to health care providers such as a nurse when required. The second level, safety, related to the environment within an individuals' home

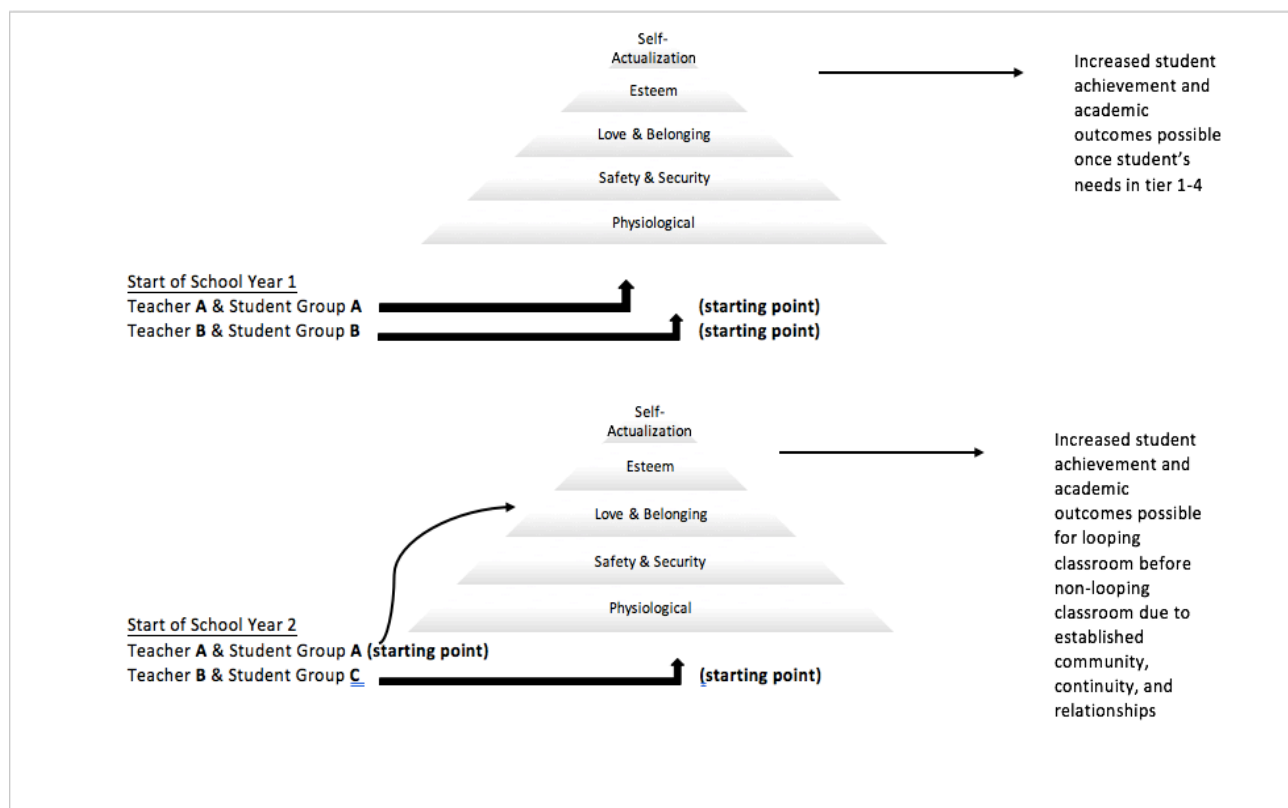
and community as well as a person's comfort level. Safety within an educational environment can refer to discipline policies and practices, physical campus security, issues related to bullying, racism, sexism, stereotypes, and the upkeep of facilities and classrooms. The third level, belonging and love, is a person's desire to be valued by others, to be a part of a group, to make connections and sustain relationships with other people. In the educational environment, the third level of needs has to do with collaboration among peers as well as with the teacher, the presence of the teacher within the class, a sense of community with a class and schools, personalized feedback on achievement and progress, involvement in extracurricular activities, as well as positive and lasting relationships with peers and teachers inside and outside of the classroom. The fourth level in MHN is self-esteem. Self-esteem includes internal and external components. The internal components are related to drive, self-worth, self-image, and personal beliefs of competency. External components of self-esteem refer to the status which is inferred on an individual by others. In an educational setting self-esteem is fostered through the creation of an inclusive classroom climate, responsive feedback, assessments and opportunities to demonstrate understanding and competency, a focus on mutual respect among peers and teachers, as well as attention to character and self-confidence development for all students. Self-actualization, the final level in MHN (1943) identifies a state at which individual desire to be their best and achieve at the highest levels while contributing to the world around them. The fifth level of needs in an educational environment is the stage in which a learner desire to improve personal academic outcomes, actively engages in learner guided instruction, and seeks to have an impact on the larger educational community.

The needs specific to an educational setting outlined above at levels one through four must be met for each individual student prior to that student having internal motivation and

desire for the highest level of need of self-actualization. Self-actualization refers to the stage “in which the individual can make full use of his or her talent and ability” (Dahl, 2015, p.630). Once a student has all subordinate levels of needs met and is in the stage of self-actualization within an educational environment, the opportunities for student achievement levels to be impacted increases as the student is fully utilizing individual knowledge and skills.

"A review of Abraham Maslow's Hierarchy of Needs reveals a strong support for the practice of looping" (Little & Little, 2001, p. 11). The practice of looping creates an educational environment in which the teacher and student are promoted together for at least two consecutive years. Looping provides the opportunity for the needs of individual students to be identified and addressed due to the extended time together over multiple school years. Looping creates an extended student teacher relationship as well as fosters the building of community within a classroom creating the opportunity for the student and teacher to understand specific needs at each level and deficiencies which need to be addressed. As outlined in MHN theory, a student is unable to possess and act upon the motivations and desires required in the self-actualization stage until the needs in the initial four stages are met. The potential power of the instructional strategy of looping is explained by MHN theory and illustrated in Figure 1.

**Figure 1: *The power of looping through Maslow's Hierarchy of Needs***



## Purpose, Hypothesis and Research Questions

To review the purpose of this study was to investigate the relationship between student assignments to a classroom practicing looping and student achievement on the NC EOG state standardized test in an elementary school setting.

### Research Hypothesis

The assignment of students to a classroom practicing looping will positively impact EOG standardized test achievement levels for student subgroups in a statistically significant manner.

### Major Research Questions

1. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for student subgroups?

2. Does the assignment of students to a classroom practicing looping narrow the achievement gap in a statistically significant manner?
3. How do teachers and administrators engaged in looping perceive its impact on student achievement?

### **Minor Research Questions**

1. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the African American student subgroup?
2. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Hispanic/Latino student subgroup?
3. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Caucasian student subgroup?
4. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Asian student subgroup?
5. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Mixed-Race student subgroup?

### **Rationale for Mixed Methods Study**

The rationale for the study design was based on this study's research hypothesis, research questions, variables of interest, the outcome of student achievement on the NC EOG assessment in looping classrooms compared to non-looping classrooms, and the use of a single school research site. Because this study utilizes variables measured numerically this dictated a quantitative element to the study design. Due to multiple other variables which align with a qualitative study design which may be of interest including teacher and students' perceptions of looping and the impact of looping on student-teacher relationships, the qualitative portion of the

study design serves to add context to the quantitative results in this single site research study. Jogulu and Pansiri (2011) assert “divergent findings created through differing data collection and analysis techniques appear to lead to greater depth and breadth in overall results, from which researchers can make more accurate inferences with increased credibility” (p. 688).

The review of literature presents a gap in the quantitative research related to the impacts of looping on student achievement and specially the examination of the impact of looping for specific student subgroups. The gap in current looping related research further supports the decision to focus on a quantitative study design with the qualitative interviews providing descriptive details and a setting in which to analyze the results. Ballou, Sanders, and Wright (2004) assert that student achievement as determined by utilizing advanced statistical modeling is shown to be a more authentic measure of student learning (p. 60). Fierro (2014) explains, “limiting the variable of interest allows for more robust data collection and analysis” (p.77). If assignment to looping classrooms has a possible relationship and impact on student achievement levels on standardized tests the research supporting the impact must be scalable and applicable to a broader setting.

## **Site Selection and Participants**

### **Site Selection and Access**

This study required the researcher to have access to confidential student assessment data as well as school personnel which included administrators and teachers assigned to looping classrooms. The existing data sets required the inclusion of student performance data, which has restricted access. Access to the necessary data required approval from gatekeepers within the school district. Specifically, administrators at the district and school level approved the request to obtain student performance data. Marshall and Rossman (2016) recommend an offer of

reciprocity, such as providing a consolidated research summary along with the study results to the administrators to aid in gaining access to necessary data (p. 117). For the purposes of this study, the researcher was granted access to the necessary data from a school site with an administrative team interested in better understanding the possible relationship between looping and student achievement levels. Ms. Robins, the administrator at Elementary School X, communicated her desire to conduct a research study and the study received approval from the district research office.

Elementary School X was located within an urban North Carolina school district and is a magnet school. The magnet focus at Elementary School X is a whole-child approach with a focus on growth, student agency, and leadership. The school is situated within a suburban area in the large urban school district. Elementary School X enrolls students from the immediate neighborhood surrounding the school in addition to students from around the district requesting to participate in the magnet program. The neighborhood in which Elementary School X is situated has a median home price approximately 23% below the median home price in the greater urban area the school district serves. In addition to lower median home prices the average income is nearly \$10,000 less than the income in the greater urban area.

Due to the magnet program at Elementary School X, the school provides a sample population more representative of the district population than the use of a non-magnet neighborhood-based school with a population reflecting more racial and socioeconomic segregation. The research site utilizes a whole school magnet program and students are selected utilizing prioritized selection criteria. The district utilizes three key factors in considering magnet school applications. The selection factors include socioeconomic status of the area where the student resides, projected socioeconomic status of the school that student is currently assigned to

for the coming school year, and the level of crowding at the student's assigned school. Fierro (2014) supports the decision to use a single school site based on the benefits of having the looping or non-looping classrooms applied to all students within the fourth-grade cohort in the same school, which outweighs the prospect of incorporating students from other schools (p.78). In addition, the study design controls for selection bias as student are compared to themselves in a previous academic year and other students within the same school. Johnson and Christensen (2014) explain one method of attempting to decrease the threat of "bias from the selection-maturation effect by matching experimental and control participants on important variables" (p. 361). The equality from matching variables for each participant "would persist over time, so any differences observed during a posttest could be attributed to the experimental treatment condition" (Johnson & Christensen, 2014, p. 361).

Elementary School X serves approximately 925 students in grades pre-kindergarten through fifth. The school student body composition by race is 47% Caucasian, 21% African American, 13% Hispanic, 14% Asian and 5% two or more races. The school's student body composition compares fairly equal with the county's composition by race of 48% Caucasian, 23% African American, 17% Hispanic, 8% Asian, and 4% two or more races. The student body consist of 38.3% students eligible for free and/or reduced lunch, 17.8% limited English proficient, and 6.9% special education. Though the school demographics mirror the district student demographics the performance outcomes for the research site are above the district and state average in all measures and student subgroups as shown in Table 8. Elementary School X received an overall grade of B in the 2016 school year taking into account the school achievement level of a 77 and having met growth. The school grade is calculated utilizing the NC EOG achievement score and growth scores.

**Table 8: 2016 School, District, and State Performance Data Comparison for Elementary School X**

	School	District	State
College/ Career Ready	67.7	59.4	48.8
Grade Level Proficient	75.7	67.5	58.2
Level 1	11.6	15.7	21.5
Level 2	12.7	1.8	20.2
Level 3	8.1	8.2	9.5
Level 4	41.3	35.7	33.4
Level 5	26.4	23.7	15.4
Student Subgroup Proficiency			
Caucasian	87.7	82.2	70.2
African America	52.7	44.4	39.9
Hispanic	51.6	48.2	47.6
Asian	90.0	89.1	79.6
Mixed Race	81.4	70.7	58.5

### **Data Collection**

The Institutional Review Board (IRB) at the University of North Carolina at Chapel Hill, the school district’s research committee, and the school principal approved the study and access required to complete the study as proposed. The IRB granted the quantitative and qualitative portions of the research study exempt status on November 3, 2016 and October 20, 2017 respectively. The school district research department approved the study and granted access to the research site in December 2016. The principal of Elementary School X provided access to student performance data, demographics, class rosters, teaching schedules, and staff members. The school extracted all identifiable information prior to providing the student achievement data and demographics. Pseudonyms were assigned by the school administration to the individual students to protect all identifiable information. In addition, pseudonyms have been assigned to the district, research site, administrators, and staff members to protect identifiable information.

## **Population and Sample Size**

The population of interest was elementary school students in North Carolina public schools. The specific population of interest was fourth grade students within a North Carolina public magnet elementary school implementing looping from third to fourth grade. For the purpose of this study, two classes of students were assigned to looping classrooms while the remainders of fourth grade students were assigned to seven non-looping classrooms. The study population includes all fourth-grade students who attended the school in third and fourth grade along with the school administrators and the two teachers assigned to the looping classrooms.

The sample size included in the study consisted of 119 students enrolled in the fourth-grade cohort at the research site. Table 9 outlines the specific demographics for the study population. The average class size for both the looping and non-looping classrooms was 20 students per class during the initial data collection. An initial comparison of the student demographics indicated that there was statistically significant difference in the number of female students, male students, and students in the Mixed-Race student subgroup assigned to non-looping classes compared to those assigned to classrooms practicing looping. The student assignment process used annually by the school was completed prior to the conception of the study and is presented in the interviews with the looping teachers and principal. The analysis of student demographics assigned to looping and non-looping classrooms accounts for the students who did not complete the two-year learning cycle required for the study. A total of 25 students did not complete the learning cycle of third and fourth grade at the research site therefore the achievement scores and demographic information have been omitted from the analysis. Of the 25 students omitted from the analysis 18 were enrolled in nonlooping classrooms and 7 were enrolled in a looping classroom. The percentage of students who did not complete the learning

cycle in the treatment group and the control group were 20.588% in the looping treatment group and 21.176% in the nonlooping control group.

**Table 9: Study Population Demographics**

	Fourth-Grade cohort	Treatment group (looping)	Control group (non-looping)
Student Count	119	34	85
Male	59	19	40
Female	60	15	45
Caucasian	59	18	41
African American	23	5	18
Asian	13	1	12
Hispanic	13	4	9
Mixed Race	12	6	6

## Research Design

### Overall Design

Since the data set collected and the variable being investigated in this study included both numerical student achievement results from the annual administration of the EOG and interviews with school administration and teacher assigned to looping classrooms, a mixed-methods study design was utilized. The focus of this study was the impact of student assignment to a looping classroom on student achievement including the achievement for specific student subgroups.

The design for the quantitative portion of the study was an *ex-post facto* mixed correlation design model. The study did not involve the manipulation of a treatment and the data collected was utilized for the sole purpose of determining if and to what degree a relationship exists between the assignment of students to looping classrooms and student subgroup achievement levels on a state mandated test. The quantitative portion of the study was a mixed correlation design model since the purpose of the study was “to determine how the outcomes for individuals who receive a treatment differ from what the outcome would have been in the absence of the

treatment” (Murnane & Willett, 2011, p.33). The study utilized a factorial design since the data collected consist of two specific types of classroom assignments, looping and non-looping classrooms.

The design used for the qualitative portion is a descriptive study. Kim, Sefcik, and Bradway (2016) describe a qualitative descriptive study as one which examines a topic within its natural environment, is not tied to a specific theory, utilizes interviews or focus groups, and includes descriptive summaries of the results (p. 24). The descriptive study consisted of semi-structured interviews with the school principal and the two teachers assigned to the looping classrooms. The descriptive design and semi-structured interview provide context and details essential to illustrating and analyzing the quantitative results (Lopez-Fernandez & Molina-Azorin, 2011, p. 1461). The interview guides in Appendix A and B include the specific questions utilized to guide the semi-structured interviews conducted with the two teachers assigned to classrooms practicing looping and the school’s principal. Following the transcription of each interview the transcripts were returned to the participants for member checking. Member checking provided the participants with the opportunity to strike, explain, or expand upon the content of the interview.

Upon completion of the interviews the transcripts were coded twice. Saldaña (2014) describe coding “as a way of patterning, classifying, and later reorganizing each datum into emergency categories for further analysis (p.95). During the initial phase open coding was used. During open coding the researcher assigned words that describe themes and patterns present in the text during the initial analysis (Saldaña, 2014, p.95). Examples of some of the codes identified during open coding include “successes”, “difficulties”, “tensions”, and “disappointments”. Following the initial phase of open coding, the researcher utilized a priori

coding to select codes which directly link the study's research questions and specific quotes from the interviews. Examples of some of the a priori codes identified include "achievement gap", "student subgroups", and "achievement outcomes". Once coding was completed the themes and findings are reported to provide context to the results of the quantitative data analysis.

### **Variables of Interest**

The dependent variable was the student achievement on the NC EOG standardized state test. The North Carolina Department of Public Instruction (NCDPI) creates, maintains, and reports annual student performance to all North Carolina school districts. The NCDPI reports are available through school district and local schools, thereby providing the necessary data for the dependent variable of interest, student achievement on the NC EOG. The NC EOG scale score for each student was utilized in the data analysis for this study. The score is a product of the raw score or number of assessment questions the student answers correctly into a developmental scale score. The use of a developmental scale score in place of a raw score allows for the comparison of a student's NC EOG score in a specific subject from grade to grade (NCDPI, 2014, p. 3). In this study, the developmental scale score was selected since the study design requires the comparison of student achievement over two school years. The independent variable for this study was the type of classroom the students is assigned to, being looping or non-looping. The students assigned to looping classrooms remained with the same teacher in fourth grade as the student was assigned to in third grade. The students assigned to non-looping classrooms had a different fourth grade teacher than the teacher of record in the third grade. The study analyzed data from two looping classrooms and five non-looping classrooms.

The dependent and independent variables for this study led to the selection of a mixed comparison model for the study design. Within the study design the control variables include

treatment effects (looping), time effects, student subgroups, and the individual students. The single treatment was selected as the main purpose of the study and the time effects were determined by the decision to utilize the NC EOG standardized test. The NC EOG standardized test is administered to third grade students and fourth grade students once during the school year. The administrations occur at the end of the third and fourth grade school year respectively. The study will utilize both administrations of the NC EOG standardized tests during the students' third and fourth grade school years establishing the two-time effects. The next control variables within the study design is student subgroups. The assignment to student subgroups including race and language are already established. Parents identify the students designated ethnicity and language when enrolling the students in the school district. The final control variable are the students, since a decision to utilize a different study site or a different grade level within the school site would result in different students being utilized within the study. Though the individual students present a random effect in the study design, multiple measures will be examined at each time for the same students. The next section will provide details regarding the procedures for existing data sources, and the analysis of data.

### **Procedures**

After obtaining approval for the quantitative and qualitative portions of the study on November 3, 2016 and October 20, 2017 respectively from the University of North Carolina at Chapel Hill Institutional Review Board (IRB) and obtaining access to the school site and research related data from the school district and school leadership, the researcher requested specific data sets required for analysis. Prior to the data being provided to the research for analysis data was coded, cleaned, de-identified, and organized. The detailed analysis and statistical procedures will be outlined later in this chapter.

## **Existing Data Sets**

The data sets required for the quantitative portion of this study are updated and maintained by the schools and school district. The existing databases at the selected school site provided the data required to complete this study. Since the study being conducted was at the request of the school site approval to access the existing data sets was approved by the school and school district research department following approval from the University of North Carolina at Chapel Hill IRB. Part of the approval from the IRB required the school administrator to code and scrub all personally identifiable data prior to release the data to the researcher. The school site administrators assigned random codes to replace each individual's name or other identifying information. To further protect school and student information the research will utilize pseudonyms at all times. The school site administrators and research are working together to ensure the appropriate safeguards are followed. Furthermore, all data files will be maintained in a protected file, on the University of North Carolina secure serve which is password protected and only the researcher and study advisor will have access to.

## **Analysis and Statistical Procedures**

The design for this study was a mixed correlation design model. The researcher compared the NC EOG standardized test scores of current fourth graders assigned to looping and non-looping classrooms. The comparison began with the calculation of the means for the NC EOG standardized test scores for students assigned to looping and non-looping classrooms for each of the three assessment windows. The comparison of means allowed the research to “see whether the groups differed on the dependent variable” (Johnson & Christensen, 2014, p. 389) of student achievement scores on the NC EOG. In addition to the comparison of means between looping

and non-looping classrooms, the researcher conducted a means comparison for each of the student subgroups identified in the minor research questions.

Following the initial comparison of means the researcher conducted a single tailed paired t-test to examine if a statistically significant relationship existed between the variables of interest. The statistical analysis was conducted for the purposes of examining the existence of a possible relationship between the students assigned to looping and non-looping classrooms as well as for the identified student subgroups. The researcher utilized a mixed correlation design model to determine if the relationship between the looping and non-looping classrooms was statistically significant. “Statistical significance simply means that you can conclude that the difference between the group means is greater than what you would expect to see by chance alone” (Johnson & Christensen, 2014, p. 389). Upon completion of the paired t-test analysis the researcher was able to use the results to conclude if a significant relationship exists between the assignments of students to looping classroom and student achievement as well as the impact the assignment to a looping classroom has on narrowing the achievement gap.

### **Interview Protocols**

The qualitative portion of the study consisted of conducting three semi-structured interviews. Semi-structured interviews are “organized around a set of predetermined open-ended questions, with other questions emerging from the dialogue between interviewer and interviewee” (DiCicco-Bloom and Crabtree, 2006, p. 315). The interviews serve to provide context to the results of the quantitative analysis. The study included an interview with the school’s principal in addition to the teachers assigned to the two looping classrooms. The administrator interview protocol is outlined in Appendix A and the looping teacher interview protocol is outlined in Appendix B. The interview protocol guided the semi-structured

interviews. Each of the interviews lasted no more than 45 minutes and a total of no more than three interview per participant was conducted.

### **Limitations and Significance**

As is the case in all research studies limitations exist which impact the future applicability of the results. However, the ability of this study to fill a gap in the existing literature pertaining to the impact of looping remains.

#### **Limitations**

Due to the study focusing on a single elementary school site and a specific cohort of students who have experienced looping for a single year the applicability and relevance is limited to contexts that would be similar in nature. Generalizability is therefore limited. In addition, the elementary school site chosen for the study is already identified as high performing and is a magnet school in which the students apply to attend. This is unlike a traditional school in which students are assigned based on address. The fact that parents intentionally apply and enroll students at the study site introduces a possible selection bias. The focus on the single quantitative variable of EOG scores further limits the findings of the study, as the specific assessment is not utilized in all states or all elementary schools. In addition, the teacher effects are nested within the treatments effect since there is a single treatment of the assignment to a looping or non-looping classroom and the teachers were only selected because the school site began the implementation with the current fourth grade cohort during their third-grade year. Since the research model utilized in this study does not address teacher quality the teacher effects on student outcomes is a limitation of the study. Lastly the study focuses solely on the investigation of the relationship between assigning students to looping classrooms and increased student achievement on the EOG standardized test.

## **Significance**

This study has the potential to be significant for two main reasons. First, the examination of a possible relationship between student assignment to a looping classroom and student achievement could inform educational leaders and their decisions related to the organizational structures within schools. Assuming the standardized assessment metrics are valid representations of student learning, understanding the relationship between classroom structure as in the case of looping and student achievement may result in an increased implementation of the strategy if results are favorable or discontinued use of the strategy if the results prove negative or negligible. Second, the aggregation of student achievement data by subgroups and examination of the impact of looping on narrowing the achievement gap provides an opportunity for the results to impact greater educational equity. The influences of creating an educational environment, which promotes equity across ethnic and socioeconomic groups, will transcend beyond the school and its surrounding community.

## **Ethics and Possible Threats to Validity**

In the design and execution of this study the researcher took specific steps to address ethics, validity, and reliability. Each of these areas required the researcher to be diligent in investigating methodologies, conclusions, and other educational research which served to inform this study.

## **Ethics**

As part of the required coursework the researcher successfully completed courses on research methods and ethics specifically addressing the concerns when conducting research involving human subjects and minors. Prior to conducting this study, a proposal was submitted to the University of North Carolina at Chapel Hill Institutional Review Board. The Institutional

Review Board determined the proposed study implemented the appropriate safeguards and granted the researcher exempt status and permission to proceed. The quantitative portion of the mixed methods design is *ex post facto* in nature which alleviated a portion of the ethical concerns as the collection of data required no interaction between the researcher and the students (Cohen, Manion, & Morrison, 2007, p. 264). To further protect personally identifiable information for teachers, students, administrators, and the school pseudonyms were assigned and the research data was coded by the school prior to being released to the researcher. The school personnel assigned dummy identifiers to each class and student. The school and the research followed all requirements in the Family Educational Rights and Privacy Act (FERPA) throughout the study.

During the qualitative semi-structured interviews, all participants were provided with consent documents and assigned pseudonyms to protect the participants. The interview guides contain information which is not overly intrusive and only pertains to activities directly related to the participants' job within the school site.

### **Possible Threats to Validity**

When conducting a research study threats to validity and reliability will always be present to some degree. Identifying and addressing threats to validity and reliability are therefore an essential element in designing and executing a research study. Cohen, Manion, and Morrison (2007) highlight the possible threats to validity in both qualitative and quantitative designs. "For example, in qualitative data validity might be addressed through the honesty, depth, richness, and scope of the data achieved, the participants approached, the extent of triangulation and the disinterestedness or objectivity of the researcher" (Winter, 2000, p.9). While in quantitative data "validity might be improved through careful sampling, appropriate instrumentation and

appropriate statistical treatments of the data” (Cohen, Manion, & Morrison, 2007, p. 133). This section will address possible threats to internal and external validity.

The tendency for participants to regress towards the mean over time is a threat to internal validity present in this study. Regression refers to the tendency for outcomes to move towards the mean overtime (Cohen, Manion, & Morrison, 2007, p. 155). For example, if a student scored above the mean the first year the prediction would be that the following year the score would be lower, while if a student scored below average in year one the student’s score would be higher the following year. The same would be expected for the students in this study. Students with lower achievement scores on the NC EOG in third grade would be predicted to achieve higher in fourth grade, while those with higher achievement levels in third grade would be predicted to achievement lower scores in fourth grade despite assignment to a looping or non-looping classroom. The matched pair design of this study which compares the student achievement for the same students over time assist in mitigating the threat to internal validity due to regression as initial similarities are controlled producing less biased results (Campbell and Stanley, 1963, p. 49).

In addition to regression toward the mean, maturation present another threat to the internal validity of this study. Cohen, Manion, and Morrison (2007) explain that during the duration of a study the participants will change in various ways and those changes can impact the outcomes of the study (p. 155). The researcher attempted to counteract this threat by utilizing matched pairs design. Each student served as a pair to themselves in year one and year two. Through this design the researcher used the students as their own control over time.

The largest threat to internal validity based on the study design is selection. The threat of selection is present in this study due to the subjects not being assigned to looping and non-

looping classrooms randomly. The selection of students for this study was done based on the student assignment process at Elementary School X prior to the commencement of this study. The students assigned to the classrooms practicing looping were assigned at the end of their second-grade school year. Since the decision to loop two of the seven third-grade classes was made in the middle of the school year after the students were assigned, the option to randomly assign students to the treatment group was unavailable. In addition to the having already been assigned to the treatment groups the selection of the two looping classes by the administrators at Elementary School X was done based on the professional relationship already established between the two selected teachers and their existing relationship and success with their current students.

Though the use of pre-existing data sets minimizes the threats to external validity, the questionable generalizability and the threat of interaction effects of extraneous factors need to be addressed. The specialized school setting of a suburban high performing magnet school with a diverse student population and the lack of randomness within the study design contribute to the questionable generalizability. Sound procedures for student class assignment, standardized testing, data collection, and data analysis add to the replicability of the study despite the questionable generalizability. Important to note is the illuminative qualities of the study in spite of the questionable generalizability. The study served to illuminate the power of looping and the impact of student assignment to a looping classroom on achievement levels for specific subgroups.

### **Chapter Summary**

This chapter provided an overview of the methodology for the study and the rationale for research design selection, data, and analytical procedures. The study has been submitted for

review by the Office of Human Research Ethics and was determined to be internal review board exempt and require no further review. The data collection for the study was completed at the conclusion of the 2016 – 2017 end of school year EOG assessments. Following the final data collection, the data analysis was conducted and the study was completed in the spring of 2018. The following chapter will present the detailed results of the quantitative and qualitative portions of this study.

## **CHAPTER FOUR: RESULTS**

### **Introduction**

In this chapter, the results of the quantitative analysis regarding a possible relationship between the assignment to a looping classroom and student achievement on the NC EOG state standardized assessment will be presented. The analysis of the interviews conducted with the school administration and teachers assigned to the looping classrooms will also be presented in this chapter.

### **Hypothesis and Research Questions**

The following hypothesis and research questions were utilized to investigate the relationship between student assignments to as a classroom practicing looping and student achievement on the North Carolina End-of-Grade (NC EOG) state standardized test in an elementary school setting.

#### **Research Hypothesis**

The assignment of students to a classroom practicing looping will positively impact EOG standardized test achievement levels for student subgroups in a statistically significant manner.

#### **Major Research Questions**

1. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for student subgroups?
2. Does the assignment of students to a classroom practicing looping narrow the achievement gap in a statistically significant manner?

3. How do teachers and administrators engaged in looping perceive its impact on student achievement?

### **Minor Research Questions**

1. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the African American student subgroup?

2. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Hispanic/Latino student subgroup?

3. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Caucasian student subgroup?

4. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Asian student subgroup?

5. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Mixed-Race student subgroup?

### **Descriptive Statistics**

Demographic data collected during this study as presented in Tables 10 and 11 indicate that there were 119 students in the fourth-grade cohort. The students were assigned to either a looping classroom or non-looping classroom. Elementary School X's fourth grade cohort consisted of seven classes. Two of the seven classes were designated as looping classrooms and the remaining five were non-looping classes. The selection of the two looping classrooms was determined by Elementary School X's administration who required this study. Prior to this study the school had experience with looping teachers and students at the fourth and fifth grade level as well as at lower grade levels. During the third-grade year for the study cohort, the administration selected the two looping classrooms after observing the positive and open communication and

teamwork between Mrs. Smith and Mr. Brown in the previous school years. After discussions with the teachers, the teachers expressed a desire to loop with their students. This caused the administration to choose to have two looping and five non-looping classes for the current cohort of students. Prior to the decision to implement two looping classrooms the students had already been assigned based on the school's existing student assignment process and had completed more than half of the first school year with the assigned teachers.

Student assignment is a multi-step process at Elementary School X focused on equitable division of students among the current teachers based on the designated learner type. At the end of each school year each teacher fills out a grade level information card for each of their students. The information card includes the student's current academic achievement levels, behavior indicators to include any disciplinary referrals, and teacher comments. Based on these (the academic achievement levels and behavior indicators) each student is assigned an alpha-numeric code that indicates the student's learner type. The numbers range from one to four and indicate academic achievement level with four being the highest achievement level. The alpha codes range from A to D indicating student behavior level with A being the best behavior and D referring to a child with behavioral problem or multiple disciplinary referrals. The students are then divided equally into the number of classrooms in the next grade level. The purpose of the assignment process is to ensure each class has an equal number of students from each learner type.

When the annual student assignment process was completed, there were 34 students assigned to looping classrooms and 85 students assigned to non-looping classrooms. The research questions for this study focused on specific ethnic subgroups of students to assess the possible relationship between assignment to a looping classroom and narrowing of the

achievement gap. The identified subgroups include Caucasian, African American, Asian, Hispanic, and mixed race. The assigned subgroups were based on the ethnicities parents selected to identify students at the time of enrollment. Parents could identify their student as Caucasian, African American, Hispanic/Latino, Asian, and Mixed-Race. Table 10 indicates the combined ethnic composition of the looping and non-looping classrooms for each of the identified subgroups.

Table 11 outlines the specific ethnic demographics for the seven individual classrooms participating in the study including the two looping classrooms and the five non-looping classrooms. As noted in Table 11, Class E has higher enrollment than the other classes in the cohort. All seven classes began the third-grade school year with an average of 20 students, the size of Class E is larger than the other classes in due to more students in Class E completing the two-year learning cycle for this study. A total of 25 students did not complete the learning cycle of third and fourth grade at the research site therefore the achievement scores and demographic information have been omitted from the analysis. The 25 students did not complete the learning cycle because they either moved schools before the end of fourth grade or began school at Elementary School X during the fourth-grade school year. One of the 25 students in the non-looping classrooms was retained in the third grade and therefore no fourth-grade EOG data was available. Of the 25 students omitted from the analysis 18 were enrolled in nonlooping classrooms and 7 were enrolled in a looping classroom. The percentage of students who did not complete the learning cycle in the treatment group and the control group were 20.588% in the looping treatment group and 21.176% in the nonlooping control group.

**Table 10: Overall Cohort Descriptive Statistics**

Characteristics	4 <sup>th</sup> Grade cohort		Looping		Non-Looping	
	n	%	n	%	n	%
Male	59	49.580	19	55.882	40	47.059
Female	60	52.101	15	44.118	45	52.941
Caucasian	59	49.580	18	52.941	41	48.235
African American	23	19.328	5	14.706	18	21.176
Asian	13	10.924	1	2.941	12	14.118
Hispanic	13	10.924	4	11.765	9	10.588
Mixed Race	12	10.084	6	17.647	6	7.059

**Table 11: Individual Class Descriptive Statistics**

	Class A	Class B	Class C (looping)	Class D	Class E	Class F	Class G (looping)
Class Size	18	15	16	16	20	16	18
Characteristics	%	%	%	%	%	%	%
Male	55.556	46.667	56.25	50	40	43.75	55.556
Female	44.444	53.333	43.75	50	60	56.25	44.444
Caucasian	55.556	66.667	43.75	43.75	30	37.5	61.111
African American	11.111	6.667	12.5	25	30	31.25	16.667
Asian	22.222	0	6.25	12.5	20	12.5	0
Hispanic	11.111	13.333	12.5	18.75	10	0	11.111
Mixed Race	0	0	25	6.25	10	18.75	11.111

### Performance Metrics

Following the examination of the descriptive statistics by gender, student subgroup, and assignment to looping or non-looping classes, various performance metrics were investigated. The categories of interest were student reading and math EOG scores from grades three and four when two of the seven classes of students were assigned to a classroom practicing looping and each student's reading and math EOG growth score as determined by the change in achievement level from third to fourth-grade. The NC EOG scale score for each student was utilized in the analysis of the performance metrics. The score is a product of the raw score or number of

assessment questions the student answers correctly into a developmental scale score. The use of a developmental scale score in place of a raw score allows for the comparison of each student's NC EOG score in a specific subject from grade to grade (NCDPI, 2014, p. 3). The *n* for each class type and student subgroup was the number of students assigned based on the study's descriptive statistics. The mean growth score was calculated utilizing the individual student achievement level on the fourth-grade EOG and subtracting the individual student achievement on the third-grade for both reading and mathematics. Once the individual student growth score was calculated, the mean for each student subgroup for both looping and non-looping classrooms were calculated. Utilizing the number of students in each subgroup and the mean growth score the standard deviation was calculated. "The standard deviation from the mean is the extent to which scores vary from the mean" (Hoy & Adams, 2016, p. 45). Calculating the standard deviation for each subgroup in both the looping and non-looping classes allows for the conducting of *t*-test for each subgroup to determine if looping had a statistically significant impact on student achievement levels. The reading and math achievement performance metrics are presented for looping and non-looping class by student subgroup in Table 12 and Table 13.

**Table 12: Reading Achievement Performance Metrics**

Student Subgroup	Looping			Non-Looping		
	n	MG	SD	n	MG	SD
All	34	6.9412	5.2221	85	11.1687	6.6393
Caucasian	18	8.5	4.5277	41	15.8718	7.1565
African American	5	5.8	6.9426	18	6.4118	5.3088
Asian	1			12	6.4545	4.2747
Hispanic	4	4.75	2.8723	9	8.8889	4.0139
Mixed Race	6	3.5	5.3572	6	8.2	8.1363
Non-Caucasian	15	5.1875	5.1796	33	7.2813	5.4491

*Note.* MG = mean growth score.

**Table 13: Math Achievement Performance Metrics**

Student Subgroup	Looping			Non-Looping		
	n	MG	SD	n	MG	SD
All	34	-0.384	4.1780	85	4.4096	4.7961
Caucasian	18	-0.6111	4.2556	41	10.325	4.9778
African American	5	2.6	1.1402	18	-2.0625	3.5792
Asian	1			12	0	4.8990
Hispanic	4	-0.5	6.7577	9	-1.1111	3.8550
Mixed Race	6	-2.1667	3.3714	6	0.2	8.7293
Non-Caucasian	15	-0.1333	4.3238	33	-1.4688	4.6280

*Note.* MG = mean growth score.

After calculating the reading and math achievement performance metrics seen in Table 12 and 13, assessing whether the growth score for each student subgroup was statistically significant as the research questions was imperative for this study seek to investigate a possible relationship between assignment to a looping classroom and EOG achievement levels for each subgroup. To analyze if the growth scores were statistically significant or plausibly due to change, matched pairs *t*-test were conducted. The *t*-test assess if there is a statistical difference between achievement level of students in the looping and non-looping classrooms or if the difference found is just by chance and not related to the assignment of a classroom practicing looping. “The *t*-test is an appropriate statistical procedure when the independent variable has two and only two categories and the dependent variable is continuous” (Hoy & Adams, 2016, p. 52), which is the case in this study with the assignment of students to a classroom practicing looping or a non-looping classroom. The results of the *t*-test conducted for each subgroup and class assignment type are outlined in Table 14.

**Table 14: Analysis of Change in NC EOG 3<sup>rd</sup>-4<sup>th</sup> grade**

Student Subgroup	Reading				Math			
	t	df	Standard Error of Difference	p	t	df	Standard Error of Difference	p
All	0.9599	117	1.273	0.3391	0.7612	117	0.940	0.4481
Caucasian	0.1560	57	17.105	0.8776	0.3641	57	1.350	0.7171
African American	0.2139	21	2.859	0.8327	2.8304	21	1.647	0.0100
Asian								
Hispanic	1.8429	11	2.246	0.0924	0.2108	11	2.898	0.8369
Mixed Race	1.1818	10	3.977	0.2646	0.6195	10	3.820	0.5494
Non-Caucasian	1.2524	46	1.672	0.2167	0.945	46	1.413	0.3495

The *t*-test produces two values which are essential to the analysis of the results and the outcomes of the research questions posed in this study. The *t* value compares the actual difference in the scores of students assigned to classrooms practicing looping and students assigned to non-looping classroom in comparison to the difference in the students' scores by chance (Hoy & Adams, 2016, p. 53). "The larger the ratio, the greater the probability that the difference is not a function of chance" (Hoy & Adams, 2016, p. 53). If the *t* value is 1, then the results can be explained by chance and the difference is not statistically significant but if the *t* value is 2 or more than the difference is statistically significant and not just explained by chance (Hoy & Adams, 2016, p. 53). The reported "*p* value is a probability level that indicates the level of significance, that is, the probability that the results are a function of chance" (Hoy & Adams, 2016, p. 53). Hoy and Adams (2016) explain that "most researchers accept a relation as statistically significant if the *p* value is equal to or less than .05" (p. 54).

The results of the *t*-test calculated based on reading and math EOG achievement levels each student subgroup revealed that overall the assignment to a looping classroom does not have

a statistically significant impact on student achievement. Despite no overall statistically significant impact of assignment to a classroom practicing looping on achievement or narrowing the achievement gap, the statistical analysis indicated a significant impact for African American students in the area of math achievement. The  $t$ -test indicated that the math average growth score of 2.6 was statistically significant,  $t = 2.8304$ ,  $p = 0.100$ .

### **Results of Quantitative Data Analysis**

#### **Major Research Question 1**

*The assignment to a classroom practicing looping had no statistically significant impact on the EOG achievement levels for students.*

Performance metrics were calculated to assess the change in EOG achievement levels for students in looping and non-looping classrooms. The descriptive statistics utilized for this calculation were the combined change in student achievement scores for all student subgroups in both looping and non-looping classrooms. The looping classes consisted of  $n = 34$  students with reading average growth score of 4.9412 and  $\sigma = 5.221$  and math average growth score of -0.384 and  $\sigma = 4.1780$ . The non-looping classes consisted of  $n = 85$  students with reading average growth score of 11.1687 and  $\sigma = 50.0809$  and math average growth score of 4.4096 and  $\sigma = 50.3989$ . The  $t$ -test results for reading achievement were  $t = 0.4899$ ,  $df = 117$ ,  $p = 0.6251$ . The  $t$ -test results for math achievement were  $t = 0.5523$ ,  $df = 117$ ,  $p = 0.5818$ . The results of the  $t$ -test found there was no statistically significant relationship between student assignment to a looping classroom and EOG achievement levels in reading or math. Therefore, the research hypothesis was rejected.

**Table 15: *T-test for Overall Change in NC EOG 3<sup>rd</sup>-4<sup>th</sup> grade***

Student Subgroup	Reading				Math			
	t	df	Standard Error of Difference	p	t	df	Standard Error of Difference	p
All	0.4899	117	8.629	0.6251	0.5523	117	8.677	0.5818

## Major Research Question 2

*The assignment to a classroom practicing looping had no statistically significant impact on narrowing the achievement gap.*

Performance metrics were calculated to assess the change in EOG achievement levels for non-Caucasian students in looping and non-looping classrooms. The descriptive statistics utilized for this calculation were the combined change in student achievement scores for all students in the non-Caucasian subgroup in both looping and non-looping classrooms. The looping classes consisted of  $n = 15$  students with reading average growth score of 5.1875 and  $\sigma = 5.1796$  and math average growth score of -0.1333 and  $\sigma = 4.3238$ . The non-looping classes consisted of  $n = 33$  students with reading average growth score of 7.2813 and  $\sigma = 5.4491$  and math average growth score of -1.4688 and  $\sigma = 4.680$ . The  $t$ -test results for reading achievement were  $t = 1.2524$ ,  $df = 46$ ,  $p = 0.2167$ . The  $t$ -test results for math achievement were  $t = 0.945$ ,  $df = 46$ ,  $p = 0.3495$ . The results of the  $t$ -test found there was no statistically significant relationship between student assignment to a looping classroom and narrowing the achievement gap. Therefore, the research hypothesis was rejected.

**Table 16: T-Test for Non-Caucasian Subgroup Change in NC EOG 3<sup>rd</sup>-4<sup>th</sup> grade**

Student Subgroup	Reading				Math			
	t	df	Standard Error of Difference	p	t	df	Standard Error of Difference	p
Non-Caucasian	1.2524	46	1.672	0.2167	0.945	46	1.413	0.3495

**Minor Research Question 1**

*The assignment to a classroom practicing looping had no statistically significant impact on the reading EOG achievement levels for the African American student subgroup.*

*The assignment to a classroom practicing looping had a statistically significant impact on the math EOG achievement levels for the African American student subgroup.*

Performance metrics were calculated to assess the change in EOG achievement levels for African American students in looping and non-looping classrooms. The descriptive statistics utilized for this calculation were the combined change in student achievement scores for all student in the African American subgroup in both looping and non-looping classrooms. The looping classes consisted of  $n = 5$  students with reading average growth score of 5.8 and  $\sigma = 6.9426$  and math average growth score of 2.6 and  $\sigma = 1.1402$ . The non-looping classes consisted of  $n = 18$  students with reading average growth score of 6.4118 and  $\sigma = 5.3088$  and math average growth score of -2.0625 and  $\sigma = 3.5792$ . The  $t$ -test results for reading achievement were  $t = 0.2139$ ,  $df = 21$ ,  $p = 0.8327$ . The  $t$ -test results for math achievement were  $t = 2.8304$ ,  $df = 21$ ,  $p = 0.0100$ . The results of the  $t$ -test found there was no statistically significant relationship between student assignment to a looping classroom and EOG achievement levels in reading for the African American student subgroup. The results of the  $t$ -test found there was a statistically significant relationship between student assignment to a looping classroom and EOG

achievement levels in math for the African American student subgroup. Therefore, the research hypothesis was rejected for EOG achievement levels in reading for the African American student subgroup and retained for EOG achievement levels in math for the African American student subgroup.

Though the quantitative analysis indicated a statistically significant impact on math achievement levels for students in the African American subgroup, it is important to note this study cannot conclude that looping was the absolute cause of the increased math achievement levels. A variety of factors including math instructional strategies utilized, teacher quality, teacher experience, student grouping, and individual student math abilities could have contributed to the positive increase in math achievement levels for African American students. Recommendations for further research studies will be presented in the chapter five.

**Table 17: T-Test for African American Subgroup Change in NC EOG 3<sup>rd</sup>-4<sup>th</sup> grade**

Student Subgroup	Reading				Math			
	t	df	Standard Error of Difference	p	t	df	Standard Error of Difference	p
African American	0.2139	21	2.859	0.8327	2.8304	21	1.647	0.0100

## Minor Research Question 2

*The assignment to a classroom practicing looping had no statistically significant impact on the reading EOG achievement levels for the Hispanic/Latino student subgroup.*

*The assignment to a classroom practicing looping had no statistically significant impact on the math EOG achievement levels for the Hispanic/Latino student subgroup.*

Performance metrics were calculated to assess the change in EOG achievement levels for Hispanic/Latino students in looping and non-looping classrooms. The descriptive statistics

utilized for this calculation were the combined change in student achievement scores for all students in the Hispanic/Latino subgroup in both looping and non-looping classrooms. The looping classes consisted of  $n = 4$  students with reading average growth score of 4.75 and  $\sigma = 2.8723$  and math average growth score of -0.5 and  $\sigma = 6.7577$ . The non-looping classes consisted of  $n = 9$  students with reading average growth score of 8.8889 and  $\sigma = 8.1363$  and math average growth score of -1.1111 and  $\sigma = 3.8550$ . The  $t$ -test results for reading achievement were  $t = 1.8429$ ,  $df = 11$ ,  $p = 0.0924$ . The  $t$ -test results for math achievement were  $t = 0.2108$ ,  $df = 11$ ,  $p = 0.8369$ . The results of the  $t$ -test found there was no statistically significant relationship between student assignment to a looping classroom and EOG achievement levels in reading or math for the Hispanic/Latino student subgroup. Therefore, the research hypothesis was rejected.

**Table 18: *T-Test for Hispanic/Latino Subgroup Change in NC EOG 3<sup>rd</sup>-4<sup>th</sup> grade***

Student Subgroup	Reading				Math			
	t	df	Standard Error of Difference	p	t	df	Standard Error of Difference	p
Hispanic	1.8429	11	2.246	0.0924	0.2108	11	2.898	0.8369

### Minor Research Question 3

*The assignment to a classroom practicing looping had no statistically significant impact on the reading EOG achievement levels for the Caucasian student subgroup.*

*The assignment to a classroom practicing looping had no statistically significant impact on the math EOG achievement levels for the Caucasian student subgroup.*

Performance metrics were calculated to assess the change in EOG achievement levels for Caucasian students in looping and non-looping classrooms. The descriptive statistics utilized for this calculation were the combined change in student achievement scores for all students in the Caucasian subgroup in both looping and non-looping classrooms. The looping classes consisted

of  $n = 18$  students with reading average growth score of 8.5 and  $\sigma = 4.5277$  and math average growth score of -0.6.111 and  $\sigma = 4.2556$ . The non-looping classes consisted of  $n = 41$  students with reading average growth score of 15.8718 and  $\sigma = 7.1565$  and math average growth score of 10.325 and  $\sigma = 72.4411$ . The  $t$ -test results for reading achievement were  $t = 0.1560$ ,  $df = 57$ ,  $p = 0.8776$ . The  $t$ -test results for math achievement were  $t = 0.6369$ ,  $df = 57$ ,  $p = 0.5267$ . The results of the  $t$ -test found there was no statistically significant relationship between student assignment to a looping classroom and EOG achievement levels in reading or math for the Caucasian student subgroup. Therefore, the research hypothesis was rejected.

**Table 19: T-Test for Caucasian Subgroup Change in NC EOG 3<sup>rd</sup>-4<sup>th</sup> grade**

Student Subgroup	Reading				Math			
	t	df	Standard Error of Difference	p	t	df	Standard Error of Difference	p
Caucasian	0.1560	57	17.105	0.8776	0.6369	57	17.171	0.5267

#### **Minor Research Question 4**

*Due to the limited sample size of the Asian student subgroup assigned to classrooms practicing looping the statistical significance of the impact on EOG achievement levels could not be calculated.*

The descriptive statistics for the Asian students assigned to classrooms practicing looping and non-looping classroom reveal  $n = 1$  for looping classes and  $n = 6$  for non-looping classrooms. Since only one student in the Asian student subgroup was assigned to a looping classroom an average growth score and standard deviation could not be calculated. Without the necessary performance metrics, the researcher was unable to conduct the  $t$ -test to assess if the assignment to a classroom practicing looping had a statistically significant impact on EOG achievement levels.

### Minor Research Question 5

*The assignment to a classroom practicing looping had no statistically significant impact on the reading EOG achievement levels for the Mixed-Race student subgroup.*

*The assignment to a classroom practicing looping had no statistically significant impact on the math EOG achievement levels for the Mixed-Race student subgroup.*

Performance metrics were calculated to assess the change in EOG achievement levels for Mixed-Race students in looping and non-looping classrooms. The descriptive statistics utilized for this calculation were the combined change in student achievement scores for all students in the Mixed-Race subgroup in both looping and non-looping classrooms. The looping classes consisted of  $n = 6$  students with reading average growth score of 3.5 and  $\sigma = 5.3572$  and math average growth score of -2.1667 and  $\sigma = 3.3714$ . The non-looping classes consisted of  $n = 6$  students with reading average growth score of 8.2 and  $\sigma = 8.1363$ . and math average growth score of 0.2 and  $\sigma = 8.7293$ . The  $t$ -test results for reading achievement were  $t = 1.1818$ ,  $df = 10$ ,  $p = 0.2646$ . The  $t$ -test results for math achievement were  $t = 0.6195$ ,  $df = 10$ ,  $p = 0.5494$ . The results of the  $t$ -test found there was no statistically significant relationship between student assignment to a looping classroom and EOG achievement levels in reading or math for the Caucasian student subgroup. Therefore, the research hypothesis was rejected.

**Table 20:  $T$ -Test for Mixed-Race Subgroup Change in NC EOG 3<sup>rd</sup>-4<sup>th</sup> grade**

Student Subgroup	Reading				Math			
	t	df	Standard Error of Difference	p	t	df	Standard Error of Difference	p
Mixed Race	1.1818	10	3.977	0.2646	0.6195	10	3.820	0.5494

## **Qualitative Data Analysis**

The qualitative portion of the study was descriptive and consisted of semi-structured interviews with the school principal and the two teachers assigned to the looping classrooms. The descriptive design and semi-structured interview provided context and details essential to illustrating and analyzing the quantitative results (Lopez-Fernandez & Molina-Azorin, 2011, p. 1461). The interview guides in Appendix A and B include the specific questions utilized to guide the semi-structured interviews conducted with the two teachers assigned to classrooms practicing looping and the school's principal. The section below addresses the results related to the third major research question including an analysis of the interviews conducted and provide context and perspective to the results reported through the quantitative analysis.

### **Major Research Question 3**

How do teachers and administrators engaged in looping perceive its impact on student achievement?

#### **Looping Teachers Interview**

The initial interview request was sent to Mrs. Smith and Mr. Brown the teachers assigned to the classrooms practicing looping in this study. Mrs. Smith is a Caucasian female who has been teaching elementary school for five years and has been at Elementary School X for three years. Mrs. Smith splits her time between teaching third grade and fourth grade. She had taught third grade for three years; however, for the past two years, Mrs. Smith was assigned to a fourth-grade classroom. Mrs. Smith's first year as a fourth-grade teacher was with the looping classroom analyzed in this study. When asked about her grade level preference, Mrs. Smith stated "I definitely prefer third and fourth grade, I think I just like the maturity level of the kids and the conversations that we have seeing as they are getting older."

The second teacher assigned to a looping classroom was Mr. Brown. Mr. Brown is a Caucasian male currently in his 14<sup>th</sup> year of teaching at Elementary School X. He moved into the area specifically to teach at Elementary School X and to work with Ms. Robins, the school principal. During his tenure with Elementary School X, Mr. Brown taught second, third, fourth, and fifth grade. Unlike Mrs. Smith who preferred to teach third and fourth grade, Mr. Brown had no grade level preference. Mr. Brown explained “I actually don’t have a preference. I actually love being in the classroom.” Mr. Brown went on to say that since he has had the opportunity to teach at different grade levels “I know the curriculum, I know where they’re coming from, I know where they’re going, and I honestly would teach kindergarten tomorrow if I had the opportunity.”

The passion for teaching and dedication to Elementary School X was evident in the responses each teacher demonstrated during the interview. Mrs. Smith and Mr. Brown had strong working relationships and open lines of communication prior to being assigned to looping classrooms because they both team taught in previous school years. The teachers found they worked well together, had equally high expectations for students, and practiced open and honest communication to allow them to assist each other and meet the needs of the diverse student population they serve. When the teachers were contacted regarding the interview for this study, their partnership and positive experiences working together led them to request to be interviewed together.

Prior to the decision to loop, Mrs. Smith and Mr. Brown had team taught with their current classes. The school administration had previously implemented looping in the school through multi-aged classes and traditional looping of fourth and fifth grade classes and was seeking to determine if there were any academic benefits to looping. Since Mrs. Smith and Mr.

Brown had a previously established collaborative working relationship, productive communication, and parent support for their teaching style, the administration asked both teachers if they would be interested in looping with classes from third to fourth grade. Mr. Brown explained “we had a really good class and the relationships developed really, really well so we decided we would try it.”

Mrs. Smith and Mr. Brown entered into looping with great expectations and positive outlook on the impact looping could have for each student assigned to their class. Mrs. Smith expressed an excitement to return to school for the fourth-grade school year since she had a previously established relationship with the students.

Starting the year, I already know the learning styles of each child, what motivated them, and where they were at academically. Where they are as far as their reading level, their writing level. So, I was excited to be able to reflect on that over the summer and really think of strategies that would help continue to push them forward. I anticipated being able to start off like going hard at the very beginning of the year instead of trying to learn that information like we typically do when starting a new year.

Mr. Brown expressed similar positive expectations for the start of the looping school year, “the expectations were high, we had a great third grade year, so we were hoping to piggy back on that and have a great fourth-grade year and really explore and challenge these students.” In addition to being prepared for the students and knowing the students’ current academic levels and behaviors the teachers highlighted the benefits of not having to dedicate time during the first weeks of the new school year to teaching expectations, classroom protocols, and classroom community building. The expectations and positive outcomes Mrs. Smith and Mr. Brown expressed regarding the opportunity to loop with their class mirror the power of looping as explained by Maslow’s Hierarchy of Needs. Maslow’s Hierarchy of Needs (1943) explains the requirement for students to have lower level needs such as safety, security, love, and belonging met before the higher-level need of self-actualization can be addressed. The concept of looping

creates a community within a classroom and extended student-teacher relationships which address the lower levels of needs. Mrs. Smith and Mr. Brown's positive expectations and beliefs about the benefits of having established relationships with students and a set of pre-established classroom expectations prior to looping further support the use of Maslow's Hierarchy of Needs to explain the power of looping.

Shortly into the fourth-grade school year, Mrs. Smith and Mr. Brown were confronted with the realities of looping and they were vastly different from their expectations of looping. Mr. Brown expressed how students already being familiar with the teacher and their expectations caused unexpected challenges at the start of the fourth-grade school year since the students

came in and they pretty much thought they knew it all, and that hurt us a little bit. That put us back a little bit, and we had to make those adjustments to get them back on the track that we needed them to be on and help them be successful.

Mr. Brown explained how pre-established relationships and a sense of community empowered students with higher levels of comfort, which manifested in students failing to meet academic and behavior expectations. Mrs. Smith agreed with Mr. Brown that the comfort level of the students presented a challenge and caused students' behavior and academic achievement levels to falter. She elaborated by explaining the high comfort level of the students with the teachers led students to put forth less effort and the frequency with which students had to be asked to resubmit work because quality was not at standard or higher during the looping year.

The challenges which arose were highest in the spring of the fourth-grade school year. Mrs. Smith described the students' relationship with one another as going from a classmate to more like sibling and the behavior of the students followed suit. "Little things they typically wouldn't do like poking each other, kicking each other under the table, things we weren't seeing before started to emerge, I think because of the level of comfort with the same exact children."

Mr. Brown highlighted how difficult the task of creating groups, assigning seats, and setting up stations was since all the students were profoundly familiar which created a higher desire to socialize or engage in off task behaviors.

Though the reality of many of Mrs. Smith and Mr. Brown's expectations for looping turned out to be challenging and disappointing, specific student subgroups benefited from the established relationship and community environment within the classroom. Mrs. Smith explained that the high expectations and classroom procedures which carried over from third to fourth grade profoundly benefited the English Language Learners in the classroom to include the students in the Hispanic/Latino student subgroup. Having known expectations and familiarity with the teaching style from the previous year allowed students to focus more on the content and not focus on details such as how to answer a question or where resources could be located.

In addition, the teacher's knowledge of students' learning styles, strengths, and areas for improvement allowed Mrs. Smith and Mr. Brown to specifically plan for those students. Moreover, it allowed them a plethora of opportunities to find varied ways to incorporate additional practice and periods of instruction. Mr. Brown explained that the opportunity to work with Mrs. Smith to provide targeted instruction and remediation for specific student populations to include African American student subgroup in math led to higher levels of achievements for the individual students. Mr. Brown explained that the increased academic achievement speaks to the students and not the teachers, the students were supported and therefore developed a desire to learn and a work ethic which allowed them to succeed. Maslow's (1943) Hierarchy of Needs states that all lower levels of needs must be met before a student can develop the internal motivation and desire for the highest level of need of self-actualization. The relationships established between the students in the African American student subgroup and Mrs. Smith and

Mr. Brown during the looping experience and the classroom environment created the opportunity for the students' needs to be met and self-actualization to be reached. Mr. Brown stated Mrs.

Smith and himself believe that student achievement and desire to improve and succeed,

depends on the teacher, and the relationship they build right off the bat, it depends how much support you give and let them know how much you're going to be there for them and where or not the students believe that, we're there for them and help them believe in themselves and develop their confidence.

Mrs. Smith and Mr. Brown both expressed a firm belief that students were successful and achieving academic growth not because of looping or team teaching but because they took the time to develop relationships with students and based all activities and actions in their classrooms around high expectations for all students.

Although Mrs. Smith and Mr. Brown did not directly speak to the performance of the additional student subgroups addressed in this study that include Caucasian, Asian, and Mixed Race their responses indicated that looping had mixed effects. Mrs. Smith and Mr. Brown referenced observing individual students from various backgrounds being successful while other students from the same student background did not thrive within the looped classroom setting. Mr. Brown explained that many factors impact student success and that "for some children it was very, very effective. For other children, I think it was the worst things they've done for them." The mixed results observed by Mr. Brown mirror the quantitative results found in the analysis of the student's NC EOG scores. With the exception of the math scores of the African American student subgroup, there were no statistically significant difference in the achievement levels between the students assigned to a classroom practicing looping and the students assigned to a non-looping classroom. Mrs. Smith also highlighted that she felt looping would provide a community and safe environment for students whom had a difficult home life, when in reality, she observed the increased comfort level with the teacher and other classmates "caused an

intense behavior among them” that was not previously observed at school. The adverse impact observed by Mrs. Smith supports the findings that the assignment to a looping classroom did not aid in narrowing the achievement gap at Elementary School X.

Both Mrs. Smith and Mr. Brown did not express a desire to be assigned to a classroom practicing looping in the future but did express the importance of the professional relationship between the teachers to make looping a successful experience for both students and teachers. The looping teachers need to work well together, trust one another, respect one another, and be open to having critical conversations especially related to challenges or issues that arise. Mrs. Smith highlighted the importance of “making sure that it’s a good match for the teachers and making sure that all of the kids benefit, not just good for some of the kids but good for all of the kids.”

### **Administration Interview**

Following the interview with Mrs. Smith and Mr. Brown, an interview with Ms. Robins the principal of Elementary School X was also conducted. Ms. Robins is a Caucasian female and is in her 40<sup>th</sup> year in education. Mrs. Robins has been the principal of Elementary School X for 20 years. Ms. Robins has held a multitude of positions within the education environment to include teacher, demonstration teacher, instructional coach, instructional resource teacher, assistant principal and principal. In addition to serving in a variety of roles with increasing leadership responsibility within the educational community, Ms. Robins has also “developed courses for principals through the Distinguished Leaders in Practice initiatives through the North Carolina Principal and Assistant Principal Organization” as well as developed a school model designed to education and develop the whole child.

Ms. Robins explained that the culture and instructional focus of Elementary School X is unique, describing the culture with a single word, love. Ms. Robins emphasized that the culture

of Elementary School X is “built on the importance of relationship and valuing that first and foremost, and we sort of have a philosophy that if we love our children enough that we’ll find out what strategy will help them be successful.” The school administration team and the staff share a common belief that if they truly care about each and every one of their students, they will do whatever is required to help each child succeed. Ms. Robins explained that in looping and in all actions taken and strategies implemented

the teachers here so value the work they do because they recognize that it’s through that hard work that they’re impacting the lives of the children they teach, so we try to always make sure that we’re giving everything that we can to the children that are in our school.

Focused on a culture built on loving every student and taking any action necessary to help every student succeed, Ms. Robins described the student assignment process as one way the school sets students up for success and promotes equity among a diverse population of students. The student assignment process is implemented annually to place all students in their classrooms for the next school year. The process was used to place the students in Mrs. Smith and Mr. Brown’s classes which were selected to loop from third to fourth grade. Ms. Robins elaborated on the student assignment process described by teachers.

Ms. Robins explained that the school is in a pilot program with Myers and Briggs Foundation to use personality testing to inform student assignment. The Myers and Briggs Foundation utilizes the Myers-Briggs Type Indicator to measure perception and preferences to identify 16 personality types. Identifying an individual’s personality type provides details to how the person prefers to communicate and interact with others. Ms. Robins explained that the results of the personality assessment are used to “find the right match for our children and get as much information as we possibly can.” In addition to the personality testing, Elementary School X also surveys parents and ask them to provide information about their children, their hopes and dreams

for their children, and their insights on how their children learns best. Consequently, this information guides them with the decision regarding which teacher and classroom would be the best fit for their children in the upcoming school year. Ms. Robins pointed out that the student assignment process also takes into account ethnic diversity and equity. “We are always trying to take a look at the classroom to make sure that it’s evenly balanced on many levels.” Ms. Robins described Elementary School X as a small United Nation since the school serves such a diverse population of international students. Ms. Robins emphasized that the school administration and faculty “absolutely strive to always keep equity first and foremost in our minds when we do anything.” As the minor research questions focused on student subgroups, the descriptive statistics provided evidence of the equity among the classrooms and between the classrooms practicing looping and the non-looping classrooms. The one subgroup in which equity between the looping and non-looping classrooms was not balanced was the Asian student subgroup. As the quantitative analysis indicated, the impact of looping for the Asian student subgroup was unable to be calculated due to only one student in this subgroup being assigned to a looping classroom.

Ms. Robins shared the teachers’ excitement levels and positive expectations regarding looping along with the impact looping would have on student teacher relationships and student achievement levels. Ms. Robins first heard about looping when a principal from Florida visited Elementary School X for a leadership development program. The Floridian principal structured his entire school around the concept of looping in various configurations and had experienced success. Ms. Robins felt looping could result in positive outcomes for the faculty and students at Elementary School X. About five years later, Ms. Robins decided because of the teachers at Elementary School X, looping would be a good integration. As Mr. Brown previously mentioned

the school implemented structures similar to looping such as multi-age classes, however this was the first formal implementation of looping. Ms. Robins said the decision to implement looping was based on a combination of the teachers, personalities of the students, and support from parents. As expressed by teachers, Ms. Robins had equally positive expectations for the amount of additional instructional time the teachers would have at the start of the year since they already had established relationship with the students and knew the students' strengths and areas with which students struggled.

Ms. Robins' expectations for looping also focused on the opportunity for the teachers to cater specifically to the diverse academic needs of varying student levels within their classes. Ms. Robins explained that "children weren't stuck in a particular track, if they were really really great let's say in one strand of mathematics, but really struggled in another, they were moved to where they could best be served academically" and having the two looped classrooms allowed the teachers to work together to do creative teaching. For example, if "we had six very high students in Mr. Brown's room and very high students in Mrs. Smith's room, they would do some creative things like a book study between the two classes, the groups were fluid at all times."

For the most part, the realities of looping from the administrative perspective aligned with the positive expectations and impact Ms. Robins had for looping. When discussing classroom walkthrough and observations Ms. Robins mentioned "looping classrooms set the bar higher for what I looked for when I went into other classrooms because the engagement, the project-based learning, looping just lent itself for that in ways because they knew their children so well." Ms. Robins observed students working together to solve problems, innovate, and express creativity when completing assignments and projects at a level she had not witnessed in non-looping classrooms. Ms. Robins attributed the increased level of student engagement and

interaction to the relationships looping facilitated between teachers and students as well as among student peer groups. Ms. Robins was clear the success she witnessed in the looping classrooms is dependent upon “the willingness of the teachers to go above and beyond.” The factors Ms. Robins listed as being critical for looping to be a success include “the teachers’ personalities, their ability to see relationships as a critical factor, and their ability to build positive relationship with every student. Through multiple walkthroughs and observations, Ms. Robins noted Mrs. Smith and Mr. Brown worked well together, continually communicated, were flexible allowing their approaches to evolve to meet the needs of all students, and always kept the students’ needs first.

Mirroring Mrs. Smith and Mr. Brown experiences, Ms. Robins noted during the spring of the second school year, students had become very comfortable with each other to the point students were “almost too comfortable with each other.” Ms. Robins explained this comfort level is one of the factors that cause her hesitation when considering looping for more than two years. Ms. Robins recalled looping teachers sharing with her that by the spring of the second school year, they were observing some “bickering going on between the children, not during the academic data, but at recess” which was not typical of the classmates. Though Mrs. Smith and Mr. Brown revealed some additional changes in student behavior in the classroom, problems between students were not beyond the scope of classroom management as they were not escalated to the administration.

Overall, Ms. Robins described the decision to implement looping as a success from both a relationship and an academic standpoint. Ms. Robins indicated students’ achievement levels on the standardized assessments showed progress. Moreover, the ability of the students to articulate, collaborate, and use the skills they learned and developed during their third and fourth grade year

were indicators of the success of looping. Ms. Robins explained students conducted themselves in a more mature manner and worked better collaboratively in the looping classroom than students in non-looping classrooms of the same grade and higher grade levels.. Ms. Robins said she did not think this behavior can solely be attributed to looping but that looping “had something to do with it because they had been together, I saw more of that the second year they were together than I did the first year they were together.”

In regards to the specific student subgroups addressed in the minor research questions of the study, Ms. Robins observed that the assignment to a looping classroom positively impacted African American males and the English language learning population. This study did not specifically address the English language learner population but there was an increase in the average growth for the Hispanic/Latino student subgroup, though not in a statistically significant manner. Ms. Robins attributed the success of specific subgroups to the sense of family among the students in the looping classrooms and the students’ willingness to encourage one another. Ms. Robins recalled witnessing the students,

as they looked at their class achievement weekly scoreboards to see how they were doing, and they looked at their class run charts, if it was one of the lowest performing children that got their all-time best that week that was the performance that took them over the top and that was how it was celebrated. It was because of a specific student’s work this week that we got over the top and just to see that celebration of the whole class rallying around this one child, I’m sure that they probably knew he struggled somewhat, that he was the one that them their all-time best score, you know it was that kind of celebration, that kind of acceptance, and that kind of we’re all in this together kind of feeling that helped all subgroups do better.

Following the looping experience with Mrs. Smith and Mr. Brown’s classes, Ms. Robins viewed the decision to implement looping as a success and encourages other educational leaders to be open to new structures and instructional strategies for their schools but to be sure to consider all the factors. Ms. Robins encourages other educational leaders to consider looping but

the recommendation to consider looping comes “with a lot of thought and consideration for who goes into that class and who teachers that class.”

### **Chapter Summary**

This chapter provided detailed results for the three major and five minor research questions posed in this study. The quantitative results indicated that overall the assignment to classroom practicing looping did not have a statistically significant impact on student achievement scores as measured by the NC EOG. Nor did the assignment to a looping classroom have a statistically significant impact on narrowing the achievement gap present between Caucasian and minority students. However, the quantitative data analysis indicated that the assignment to a looping classroom had a statistically significant positive impact on the mathematical achievement levels for students in the African American student subgroup. The positive impact on the mathematical achievement levels for students in the African American student subgroup was mirrored by the comments and observations expressed in the interview of the two looping teachers.

The qualitative results of this study indicated common threads among the looping teachers and the principal of Elementary School X. Elementary School X teachers and principal had high expectations about the opportunity looping would provide for the students to build relationships with their teachers and improve personally as well as academically. While the teachers’ expectations were high, the realities which transpired were in some aspect disappointing and unexpected. Principal Robins characterized looping as a success for both relationship building and academic achievement. Despite some behavioral changes in the students due to being “too comfortable” by the spring of the second school year as described by Mrs. Smith, Mr. Brown, and Ms. Robins, teachers, and the principal witnessed growth and

higher levels of achievement for the African American student subgroup due to the relationships forged and the opportunity to receive remediation and extra instruction. Overall, Mrs. Smith, Mr. Brown, and Ms. Robins believe that looping is not for all teachers or all students and that before the decision is made to implement looping within a classroom is made factors such as personalities, learning styles, and teaching styles need to be considered. The final chapter will present the discussion, conclusions, and recommendations of this study.

## **CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS**

### **Introduction**

In this chapter, a summary of the purpose, implications, and recommendations related to the findings in this study will be presented. First the purpose of the study and a review of the guiding hypothesis and research question will be presented, followed by the implications related to the results presented in Chapter 4, and lastly a review of the study limitations and recommendations for future research.

### **Purpose, Hypothesis, and Research Questions**

The purpose of this study was to investigate the relationship between student assignment to a classroom practicing looping and student achievement on the End-of-Grade exam (EOG) a state standardized test in an elementary school setting. The study took place at Elementary School X, a magnet school, located within an urban North Carolina school district. Elementary School X provided an opportunity to study NC EOG data for the fourth-grade cohort which consisted of seven classes, two of the classes practicing looping from third to fourth grade while five of the classes were traditional non-looping classes. The following research hypothesis and research questions guided the data collection and analysis:

### **Research Hypothesis**

The assignment to a classroom practicing looping will positively impact EOG standardized test achievement levels for student subgroups in a statistically significant manner.

## **Major Research Questions**

1. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for students?
2. Does the assignment of students to a classroom practicing looping narrow the achievement gap in a statistically significant manner?
3. How do teachers and administrators engaged in looping perceive its impact on student achievement?

## **Minor Research Questions**

1. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the African American student subgroup?
2. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Hispanic/Latino student subgroup?
3. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Caucasian student subgroup?
4. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Asian student subgroup?
5. Does the assignment of students to a classroom practicing looping impact EOG student achievement at statistically significant levels for the Mixed-Race student subgroup?

The research hypothesis and research questions provided the lens through which the NC EOG student achievement data was analyzed and the basis for the interview protocol. The quantitative data analysis revealed that overall the assignment to a looping classroom did not have a statistically significant impact on student achievement levels as measured by the NC EOG. The results of the student subgroup analysis revealed that the assignment to a classroom

practicing looping positively impacted the math achievement levels for the African American student subgroup in a statistically significant manner. In support of the quantitative findings, both the teachers and the principal at Elementary School X saw academic improvement amongst African American students in the looping classrooms. Interviews indicated that despite the high expectations of teachers, looping presented significant challenges. These challenges included negative student behavior due to familiarity and less academic engagement during the second year. The implications of the results of this study are presented in the next section.

### **Implication of Results**

The results of this study as presented in Chapter 4 have implications for a multitude of arenas within the education community. This section will present the implications of the study results for school districts, educational policy, educational practice, university research, and university teacher and leadership preparation programs.

#### **School Districts**

The results of both the quantitative data analysis and the qualitative analysis revealed that there are both positive outcomes and challenges when implementing looping. The mixed findings of this study are consistent with the previous research related to the benefits and controversies of looping (Hanson, 1995; Vann, 1997; Simel, 1998; Krogmann & Van Sant, 2000; Nichols & Nichols, 2002; Kohn, 2010; Booth, 2011; & Barger, 2013). The quantitative portion of this study indicated that the academic achievement levels as measured by the NC EOG for the African American subgroup of students was positively impacted in a statistically significant manner which creates cause for a school district to thoughtfully consider implementing looping within their educational setting. The study only revealed positive impacts on mathematical achievement levels of African American student but as identified by Boykin & Noguera (2011)

the achievement gap for African American student population is a persistent problem and despite efforts little progress has been made over the past 20 years (p.13). To this end, any strategy which indicates the ability to impact the achievement gap which is persistent in math and reading scores for minority students deserves the attention and serious consideration by school district and educational leaders.

Just as with many proposed and researched solutions and strategies in education, looping is not a simple solution to the complex problem of the achievement gap. In this study, the reading and math achievement levels of five specific subgroups of students were analyzed and only one group improved in a statistically significant manner which indicates that looping is an instructional strategy, which has the potential to help some students but may not be a positive experience for all students. It is also important to note that the significant difference in the number of male and female students assigned to non-looping classrooms compared to looping classrooms indicates that the positive impact of looping for the African American student subgroup may be specific to only male students within the subgroup. The population of students in the African American subgroup assigned to a classroom practicing looping consisted of four male students and one female student. Since there was only one female African American student assigned to a looping classroom the statistically significant impact of looping is unable to be determined. School district and school leaders should consider multiple aspects of diversity in their school and classrooms when considering the implementation of looping.

Since looping is a complicated process with multiple positive and negative outcomes as this study indicates, school districts and their leaders should be cautious and diligent in their research methods and decision to implement looping. School districts should fully explore the benefits and controversies related to looping and the intricacies of the specific educational

environment in which they intend to implement looping. As Ms. Robins, the principal of Elementary School X, recommended “schools should always be open and receptive to new frameworks, if you will, and new structures for your classrooms and for your students.” Ms. Robins reiterated there are many factors such as the teachers, the students, and the school culture that go into the decision to implement looping but she would definitely recommend it, “but it would be a recommendation with a lot of thought and consideration for who goes into that class and who teaches that class.”

### **Policy Consideration**

Along with careful consideration and in-depth research when considering the implementation of looping within a district or school, the results of this study have specific implications for current and future education policy. Current policies such as Every Student Succeeds Act (2015) which followed No Child Left Behind (2001) mandate increased accountability of individual student achievement levels and adequate yearly progress for all students. The policies focus on improving outcomes for specific student subgroups to include “economically disadvantaged students, students from major racial and ethnic groups, students with disabilities, and students with limited English proficiency” (NCLB, 2001). The results of this study and the observations of the looping teachers and the principal of Elementary School X indicated that the assignment to a classroom practicing looping has positive impacts on both relationships and achievement levels for one specific student group. These student subgroups include African American students as supported by the quantitative results, as well as the Hispanic/Latino students and other students with limited English language proficiency as supported by the qualitative results. This study also indicates that looping may hinder or cause the achievement of other student subgroups to remain stagnate. In terms of educational policy,

policy makers should not discard looping even though it may not be a solution that is best for all students. Instructional strategies are often not one size fits all and do not often work for all students. School leaders must utilize a combination of instructional strategies and frameworks to meet all students' needs within the diverse atmosphere of today's schools. Policy makers and educational leaders will have to be creative in the grouping of students and advancement of students to bring about the best possible outcome for all students in the end.

With any policy making decision, supporters and critics are prevalent, individuals in positions to shape educational policies at all levels of education, from the school of the federal government, should conduct research and make decisions based on what is best for the students. In the case of looping, potential education policy could call for the looping of only a specific student subgroup or the looping of students within a specific content area. For example, based on the results of this study a policy could be created which calls for the looping of African American students with their math teacher for a portion of the students' years in elementary school. The decision to implement such a policy would require buy-in from school and community stakeholders as well as research such as the findings of this study to support the policy. A policy focused on a specific ethnic subgroup addresses the mandates of federal policies to increase the outcomes of identified subgroups to include racial and ethnic subgroup but creates a point of controversy since the policy requires the segregation of a specific ethnic subgroup for the looping. The possibility of misinterpretation of such a policy could stem from a belief that the policy is segregating and discriminating against the target group which could lead to a lower quality of education or from a belief that the policy is unfairly elevating and providing a higher quality education to that specific subgroup. In addition to the potential social backlash of a policy specifically targeting a single student subgroup, researchers such as Wilkins (2015) found that

decreased racial segregation of individual classroom populations positively impacted the narrowing of the achievement gap (p.122).

As with any educational policy, benefits and controversies exist; however, the focus must remain on improving student outcomes and narrowing the persistent achievement gap. The results of the quantitative portion of this study highlight an opportunity to narrow the mathematical achievement gap for African American students in elementary school which could have an impact on the future opportunities available to the students in areas such as Science, Technology, Engineering, and Math (STEM). Brown et al. (2015) assert that developing and maintaining an achievement ideology is essential for student to succeed in school (p.150). Achievement ideology is the personal “fundamental belief that academic success in school equates to success in life” (Brown et al., 2015, p. 150). Developing educational policies which narrow the achievement gap and increases opportunities such as STEM careers for student subgroups including African Americans would help to create a lasting achievement ideology. In addition, designing and implementing educational policies targeting specific subgroups addresses the federal mandates to improve the outcomes of specific subgroups but challenges the current status quo in education which consists of one size fits all policies and strategies. Policy makers would benefit from addressing equity and not equality. “Equality is an expectation of even-handed treatment” (Caldwell, Shapiro, & Gross, 2007, p. 16) and does not account for differences between individuals and groups. While equity “deals with differences and takes into consideration the fact that this society has many groups in it who have not always been given equal treatment and/or have not had a level field on which to play” (Caldwell, Shapiro, & Gross, 2007, p. 16). Developing educational policy addressing equity and accounting for the differences

among student subgroups could lead to narrowing the achievement gap and increasing achievement levels for all students.

In addition to specific student subgroup results of this study having implications for educational policy, the theoretical framework and experiences of Mrs. Smith and Mr. Brown highlight a gap in the consideration of Maslow's (1943) Hierarchy of Needs (MHN) when drafting policies. MHN (1943) theory outlines five levels of needs which must be satisfied for an individual. The theory mandates that the lower level needs of an individual must be met before the higher-level needs begin to influence the individual's motivations and desires. Mrs. Smith noted that looping created a comfort level within the classroom and among the students that led to the students trusting one another, showing each other kindness, and feeling like they belonged. Relationship formed over the two-year time period addressed the three-basic level of needs as highlighted by MHN (1943) and created an opportunity for the students' higher-level needs of esteem and self-actualization to be fulfilled. Mr. Brown emphasized that the long-term relationship developed with the students and their parents through the looping process created a level of comfort in which the students "know you're going to be there and know that they can trust you because they know you."

The importance of relationship building and fulfillment of a student's basic needs to include physical safety, nutrition, belonging, and love should be the cornerstone of educational policies. When policies focus only on the achievement level and student outcomes as measured by standardized tests, the essential needs which must be met before a student can have the desire and motivation to succeed are not being addressed. Policy makers should design educational policy with MHN (1943) theory in mind and create implementation plans and instructional strategies which encourage relationship building, creating a sense of belonging in the classroom

and aid districts, schools, and teacher in meeting the physiological and safety needs of all students. The results of the qualitative portion of this study and previous research (Freitas & Leonard, 2011; Milheim, 2012; Taormina & Gao, 2013; & Nunez, 2016) regarding the importance of MHN (1943) theory and meeting students lower levels of needs to allow for increased motivation and achievement support a shift away from outcomes focused policies to policies which nurture and address the needs of the whole child.

### **Practice**

The results of this study have several implications for educational practice. First, the study identified the student assignment process in place at Elementary School X. The process as described by the teachers assigned to the looping classrooms and Ms. Robins indicated a detailed system. This system took into consideration student achievement levels, student behavior, student personality traits, student learning styles, teaching styles, and parent input. A high level of importance was placed on the pairing of a student with a teacher who could best meet the needs of the student. In addition, Ms. Robins indicated that throughout the annual student assignment process the staff is;

very mindful that every child has a level playing field, whether they are very high performing or they need a lot of remediation, whether they are white, black, Chinese, Indian, we are always trying to take a look at the classroom to make sure that it's evenly balanced on many levels.

The importance Ms. Robins places on equity among classes in all aspects to include student academic level, ethnicity, and behavior speaks to Elementary School X placing equity as a main focus and concern. Administrators, counselors, and teachers should strive to create balanced and equitable learning environments for all students. Creating and implementing detailed and specific student assignment processes could create a learning environment that contributes to the

narrowing of the achievement gap as found by Wilkins (2015) that decreased racial segregation of individual classroom populations contributed to a decrease in the achievement gap (p.122).

Secondly, the results of the qualitative portion of the study pointed to the importance of the relationship between teachers working together in a looping environment and planning when teaching a looping class. Mr. Brown explained that he met constantly with Mrs. Smith “whether it’s five minutes before school or after school or we text each other on the phone to talk about what we’re seeing positively or negatively” the continual communication was essential to meeting the needs of the students and preparing for the upcoming lessons. Mrs. Smith agreed that communication and flexibility with planning and scheduling was essential to success in the looping classrooms. Mrs. Smith explained if she had not looped with a partner teacher “who was open to that level of communication, that level of planning, and that level of honesty” the experience and work environment would have been stressful and less successful. The feedback from the looping teachers highlights the need for administrators and teachers to ensure the teachers chosen to lead looping classrooms are the correct fit for the students, the type of class structure, and each other if there will be multiple teachers looping together. The importance of selecting teachers and students who are the right fit for looping was mirrored in Ms. Robins’ interview and her recommendations to educational leaders who are considering implementing looping within their district or school.

Lastly, the quantitative results of this study indicated only a single content area of a single student subgroup was positively impacted by the assignment to a classroom practicing looping in a statistically significant manner. The outcomes of the study highlight the importance of conducting research to determine if a specific classroom structure or instructional strategy is best suited for the school and classroom population being served. As mentioned by Ms. Robins,

“schools should always be open and receptive to new frameworks, if you will, and new structures for your classroom and students” but all factors and potential benefits and controversies related to the framework or structure should be considered in detail. The results of this study indicate that in a similar setting to Elementary School X, looping has the potential to increase math achievement score for the African American student subgroup in a statistically significant manner. However, in a different school setting with a different culture and different participants the impact of looping may be different. Due to the multiple variables that can impact student achievement and the implementation of an instructional strategy such as looping, school leaders and teachers alike should conduct further research to determine if the use of looping would be beneficial for their students, teachers, and school community. The results of this study open the door for the possible future use of looping in an elementary school setting and encourage practitioners to consider non-traditional instructional strategies to address educational problems to include the persistent achievement gap.

### **University Research**

This research study was conducted in response to a request from Ms. Robins the principal of Elementary School X. Ms. Robins was interested in conducting a research study to better understand the possible relationship between the assignment of students to a classroom practicing looping and student achievement levels. Due to the request for the research study being generated by the administrator and the faculty of the research site, access to the necessary data and research participants was swiftly granted by the district and other gatekeepers. The actions by Ms. Robins of reaching out to a local university to request a researcher opened the door for this study and should be a model for future opportunities for collaboration between local school districts, schools, and universities. The actions of Ms. Robins and the willingness of the

university to submit the request to current students conducting research symbolizes the building of a bridge between research and practice in the education community.

Creating an opportunity for educational leaders and practitioners to conduct research within their school sites, which addresses specific concerns and challenges they face daily without taking away from instructional or planning time would allow for the field of educational research to directly meet the needs of the district and school leaders they serve. The collaboration between universities and school districts would also create an opportunity for educational research to directly impact policy and practice. The results of research studies conducted as a result of collaboration between local school districts and universities could be presented directly to the policy makers within the district. The outcomes and experience revealed through the results of this study provide an example of the positive exchanges and relationships which can form between school, school leaders, and research. Recommendations for future research projects which could be conducted with local school districts and schools are presented later in this chapter in the second on recommendations for future research.

### **Educational Leadership Preparation**

Though this study was conducted to measure the impact assignment to a looping classroom has on student achievement scores it is important to address the broader implications the study has on the school leadership preparation. Future educational leaders must have a variety of frameworks and instructional strategies to produce positive outcomes for all students. Leaders should be armed with the knowledge of how processes such as student assignment, teacher pairing, and classroom instructional strategy can impact different student subgroups and populations. The ability for educational leaders to select and modify strategies which address the specific needs of their school, faculty, and students is essential to the future of education.

Creating a multitude of opportunities within leadership preparation programs to prepare future leaders to be informed and culturally relevant instructional leaders should be given priority. In leadership preparation, a gap exists between policies, theories, and practice. Creating focus on the bridging the gap with practical strategies backed by the understanding of the theories and theoretical frameworks which are the basis of the strategies would allow future leaders to understand the and implement the strategies while giving them the opportunity to be flexible to fit a strategy to the specific needs of their school and students.

Preparing leaders to understand that there is no one size fits all solution to narrowing the achievement gap, fostering equitable learning environments, or improving achievement levels for all students rather different student subgroups and different educational environments require different approaches. The results of this study indicating that math achievement among African American students was improved is a prime example. The results of this study do not immediately indicate that looping is not successful and should not be used, but rather draw attention to the potential power of looping to narrow the math achievement gap for a specific student subgroup. The results of this study and other looping studies (Rodriguez & Arenz, 2007; Drew, 2014; Washington, 2015; Wilkins, 2015; & Lord; 2017) should be utilized to educate future leaders regarding the need for multiple approaches within a single educational environment to a complex problem such as the achievement gap.

### **Limitations of the Study and Recommendations for Future Research**

This study provided analysis of the specific instructional methods of looping implemented within a unique school setting and with a single cohort of students. Though the study provided insight into the impact of assignment to a looping classroom on NC EOG achievement levels, the study was limited in several ways to include generalizability and sample

size. The limitations of this study will be presented in this section along with recommendations for future research.

### **Limitations**

Due to the study focusing on a single elementary school site and a specific cohort of students who have experienced looping for a single year the applicability and relevance is limited to contexts that would be similar in nature. Generalizability is therefore limited. In addition, the elementary school site chosen for the study is already identified as high performing and is a magnet school in which the students apply to attend. This is unlike a traditional school in which students are assigned based on address. The fact parents intentionally apply and enroll students at the study site introduces a possible selection bias. The focus on the single quantitative variable of EOG scores further limits the findings of the study, as the specific assessment is not utilized in all states or all elementary schools. In addition, teacher effects are nested within the treatments effect since there is a single treatment of the assignment to a looping or non-looping classroom and the teachers were only selected because the school site began the implementation with the current fourth grade cohort during their third-grade year. Since the research model utilized in this study does not address teacher quality the teacher effects on student outcomes is a limitation of the study. Lastly, the study focuses solely on the investigation of the relationship between assigning students to looping classrooms and increased student achievement on the EOG standardized test.

Following the completion of the quantitative data analysis, the number of students in the Asian student subgroup assigned to classrooms practicing looping presented an additional limitation to the study. Since only a single student in the Asian student subgroup was assigned to

a classroom practicing looping, the study was unable to assess if the assignment to a looping classroom impacts the reading and math EOG achievement levels for this subgroup.

### **Recommendations for Future Research**

This study provides a basis for further research in the areas of looping, teacher quality, non-traditional instructional strategies, influence of MHN (1943) on student outcomes, equity, and closing the achievement gap. This study did not examine student subgroups such as gender, economically disadvantaged students, English language learners, retained, academically gifted, and special education. Future studies are needed to assess the impact of looping on these subgroups of students. This study assessed the impact of looping in an elementary school setting for two years with a single cohort of students, but the strategy of looping can be implemented for more than two years and at different grade levels. Further examination would be required to study the best length of time for looping and the grade levels which would benefit most from looping. In addition, this study took place in a unique school setting. Elementary School X is a whole-child focused international magnet school located within an urban school district. In addition to the unique school setting, the school's performance levels were above district and state levels prior to the start of the study. Through future studies, researchers could examine the impact of looping in other school settings to include rural, suburban, low performing, larger population of students assigned to classrooms practicing looping, and non-magnet schools to determine the impact of the school setting on the success of looping.

Along with further investigation into looping, student subgroups, and different research sites further research is needed into the role teacher quality has on the effectiveness of looping. This study did not include teacher evaluation measures. Further study needs to take place to determine if the quality of the teacher, selected teaching style, and the methods utilized by the

teacher impact learning in a looping environment. Including measures of teacher effectiveness in a study would allow for the research to determine if it was the quality of the teacher that impacted learning rather than looping alone.

Along with expanding research related to looping and teacher quality, the impact of MHN (1943) theory on student outcomes and performance, needs to be addressed. Further studies including a measurement of the satisfaction of each level of needs on the hierarchy prior to looping, during looping, and after looping would expand the understanding of how looping impacts the students at varying needs levels differently. More in-depth research into individual need stratification level would further explain the varied impact of looping found in this study.

This study centered on two teachers whom decided to loop with their classes from third to fourth grade after the students were assigned. In further quantitative studies a random assignment of students to looping classrooms and the decision for teachers to loop being made independent of student assignment would create an opportunity to ensure the population of looping students is representative of the study population, increases internal validity of the study, and decreases bias. Though this study did utilize matched pairs to decrease bias within the study, randomization would further reduce bias. Along with reducing bias, the random assignment of students would ensure each subgroup being investigated was represented in an equitable manner. In this study, the impact of assignment to a looping classroom on the Asian student subgroup was unable to be determined due to only one student in this subgroup being assigned to a looping class. This study also found there were significant differences in the number of female, male, and students in the Mixed-Race subgroup assigned to non-looping classrooms compared to looping classes which could have an impact the study results. Conducting a study with balanced student assignment in the areas of gender, ethnicity, and other factors increases the reliability of the

results and the further informs educational leaders on the potential impact of looping. More equitable student assignment from each identified subgroup to the treatment groups would allow for a complete investigation.

In this study only, the African American student subgroup achievement levels were positively impacted by the assignment to a looping classroom in a statistically significant manner. In response to this finding, further research to investigate looping of a specific content area such as math and a specific student population such as African American students could be beneficial to identifying instructional strategies which narrow the achievement gap. In addition, further research should include a comparison of changes in achievement levels across the school, district, and state to determine if all students of a specific subgroup experienced statistically significant increases in growth or just those in the study population.

Lastly, this study utilized a mixed methods design with the qualitative portion providing clarification and more robust illustration of the results of the quantitative analysis (Lopez-Fernandez & Molina-Azorin, 2011, p. 1461). To create a deeper understanding of the practice of looping, the impact of looping, and school stakeholder perceptions of looping further emphasis is required on the qualitative research methods. Further research including observations of looping classrooms, interviews and surveys of stakeholders such as students, parents, faculty, and community member would provide more in-depth analysis of perceptions, impact, and realities of the instructional strategy of looping.

### **Conclusion**

In conclusion, the purpose of this study was to investigate the possible relationship between student achievement as measured by the NC EOG assessment and the assignment to a classroom practicing looping. The quantitative portion of this study found that overall the

assignment to a classroom practicing looping had no statistically significant impact on student achievement and did not narrow the achievement gap. When assessing the possible relationship between the assignment to a classroom practicing looping and student achievement levels for specific student subgroups the results indicated a statistically significant impact existed only for the mathematical achievement levels of the African American student subgroup compared to African American students assigned to non-looping classrooms. Due to the limited sample size of the Asian student subgroup assigned to a classroom practicing looping, the statistical significance of the impact on EOG achievement levels could not be calculated.

The qualitative portion of this study revealed looping teachers and principal of Elementary School X found looping improved and fostered deeper relationships and sense of community between the teachers and the students as well as among students in the classrooms practicing looping. The principal also noted increased levels of teamwork and collaboration among the students when observing the looping classes, during their second year together. Along with many positive aspects of looping noted by the teachers and the principal there were also challenges that arose. Teachers assigned to classrooms practicing looping experienced behavioral changes in students toward the second half of the year together to which they attributed students being too comfortable with one another. Teachers also noted an increased difficulty when forming groups, assigning seats, or setting up stations as the second year progressed. Reflecting on the positives and challenging aspects of looping the teachers and principal alike encouraged the use of looping. However, they cautioned the decision to implement looping is one which requires extensive research and careful consideration of the students being placed in the looping class and the teachers selected to teach the looping classes.

This study opens the door for future research to be conducted to address the impact of looping in other educational settings, looping with larger populations, and looping only specific content areas. As well as future research in the areas of measuring the effect of the teacher in a looping setting, understanding the effects of looping on other student subgroups, and the impact of student assignment and racial equity on the outcomes of looping. Important to note this study serves to bridge the gap between research and policy as the study was conducted in response to a request from the leaders within a local school to collaborate with the educational leadership preparation program at the university. Further collaboration will serve to continue to bridge the gap between research and practice while better preparing future educational leaders to improve schools and outcomes for all students.

## **APPENDIX A: ADMINISTRATOR INTERVIEW PROTOCOL**

### **Section 1: Educational Leadership Background**

1. Please provide me with a background of your experience as an educational leader?
2. How would you describe the instructional focus and culture of your school?

### **Section 2: Pre-Looping School Year**

3. Please explain the student assignment process at your school?
4. What decision as an educational leader led to the use of the current assignment process? Do you believe this process is equitable? Please explain.
5. Where did you first learn about and become interested in the instructional strategy of looping?
6. As an administrator what about the specific classed and school year lead you to consider the teachers request to loop with the students from 3<sup>rd</sup> to 4<sup>th</sup> grade?
7. As an educational leader what benefits did you believe looping would generate?
8. Did you have any apprehensions about implementing looping in two of your rising fourth grade classes? If so please explain.
9. Are you aware of Maslow's Hierarchy of Needs? If so please explain your understanding.
10. As an administrator do you believe implementing the instructional strategy of looping would address any specific needs on the hierarchy which may not be fully addressed by traditional instructional strategies?
11. Do you believe looping would provide for student's hierarchy of needs and lead to a more equitable education environment for specific student subgroups?

### **Section 3: Looping School Year**

12. As an administrator conducting teacher evaluation and classroom walkthrough did this process change at all for the looping classrooms? If so please explain how.
13. From your perspective as the school leader, did you witness any changes in the relationship between the two looping teachers or other teachers in the same grade level?
14. From your perspective as the school leader, did you witness any changes to the class dynamic, student behavior, or student academic performance in the looping classrooms?

### **Section 4: Post Looping School Year**

15. From your perspective as the school leader, was the implementation of looping successful? Please explain why or why not.
16. From your perspective as the school leader, at the conclusion of the looping school year what would you describe as the pros and cons of looping?
17. Would you approve the implement the instructional strategy of looping in your school again? Please explain.
18. From your perspective as the school leader, do you believe looping impacts student outcomes, behavior, and needs hierarchy of student subgroups (ethnicity, gender) differently? If so how?
19. What recommendations would you make for educational leaders considering implanting the instructional strategy of looping in their schools?

## **APPENDIX B: TEACHER INTERVIEW PROTOCOL**

### **Section 1: Teacher Background**

1. Please provide me with a background of your teaching experience including how long you have taught, which grade levels you have taught, and how long have you been at your current school site.
2. Do you have a grade level preference? If so which grade level and why?

### **Section 2: Pre-Looping School Year**

3. Please explain the student assignment process at the school?
4. What are your opinions and impressions of the current student assignment process?
5. Where did you first learn about and become interested in the instructional strategy of looping?
6. What about the specific class and school year lead you to request to loop with the students from 3<sup>rd</sup> to 4<sup>th</sup> grade?
7. What outcomes did you anticipate for yourself, the class as a whole, and individual student?
8. What did you view as the pros and cons of the instructional strategy of looping prior to beginning the process?
9. Are you aware of Maslow's Hierarchy of Needs? If so please explain your understanding.
10. Do you believe implementing the instructional strategy of looping would address any specific needs on the hierarchy which may not be fully addressed by traditional instructional strategies?

### **Section 3: Looping School Year**

11. Did your planning and facilitation of lessons change during the looping school year?  
If so please explain how.
12. How did looping impact our relationship with individual students and the class as a whole?
13. Did you witness any changes to the class dynamic, student behavior, student academic performance?
14. Did you collaborate with the other looping teaching during the year? If so, please elaborate.

### **Section 4: Post Looping School Year**

15. In your opinion was the implementation of looping successful? Please explain why or why not.
16. At the conclusion of the looping school year what would you describe as the pros and cons of looping?
17. Would you implement the instructional strategy of looping again? Please explain.
18. Looking back what would you have done differently during the looping school year and what impact do you believe those changes would have made?
19. Do you believe looping impacts student outcomes, behavior, and needs hierarchy of student subgroups (ethnicity, gender) differently? If so how?
20. What recommendations would you make for educational leaders and teachers regarding the instructional strategy of looping?

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