THE EFFICACY OF TITLE I FUNDING
ON A MID-SIZED RURAL SCHOOL DISTRICT

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Abstract

Since the passage of No Child Left Behind, schools have been held accountable for closing the income achievement gap. The income achievement gap is the difference of proficiency on state summative assessments between economically disadvantaged and non-economically disadvantaged students. Schools with high percentages of economically disadvantaged students receive Title I funds to help schools with this process. The Coleman Report (1966) established the theoretical framework of providing funds to give equal access to education while Maslow’s theoretical framework provided that in order to close income achievement gaps we must meet the basic needs of students. The research question asked if this funding was making a difference and how. This study analyzed the efficacy of Title I funding in a medium sized school district in Tennessee.

The researcher used a t-test to quantify the effect of Title I funding on the income achievement gap. The t-test involved two samples: Title I schools and non-Title I schools. The t-test used the summative assessment data from the Tennessee Comprehensive Assessment Plan (TCAP) for the academic 2015 school year. The researcher conducted principal interviews of Title I schools to gain a thick, rich description of how they spent Title I funds and the intentionality behind the spending in regards to closing the income achievement gap via Google Forms. The researcher interviewed non-Title I school principals for their perception of how they would close their income achievement gap. The researcher also analyzed the district Title I budget. While the effect was prevalent in both reading and mathematics, only mathematics met the 0.05 level of significance. The interviews resulted in best practices for this school district and coincide with the Coleman Report (1966) in how to spend the funds. School leaders can utilize these findings to make decisions on how to spend Title I funds intentionally to garnish the
greatest reward in terms of closing the income achievement gap. Further research should be conducted in other school districts or as a state level and then compared to these findings.
Acknowledgements and Dedication

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Chapter I: Introduction

No Child Left Behind perplexes many school leaders regarding the strategies to use with the accountability measures such as gap closure (Blank, 2011). The gap is the measured academic achievement disparity on state standardized tests between one group of students, such as Hispanic students, and the summative academic achievement of the whole population (National Education Association, 2016). While the gaps are prevalent and have been observed since the 1960s (Coleman, 1966), schools were not held accountable based on how well they closed the gaps between groups until No Child Left Behind. Furthermore, the gap that appears the hardest to close is between the economically disadvantaged and the economically non-disadvantaged. The complexity in closing the income achievement gap could be because poverty has a great impact on student achievement. This chapter delves into the problem with and the background of the income achievement gap, the questions that shaped this research, and the significance of this research.

Background of the Study

Title I seeks to improve the academic achievement of economically disadvantaged students by providing districts with federal grants (The Rural School and Community Trust, 2016). Title I is the federal expenditure on K-12 education (Camera & Cook, 2016). Title I began as part of the Elementary and Secondary Schools Act of 1965 (Davis, Jr., 1966). Title I provides resources to schools with high concentrations of economically disadvantaged students in the form of extra staff, extra reading and math instruction, before and after school programs, additional infrastructure, and teaching materials. While one only has to walk into a Title I school to see all the benefits of the federal funding, many researchers and theorists have inquired about the effectiveness of the program since its inception (Borman, 2002; Borman & D'Agostino,
The question “Has Title I done its job since its inception?” is complex and difficult to answer because of the changing of the Title I program over the past 40 years, the different ways schools use the funds, and the lack of empirical evidence from longitudinal studies that span the life of the program. This study is designed to gauge the efficacy of the Title I program in a medium sized school district in East Tennessee.

Schools have been pressed to close the income achievement gap since the No Child Left Behind Act passed in 2001. Historically, economically disadvantaged students have not performed as well on state achievement tests as their more affluent peers (Reardon, 2013). Gap closure has proved elusive to many of the schools in the United States. The lack of success in gap closure prompts many researchers, theorists, and practitioners to investigate the impact of social inequality on student achievement.

The equality of universal education is a central theme to democracy in the United States (Weissbourd & Dodge, 2012). In the words of John F. Kennedy,

“Let us think of education as the means of developing our greatest abilities, because in each of us there is a private hope and dream, which fulfilled, can be translated into benefit for everyone and greater strength for our nation” (Kennedy, 1961).

Education not only helps the individual but also helps the nation.

The disparity of educational inequality in the United States is reported well before the student starts third grade. One pivotal study found that three year olds from households of poverty knew 600 less words than middle class children of the same age (Hart & Risley, 2003).
The same researchers also found this vocabulary gap increased to 4,000 words by second grade. Both of these occur before third grade when most students begin their assessment career.

Coleman (1966) researched segregation in 1966 and found that segregation had a profound negative effect on student achievement. Segregation in 1966 pertained to racial segregation while the research presented in this paper is in the context of socioeconomic segregation. The argument of socioeconomic segregation is usually presented in the urban setting.

**Statement of the Problem**

The income achievement gap is the disparity in achievement between economically disadvantaged and economically non-disadvantaged students. The literature reviewed shows that schools have large gaps in achievement when they serve both economically disadvantaged and economically non-disadvantaged students (Petrilli, 2013). Reardon (2013) and Coleman (1966) found the income achievement gap was prevalent on the first day of kindergarten and would progressively widen through the students’ school careers. For example, King-Dickman (2013) found the summer slide resulted in learning decay for economically disadvantaged students that demonstrated a gap in literacy as large as four years by high school graduation. This gap was visible throughout the academic career of the disadvantaged students.

“On average, middle-class children are two to three grade levels ahead of their low-income peers at any given time, which makes it that much harder for teachers to instruct all students of the same age together” (Petrilli, 2013, p. 44). Reardon (2013) stated that even if the teacher were of high quality, the lower income students would still demonstrate lower achievement than middle-class students. Many schools have been challenged on finding effective
strategies to close these gaps when differentiated instruction and the hiring of effective teachers has not been fruitful (Blank, 2011; Budge, 2010).

Moreover, the achievement gap for the economically disadvantaged has grown in the last thirty years (Neuman, 2013; Reardon, 2013). Achievement gaps in 2001 were 30 to 40 percent higher than they were in the 1970s (Hanover Research, 2014). The growth of the income gap was attributed to many factors. First, the income inequality in America contributed to the income achievement inequality. The disparity of income widened in the United States over the last thirty years as the top one percent grew their wealth by ninety percent as the bottom twenty percent only grew their wealth by seven percent (Lucey, 2004; Neuman, 2013; Reardon, 2013). Neuman (2013) suggested that income inequality can result in academic predestination.

Secondly, upward mobility proved arduous and uncertain when compared to fifty years ago, meaning students born into poverty were likely to remain in poverty (Reardon, 2013). Thirdly, the disparity of work resulted in the disparity of income and the income achievement gap. There were more middle class jobs thirty years ago compared to the increased polarization of jobs today. There were either low-skill, low-wage jobs or high-skill, high-wage jobs, but the middle-wage jobs have decreased over the last thirty years (Reardon, 2013). Lastly, and perhaps most weighty, the American family has changed. There were less single parent homes and a smaller divorce rate fifty years ago than today. These circumstances show negative effects on student achievement, especially for the economically disadvantaged (Reardon, 2013).

As of 2013, 15% of the American population lived in poverty (Felling, 2013). The suburban rate was smaller and reported as 11.3% poverty (Petrilli, 2013). Of the 46 million people that were living in poverty in 2013, 16 million of them were children (Edelman & Jones, 2004; Felling, 2013). Shockingly, this was 21.9% of the population of children in the United
States in 2013 (Felling, 2013; Scherer, 2013) compared to 20% in 1990 (Garrett, Ng’andu, & Ferron, 1994). Edelman and Jones (2004) discovered these poverty rates were higher than they were when the War on Poverty was declared by Lyndon B. Johnson. However, other research showed that household incomes of all ethnic groups rose faster than the poverty rates in the past thirty years (Lucey, 2004).

Furthermore, the United States ranked first in childhood poverty among its industrialized peers (Edelman & Jones, 2004). Obviously, poverty developed gaps beyond student achievement. Research connected poverty to violence, death, conflict, and disability (Beloin & Peterson, 2000). This affected students in poverty because they rarely had places conducive to study at home (Rothstein, 2013). Moreover, children in poverty did not always receive the assistance they needed. Almost 85 percent of the children that receive nutritional assistance during the school year did not receive the same during the summer (Felling, 2013). Additionally, over nine million children in the United States did not have healthcare in 2004 (Edelman & Jones, 2004). Rothstein (2013) suggested that the lack of healthcare resulted in more absences which also led to the achievement gap. Additionally, low socioeconomic status has been linked to high school dropout rates, which evidence has shown could affect future generations and perpetuate a cycle of poverty (Hawkins, 2011).

Poverty has been attributed to many academic deficiencies that can handicap economically disadvantaged students. For instance, generational poverty has been attributed to language challenges that can prevent further learning (Ford, 2008). Additionally, lack of reading experiences were found to contribute to the achievement gap (Neuman, 2013). “In reading achievement, kindergarteners who are economically disadvantaged score approximately one-half
of a standard deviation below the national average” and “by the time they graduate from elementary school, the gap has grown to two standard deviations (Schacter, 2005, p. 158).

Furthermore, mathematics had the same effect as reading. Economically disadvantaged students who did not develop the basic concepts in mathematics were less likely to ever enroll in advanced mathematics classes (McKenna, Hollingsworth, & Barnes, 2005). Likewise, mathematic curriculums have been so scaffolded, or intended for skills to be built upon basic skills, that if the student does not grasp the basics, the student is much less likely to progress successfully (McKenna, Hollingsworth, & Barnes, 2005). Consequently, the combination of the necessity to master basic skills and the thwarting high absenteeism of economically disadvantaged students challenged many schools.

While some reformers have called on the schools to close the income achievement gap (Blank, 2011; Donovan, Galatowitsch, Hefferin, & Highland, 2013; Hawkins, 2011; Jepsen, 2009; Lezotte & Bancroft, 1985; Maryland State Education Association, 2011; National Education Association, 2011; Neuman, 2007; Reeves, 2003; Scherer, 2013), others have called for socioeconomic integration (Brighouse, 2007; DeLuca, 2011; Edelman & Jones, 2004; Hardy, 2006; Kahlenberg, 2006; Kahlenberg, 2012-2013; Potter, 2013; Rusk, 2011; Schwartz, 2011; Woolley, 2008). One out of seven U.S. schools had over 80 percent minority and 75 percent of these schools had economically disadvantaged majorities (Hardy, 2006). Similar research added that 50 percent of elementary students attended a school with an economically disadvantaged population of over fifty percent (Kahlenberg, 2006).

Petrilli (2013) found segregation was especially harmful to economically disadvantaged and African American students, but Kahlenberg (2012-2013) reported the negative consequences of segregation were from concentrated poverty instead of racial concentration. Other research
concluded large concentrations of poverty exponentially compound these negative consequences (Rothstein, 2013). Consequently, economically disadvantaged students from high-poverty schools did not do as well in college as economically disadvantaged students from economically integrated schools (Petrilli, 2013).

Similarly, large areas of concentrated poverty showed the ability to change behavior (Foulkes & Newbold, 2008). For instance, distressed neighborhoods with dilapidated buildings have been connected with more student disciplinary actions and threaten school outcomes (Woolley, 2008). Additionally, students who came to school having learning as a low priority forced teachers to focus more on discipline which led to lower achievement and a larger gap (Rothstein, 2013). These schools also strategized and dealt with lower vocabularies and higher mobility rates (Kahlenberg, 2012-2013). Inversely, some researchers have concluded higher socioeconomic neighborhoods could have positive effects that outweigh the negative effects of the neighborhoods where there have been high concentrations of poverty (Kahlenberg, 2006; Rothstein, 2013; Woolley, 2008). Research propagated that African Americans who lived in more affluent neighborhoods measured by average household income performed better academically (Woolley, 2008). Hawkins (2011) illuminated hope by reminding that at-risk does not always mean unsuccessful.

While a vast amount of research has been performed on racial segregation, socioeconomic segregation in urban areas, and the income achievement gap in the scope of minority gap, there has not been enough attention paid to the income achievement gap in rural areas or on the white rural poor. The problem presented is that of closing the achievement gap in a way that can be meaningful for both rural and urban poor.
Purpose of the Study

The purpose of this study is two-fold, thus the mixed-methods approach was chosen. First, the purpose of the quantitative section is to measure the efficacy of the Title I program in the chosen school district for this study. Secondly, the purpose of the qualitative portion is to richly describe the best practices of Title I schools in the chosen school district of the study. The qualitative portion of this study reveals insights about Title I that can be applied to non-Title I schools through local funding, logistical or infrastructure rearranging, or simple awareness. Furthermore, the results of this study can be used to close the income achievement gap in non-Title I schools and form comprehensive district level approaches to this goal.

The federal government spends over $14 billion on Title I funds a year. This study is significant in that it evaluates the efficacy of Title I schools in one district regarding closing the income achievement gap compared to non-Title I schools in the same district. This study defined the benefits of Title I schools in this district through principal interviews and seek to create a best practices of Title I schools for closing the income achievement gap. It identified programs, infrastructures, and strategies that Title I schools employ that are not being employed by non-Title I schools.

Theoretical Framework

The theoretical framework of this study hinges on the theories of Abraham Maslow and this hierarchy of needs (Medcalf, Hoffman, & Boatwright, 2013). Children need their basic needs met before they can achieve at rates needed to close the income achievement gap. The literature reviewed points to several ways that schools do this to meet the needs of their students and make a positive impact on their lives and achievement. Interventions from school breakfast, free and reduced lunch, brunches, extended school days and year, modified calendars, are among
the topics discussed in the review of literature that are used to help close the income achievement gap.

The theoretical framework for this research continues with James Coleman’s report in 1966 on the effects of segregation. The report found that minority and socioeconomically disadvantaged children performed better when in more affluent schools. Socioeconomic integration has taken a new spotlight since No Child Left Behind highlighted this demographic as an achievement gap that schools must close. The theories of socioeconomic integration remain the same, but the studies have multiplied supporting the action.

This theory holds much weight as a pragmatic way to curb concentrated poverty within large urban areas. However, in states that are largely rural, such as Tennessee, the idea contains less functionality. There are no options for spreading out the poverty in some districts because all schools in some districts have a poverty majority (Tennessee Department of Education, 2015). The logical solution is to find best practices for closing the income achievement gap that can be generalized to other schools regardless of the percent of economically disadvantaged students within their school. The solution is the largest federal funding agent of K-12 education: Title I.

Theory suggests that by giving schools and districts more money, they are more effective at closing the income achievement gap (Coleman, 1966). Thus, the Elementary and Secondary Schools Act and Title I was created. However, some of the literature reviewed contested this theory and even contradicted it. The theory behind Title I funding is that if schools are struggling with poverty and underfunding, the obvious solution would be to grant them additional funding (The Rural School and Community Trust, 2016). The conceptual framework that drives this study is that principals who lead Title I schools are heavily reliant upon the support provided by Title I funding while principals of non-Title I schools find ways to meet the same criteria without
the same funding. The study is driven by the conceptual framework that Title I schools are able to meet the needs of economically disadvantaged students more by funding personalized programs with strong intervention techniques. The assumption of this conceptual framework is that Title I schools are different from non-Title I schools and are more effective at closing the income achievement gap.

Research Questions

There were two questions that guide this mixed-method study.

1. In the school district chosen for the study, what comparisons may be made regarding achievement gaps between Title I schools and Non-Title I schools?
2. What are the best practices of Title I schools at closing the income achievement gap?

The culmination of the answers to these two questions could help answer the broader, more generalized question of how the income achievement gap could be closed in all schools.

Limitations and Delimitations

The preliminary section of this study is limited to data collected by the state of Tennessee Department of Education. The first part of this study uses data from the state report card and is therefore limited by the accuracy of the data reported by the Tennessee Department of Education. The interview portion of this study is limited by the perceptions and experiences of principals and their awareness of Title I funds.

There are limitations and delimitations of the study that may affect the generalizability and interpretation of data. Several other factors aside from Title I funding play a role in the income achievement gap. The descriptive nature of the income achievement gap is limited because one could have a large gap and still have high percentages of proficiency or inversely have a small gap and very low percentage of proficiency. This study was delimited to the third
through eighth grades. This study was delimited to only using the data collected from one district because of the probability of gaining access to principal interviews.

**Definition of Terms**

*Brain drain* is referred to as the phenomenon when the most talented and most intelligent youth leave an area for lack of opportunity. Therefore, the best the community has to offer is unable to improve the impoverished, indigenous area through social capital and emergent middle classes (Jensen, 2013).

*Concerted cultivation* is the conscious development of the academic skills of a child (Neuman, 2013). This action is the purposeful and intentional actions of the parent to ensure the academic success of the student.

*Economically disadvantaged* is a term used for students that are enrolled in free or reduced lunch. This is a reported demographic under No Child Left Behind (Tennessee Department of Education, 2015).

*Economically non-disadvantaged* is the term used to define students who are not on free or reduced price lunch (Tennessee Department of Education, 2015).

*Income achievement gap* is the disparity between the achievement of the economically disadvantaged and the economically non-disadvantaged in terms of percent proficient (National Education Association, 2016). This is a measurable reporting category under No Child Left Behind and schools have been charged with closing this gap on a school and district level (Tennessee Department of Education, 2015).

*Laissez-faire* is a French term that translates as hands-off. The term is typically used to describe government or hierarchical institution (Gorton & Alston, 2009).
Learning decay is synonymous with summer setback and is also described as the decrease in learning over the summer. It described the phenomenon of student achievement decrease over a period of time when the students are not in school (Neuman, 2013).

Natural Growth is when the parents use a hands-off approach to the development of the academic skills of a child (Neuman, 2013). It is the rearing of a child in a way that allows the educational system to have the sole responsibility for the academic outcomes of a child. This is more of a laissez-faire approach.

The poverty line was described as $23,050 in income or less for a family of four (Felling, 2013). Children who belonged to families that earned below the poverty line were considered to be in poverty.

Power standards are learning standards that have been prioritized as more important than other standards. These standards are locally identified and labeled essential for grade completion. This practice became popular when standards grew and the possibility of teaching each standard with fidelity decreased in probability (DuFour, DuFour, Eaker, & Many, 2006).

School engagement is described as behaviors within the classroom (Orthner, 2010). This is a factor of immense intrinsic value to academic success and an imperative intangible to student motivation.

Summer slide is the loss of achievement during the summer months. While middle class students traditionally plateau or increase in achievement over the summer, economically disadvantaged students lose around two to three months (King-Dickman, 2013). This was also called summer reading setback (Allington, McGill-Franzen, Camilli, Williams, Graff, Zeig, Zmach & Nowak, 2010).
Organization of the Document

Chapter One introduces the study, gives the background of the income achievement gap and Title I, and provides the purpose of the study. Chapter One also states the research questions, provides limitations and delimitations of the study, and gives the theories around which the study is framed. Chapter Two is a review of the literature regarding economically disadvantaged students, the income achievement gap, success at closing the income achievement gap, and the history of Title I funding. Chapter Three provides the methods and procedures for the study, the population and characteristics of the schools involved in the study, and the analytical procedures for answering the research questions. Chapter Four provides the findings of the study in both a quantitative and a qualitative way. This chapter provides the results from the one-tailed t-test and the coded results of the principal interviews. Chapter Five discusses the Results of the study, identifies common characteristics present in successful Title I schools, presents recommendations for further study, and draws conclusions from the study.
Chapter II: Review of Literature

Introduction

Low socioeconomic status is consistently and persistently linked to low academic achievement (Coleman, 1966; Hopkins, 2005; Kahlenberg, 2006). Research suggested that socioeconomic status has the strongest correlation to student achievement (Hanover Research, 2014). Meanwhile, the amount of students living in poverty in the United States grew to 22% and is growing (Scherer, 2013). The recent recession and growing unemployment rates make the future of the situation appear dismal. The result is a “greater income gap among families, the reduction of social mobility, the decrease in middle class jobs, and increased competition among families for their children’s academic success” (Scherer, 2013, p. 7). “Economic inequality is real and growing. It can place low-income and high-income children on separate trajectories throughout school” (Neuman, 2013, p. 18). The shift of wealth has divided the middle class and created a greater disparity among the citizens of the United States (Rothstein, 2013). In short, the rich have gotten richer and the poor have gotten poorer. The hope of the American Dream is vanishing before its citizens’ very eyes (Reardon, 2013; Neuman, 2013; Scherer, 2013).

This dilemma has not appeared as just an adult problem. Teachers have seen the effects of poverty in the classroom every day, and it has resulted in a handicap that has created a subgroup that schools have labeled economically disadvantaged. Kathy King-Dickman (2013) found that “on average, students who come from poverty achieve less academically and drop out of school at higher rates that their wealthier peers” (p. 62). “Historically, low-income students, as a group, have performed less well than high-income students on most measures of academic success- including standardized test scores, grades, high school completion rates and college enrollment and completion rates” (Reardon, 2013, p. 10). Furthermore, there were a plethora of
associated disadvantages connected to economic disadvantage (Rothstein, 2013). The economic
disadvantage reaches all areas of a student’s academic experience and has social class system
implications for a student’s future.

Although teacher quality has the strongest correlation to student achievement for all
income levels, the problem is bigger than one person could ever overcome (Coleman, 1966;
Reeves, 2003; Stressman, 2006). The variables that contribute to the income achievement gap
are divergent and encompass all aspects of life. These variables included (a) parental
involvement, (b) social capital, (c) community resources, (d) school health, (e) school culture, (f)
teacher quality, (g) school leadership, and (h) neighborhood environment. Most of which were
anchored directly or indirectly to a geographic location and may have a determined academic
success for at-risk students. Therefore, social and geographic determinism may have
underpinned the American Dream (Neuman, 2013).

Research suggested solutions to the social determinism problem. There are schools that
swam upstream and defied the statistics to change the odds for their students (Donovan,
Galatowitsch, Hefferin, & Highland, 2013). Others suggested economic integration and breaking
up pockets of poverty as the most effective way to beat the income achievement gap (Neuman,
2007).

No Child Left Behind purposed the income achievement gap, or disparity between
economically disadvantaged and economically non-disadvantaged standardized test scores, as the
measurement of accountability for the subgroup deemed impoverished (No Child Left Behind
[NCLB] Act of 2001, 2002). Since No Child Left Behind was enacted into law, schools have
tried to close the income achievement gap by using best practices and reform models, many to no
avail.
**Income Achievement Gap**

The income achievement gap measured the disparity between the economically disadvantaged and the economically non-disadvantaged subgroups according to No Child Left Behind accountability (Hill & Barth, 2004). The gap was calculated by subtracting the percentage of economically disadvantaged students who were proficient in a given subject area from the proficiency level of non-economically disadvantaged students. The intent of No Child Left Behind was to close achievement gaps for subgroups such as the economically disadvantaged. Researchers have measured the gap between the rich and the poor and determined that it is growing (Edelman & Jones, 2004). Coleman found that the gap was evident from the first day of school and continues to grow progressively by grade levels (Coleman, 1966). “On average, cognitive scores of low-income 4-year-olds lag as much as 60% below those of their more affluent peers. Unfortunately, once they fall behind, children often stay behind” (Neuman, 2006, p. 29).

Edelman (2004) theorized, “The result of this disparity is a direct pipeline from school to prison” and “many high schools have become prep schools for jail” (Edelman & Jones, 2004, p. 134). In combination with this already bleak picture, Anyon and Greene (2007) found that “only 7% of very low-income students attain a bachelor’s degree by age 26” (p. 159). These findings presented a dismal future for the economically disadvantaged.

Research pinpointed the crux of the gap in reading and math achievement. “The reading achievement gap between children from more and less economically advantaged families is substantial and has been persistent” (Allington, et al., 2010, p. 412). Researchers concluded that one of the biggest factors to this reading gap was summer reading setback, whereas, economically disadvantaged students lose two to three months in reading level each summer.
while their more affluent counterparts gained or stayed the same (Allington, et al., 2010; King-Dickman, 2013; Schacter, 2005). Other research chose cumulative summer reading loss over poor schools as the indicator for the income reading achievement gap (Schacter, 2005). Furthermore, research cited that schools with a higher percentage of low socioeconomic students had fewer educational opportunities, had less summer activities, and lacked quality after-school enrichment (Rothstein, 2013).

Of course, many possibilities emerged that explained the cause of the income achievement gap. While Neuman (2006) attributed the gap to “differences in material resources and in-home environments” (p. 29), others have attributed the gap to the mobility rate of the poor (Foulkes & Newbold, 2008; Rothstein, 2013; Schafft, 2006). Furthermore, researchers looked past the achievement gap and exposed how the students at the receiving school were also affected in a negative way (Foulkes & Newbold, 2008; Schafft, 2006). High mobility rates have also been linked to disruption in social capital for communities (Foulkes & Newbold, 2008). “As areas increase in their levels of economic distress, out-migration is expected to rise, and in-migration is expected to decrease” (Schafft, 2006, p. 212). He goes on to theorize the highest probability of quality social capital was the first out-migrants to leave and not likely to have been in a group of in-migrants coming back (Schafft, 2006).

Coleman (1966) penned, “The school environment of a child consists of many elements ranging from the desk he sits at to the child who sits next to him and including the teacher who stands in front of the class” (p. 8). The reality of this perspective diminished any possibility of accurately pinpointing a finite fix for the income achievement gap with any sort of fidelity. Additionally, “school outcomes are influenced by a variety of environments and social processes
in the lives of children, both within and across the central microsystems of family, school, and neighborhood” (Woolley, 2008, p. 133).

**Success with Gap Closure**

Research revealed evidence that school systems reduced the income achievement gap in the economically disadvantaged subcategory. Whole state systems, like Kentucky, Illinois, Louisiana, and Washington, showed gap closure (Stone, Barron, & Finch, 2012). Common trends among all four states included (a) data driven decision making, (b) the ability to make appropriate changes to equate to dramatic results, (c) collaboration with stakeholders, and (d) environments that are respectful to all cultures. Kentucky’s goals also included intervention and professional development. Likewise, Louisiana’s high performing high poverty schools focused on safe and nurturing environments. Illinois’s Partnership Zone allowed systems to make salary, staffing, and scheduling decisions in exchange for dramatic student achievement gains. Washington’s goal by 2014 was to offer early education to children from birth to five years old to all at-risk students for better kindergarten and school preparation (Stone, Barron, & Finch, 2012). The research did not advocate a one-size-fits-all recipe to gap closure but presented trends that could not be marginalized. The researchers found evidence of states that have had success closing the gap as well as individual schools with the same success.

**Schools**

Two trends emerged in the review of literature on economically disadvantaged students: “Schools have a key role to play in efforts to reduce these gaps…” (Scherer, 2013, p. 7) and “Intelligence can be changed by learning experiences” (National Education Association, 2011, p. 38). Reeves (2003) found that the Milwaukee school system was successful closing the economically disadvantaged achievement gap. Schools such as Fern Creek Elementary School
were noted for closing the income achievement gap (Donovan, et al., 2013). It became increasingly clear that it was possible to close the income achievement gap.

**Fern Creek Elementary**

Fern Creek Elementary School in Orlando, Florida overcame the income achievement gap as a school by establishing a strong school family, fostering community involvement, and instituting best practices in instruction and intervention (Donovan, et al., 2013). They established a strong school family by solidifying consistent routines, using conscious discipline practices, and supporting school family rituals that build relationships. Fern Creek placed great value on community involvement by forging important partnerships, establishing a mentor program, creating the Fern Creek Elementary Foundation to help with supplies, and incorporating a clothing closet and food bank in their school. Their academic best practices did not stop at methodology and pedagogy but bridged the gap with the students by providing response to intervention (RTI) and creating a culture of learning with their professional learning communities (PLC) (Donovan, et al., 2013).

**High Expectations**

The research on schools that have been effective with economically disadvantaged students illuminated trends of common characteristics and practices these schools employed. One of the primary factors was high expectations with measureable goals. Expectations were clear, understandable, visible, and communicated regularly as the core values of the school. The goals of the schools were not vast and unattainable but were clear and had a focus on academic achievement (National Education Association, 2011; Reeves, 2003; Stone, Barron, & Finch, 2012; Stressman, 2006).
Schools were dedicated to quality and equity. Successful schools implemented a “common language for approaching instructional improvement” (The Achievement Gap Initiative at Harvard University, 2008, p. 2), high expectations (National Education Association, 2011), and a common understanding and commitment to high objectives (National Education Association, 2011). These goals were pervasive in the vision and mission of the school (Lezotte & Bancroft, 1985).

**Leadership**

Another common trait among successful schools researched was strong leadership by a quality principal. Effective principals studied were collaborative, fostered an environment for innovation, and were attentive to the needs of all stakeholders. Principals in highly effective schools saw diversity as a strength. The principals not only shared the vision with all adults in the system, including paraprofessionals, but they also had them attend targeted, informative professional development. The principals maintained the focus of the school, administered common assessments each month, and encouraged teachers to visibly exhibit proficient student work. The planning of the school was a collaborative, living document instead of a huge document that collects dust on a shelf. Effective principals measured all goals, not just the standardized test, and examined the effectiveness of all areas of their school improvement plan (National Education Association, 2011; Reeves, 2003; Rothstein, 2013; Stone, Barron, & Finch, 2012; Stressman, 2006).

Leadership qualifications included a combination of “passion and competence” (The Achievement Gap Initiative at Harvard University, 2008, p. 8) and encouraged caring relationships with both teacher and student (National Education Association, 2011). Leaders inspired both “urgency and possibility” (The Achievement Gap Initiative at Harvard University,
2008, p. 8). There was also a “commitment to continuous improvement” (The Achievement Gap Initiative at Harvard University, 2008, p. 8). “Laser focus on student achievement” (Reeves, 2003, p. 187) was a common quality administrators had in schools where gap closure was successful. Furthermore, school leadership kept communication lines open and problem-solved collaboratively (National Education Association, 2011; Rothstein, 2013). The school leader played a major role in equalizing social justice through schools (Hernandez & McKenzie, 2010). In accordance, research suggested extensive and specific leadership training in dealing with socioeconomic diversity as a best practice for closing the income achievement gap (Budge, 2010).

**Infrastructure**

The research for educational reform to close the income achievement gap alluded to infrastructural changes that made the school more conducive to an increase in achievement among economically disadvantaged students. For example, smaller class sizes were a common characteristic of successful schools that were predominantly economically disadvantaged (Jepsen, 2009; Stressman, 2006; Tajalli & Ophiem, 2004). The same studies also found block scheduling was linked to success with closing the income achievement gap. School based mentoring and increased instructional time were also common trends in infrastructural changes that had a positive impact on student achievement. After school programs were common. Schools also made dramatic changes in the schedule to allow for more time to be spent on literacy and mathematics during the regular school day (National Education Association, 2011; Reeves, 2003; Stone, Barron, & Finch, 2012). For instance, Reeves found that some elementary schools spent as much as three hours on literacy: two hours devoted to reading and one to writing (2003).
Preschool

Research advocated more devotion to preschool and kindergarten, more time in school, and equal access to high quality teachers, curriculum and instruction, and school resources (Hanover Research, 2014; Reardon, 2013; Scherer, 2013). Research also stressed that intervention programs target students who are truly disadvantaged (Stone, Barron, & Finch, 2012). Neuman (2013) suggested increasing programs such as one-to-one reading groups with students, strengthening parental involvement, engaging students’ minds, and economically integrating schools. Research has shown that child-centered, individualized programs designed to intentionally grow students both cognitively and socially can close the achievement gap caused by disparity in income (Hanover Research, 2014).

“Research shows that preschool programs -- if they are of high quality -- can provide an enormous boost that changes children’s lives forever” (Lamy, 2013, p. 32). Preschools that delivered high quality instruction with high quality professionals changed the academic trajectory of a student’s life forever. The school system received well prepared students for kindergarten and saved an estimated 3% of the total school budget every year for instituting high quality programs. The long term return on the dollar has been estimated at 3:1 for very expensive programs and up to 17:1 for the milder programs (Lamy, 2013). Systems reduced the income achievement gap with increased school readiness. “The earlier we are to intervene to reduce [the gap], the more effective we will be at eliminating them in the long run” (Reardon, 2013, p. 15).

Calendars

Some researchers looked to the calendar for ways a school system could close the achievement gap. Research showed that long summer vacations contributed to the achievement gap (Cooper, Valentine, Charlton, & Melson, 2003). Learning decay had such a marked effect on
student learning that some courts have required districts to provide educational opportunities during the summer. Some studies also showed that a modified calendar is associated with higher achievement in the economically disadvantaged population (Cooper, Valentine, Charlton, & Melson, 2003). Control of the school calendar has traditionally been monopolized by the school district level and has shown opportunity in the investigation of closing the gap with economically disadvantaged students.

**Intervention**

“Research-based principles of early intervention explode the myth that nothing works for economically disadvantaged children” (Neuman, 2007, p. 16). It was widely accepted that intervention should take place early in the students’ educational experience (Neuman, 2007; Stone, Barron, & Finch, 2012). Some programs started as early as the prenatal period while some began at the pre-kindergarten program. Early intervention can dramatically improve the odds for children at risk (Neuman, 2007). In one case study, literacy intervention positively impacted student achievement more than regular classroom instruction (Ransford-Kaldon, 2011).

However, the quality of the program was established as the determining factor of success (Lamy, 2013; Neuman, 2007; Ransford-Kaldon, 2011).

“More intensive programs produce larger positive effects” (Neuman, 2007, p. 18). The most successful intervention programs used professionals in instruction as opposed to paraprofessionals and volunteers. The programs had one-on-one and small group time with highly trained professionals. Successful interventions targeted those who truly needed them and focused on achievement and behavior (Neuman, 2007; Stone, Barron, & Finch, 2012).

Schools did not find time for intervention; they made time. Schools had to get creative with their schedules to implement intervention with fidelity. For example, many intervention
programs were using the lunch period as an intervention time. Some schools used the breakfast
time for intervention while others implemented a study hall. Homework was kept at a minimum.
The homework given at these schools was designed to help the students, not to keep them busy.
Students were able to complete it independently without a lot of help from an adult (Koch, 2009;
Maryland State Education Association, 2011; Neuman, 2007).

Curriculum

Reeves (2003) found that clear curriculum choices were one of the five factors of
d high-performing and high-poverty. “The most common characteristic of the 90/90/90 schools was
their emphasis on requiring written responses in performance assessments” (Reeves, 2003, p.
189). The schools deliberately used their special areas to improve student achievement (National
Education Association, 2011; Reeves, 2003; Stone, Barron, & Finch, 2012; Stressman, 2006).

The curriculum in successful schools was streamlined and research-based. What schools
lost in teacher autonomy, they gained in productive common practice. The curriculum allowed
opportunities for student participation and continuous common formative assessments that were
monitored and analyzed (Lezotte & Bancroft, 1985; National Education Association, 2011; The
Achievement Gap Initiative at Harvard University, 2008). Decisions were data driven and
progress was highly visible. Goals for reducing gaps were made public and ubiquitous. “The
most casual observer could not walk down a hallway without seeing charts, graphs, and tables that displayed student achievement information, as well as data about the continuous improvement students had made” (Reeves, 2003, p. 187). Trophy cases had academic awards, science fair projects, and essays to display successful student work. The closing of the income achievement gap was integrated into the climate and vision of the school (Lezotte & Bancroft, 1985; National Education Association, 2011; Reeves, 2003; The Achievement Gap Initiative at Harvard University, 2008).

Some have hypothesized giving systems with a majority of economically disadvantaged students, or even targeted schools with a high poverty rate, the authority to mold the curriculum around their target population. McKenna, Hollingsworth, and Barnes (2005) believed that mathematic programs need to “reflect the sequential, cumulative nature of mathematics” (p. 222). They also wrote that students needed flexible learning material because many potentially gifted economically disadvantaged students have a problem with waiting on other students to learn the material after they have mastered the skill (McKenna, et al., 2005). Attention must be paid to curriculum and planning to successfully close the income achievement gap.

Most research findings pointed to more time in reading instruction, especially at the younger levels. Reading skills were viewed as the building block to later success. As the focus of the curriculum moved from learning to read to reading to learn, many of the economically disadvantaged students were left behind. Studies showed a strong association with writing and literacy across curriculums in relation to other disciplines (National Education Association, 2011; Reeves, 2003). In the successful schools that Reeves studied, the schools had a common rubric for writing and high expectations (2003). The benefits found were clear information
processing and data that was used to diagnose obstacles to student learning that are not available from binary response (Maryland State Education Association, 2011; Reeves, 2003).

Reeves (2003) found that high performing, high poverty schools protect time allotted for reading, writing, and mathematics, even at the expense for other disciplines. Eighty percent of these schools also reported an increase in science scores. Furthermore, Reeves made the assumption that other tests, such as those in social studies and science, are more a reading test than a content test. Research shows that most history teachers preferred their students learn how to read in elementary grades instead of learning social studies (Reeves, 2003). In contrast to Reeves’s research, others have found that this approach leads to a decrease in student achievement and an increase in student disengagement (Renzulli, 2008).

Another factor among schools that successfully closed the income achievement gap was common assessments. The most successful common assessments were locally developed, administered weekly, and had multiple opportunities to improve. Grading was seen as coaching for improvement. Teachers exchanged papers for grading and reported the same scores. Principals were involved in the scoring. There was a uniform evaluation system to ensure inter-rater reliability. The schools had also prioritized power standards. These standards were shared with special areas teachers to help integrate other curriculum within their lesson plans (Reeves, 2003).

“Practices such as making learning more hands-on, involving students in curriculum planning, cooperative learning, peer-helping, mentoring and community service can actively involve students in their own learning” (National Education Association, 2011, p. 63). The National Education Association also suggested incorporating challenging activities with cognitive complexity. Researchers also suggested that involving students in the decision making
of curriculum, and allowing student choice motivated economically disadvantaged students that led to increased student achievement and gap closure (National Education Association, 2011; Renzulli, 2008). Furthermore, “students who are taught self-directed learning strategies are more apt to be self-managing, self-monitoring, and self-modifying” (Ford, 2008, p. 14). While Ford also found that students of a lower socioeconomic status benefited more from the traditional teacher-centered approach in the classroom, others have had success with self-directed portfolio and research projects (Maryland State Education Association, 2011). Michael Petrilli (2013) added “Poor kids, in particular, need instruction that is direct, highly structured, and buttressed by regular assessment to determine whether the learning is sticking” (p. 47).

Research showed that, in order to change the odds, programs “should compensate for gaps and accelerate instruction by using high-quality and fast-paced material” (Neuman, 2007, p. 20). Quality implementation of any program was congruent with reliable measurement of its effectiveness. The vision and goals of successful programs were constantly assessed (Neuman, 2007). The researchers found many programs that were credited with success such as Exploravision, science bowls, math competitions, and art competitions (Maryland State Education Association, 2011). However, Reeves (2003) found that none of the 90/90/90 schools had a magic program that ensured success (p. 191). The determining factor was the degree of implementation to which the proprietary program was implemented. Reeves further suggested that any program implemented with fidelity will prove successful.

**Collaborative planning**

Increased planning and collaboration time were characteristics of schools that were not only focused on school improvement but also on target populations like the economically disadvantaged. The time devoted to collaboration was routine, purposeful, and examined student
work. These structural interventions required common goals, a shared vision, and collaboration among the school, district, and community levels (Jepsen, 2009; National Education Association, 2011; Stressman, 2006; Tajalli & Ophiem, 2004).

Assessment

Assessment was another pivotal key to the success of schools that have closed the income achievement gap. Regular, ongoing testing and monitoring of student progress for the purpose of informing decisions and instruction was a trend. Frequent assessments allowed for multiple opportunities for improvement. Feedback was also frequent, accurate, and specific. Performance monitoring through information systems that assessed data via common assessments on a regular basis were one of the most common traits the researcher found of successful schools with a large economically disadvantaged population. Distinguished schools found multiple sources of data to create a constructive data analysis. Assessment was used as a tool for improvement as opposed to a finite checkpoint that may hold the terms of academic fatality (National Education Association, 2011; Reeves, 2003; Stone, Barron, & Finch, 2012; Stressman, 2006).

Teachers

Strong organizational structures were prevalent in successful economically disadvantaged schools. There were quality teachers, opportunities for capacity building, a well-established hiring process, and collaborative scoring of student work. Highly effective teachers established caring relationships, had a hard work ethic, and the schools had high morale. Teachers were also appropriately paired to teaching assignments based on student results. Teachers conducted action research in their classrooms for both achievement and student motivation. This action research often resulted in reflective corrections to the course (National Education Association, 2011; Reeves, 2003; Stone, Barron, & Finch, 2012; Stressman, 2006).
Many researchers referred to the teacher as the single most significant factor of student achievement (Blank, 2011; Coleman, 1966; Reeves, 2003). School systems saw that their greatest opportunity to close the gap with economically disadvantaged students was to hire quality teachers. Teacher salary and experience have been tied to student performance (Tajalli & Ophiem, 2004).

Many journal articles and book chapters highlight successful strategies for closing the achievement gap, and all have an overarching theme: underlying factors such as student engagement, teacher quality, teacher relationship with students, and systems of support for high expectations are critical to achievement gap work. (Stone, Barron, & Finch, 2012, p. 8).

**School Culture**

Successful schools had a culture that believed and said that all students can learn. There was also a culture of continuous improvement. This culture was always asking the question: “How can we do better”? Schools with a culture of continuous improvement set goals, assessed effectiveness, and modified to improve student learning. In this type of school climate, mistakes became opportunities (National Education Association, 2011).

School cultures that showed improvement at gap closure had a clear focus on a two or three goals as opposed to several goals. These schools closely monitored these goals frequently with visible tools such as charts. These schools had short, medium, and long range plans and effectively monitored their success. They targeted students that needed intervention and were diligent with working with those students (Reeves, 2003; Stone, Barron, & Finch, 2012). School culture was closely tied to the effectiveness of the school. In these schools, improvement was not a checklist but woven within the fabric of the school.
“Helping learners make the link between their culture and the new knowledge… is at the heart of ensuring that all students achieve at high levels” (National Education Association, 2011, p. 14). Schools were encouraged to develop curriculum that was culturally responsive by promoting interaction between students and families. Students thrived when the important people in their lives were engaged in the educational process of the student. “Personalized environments, when fully implemented, consistently show the largest effects… for students experiencing social and economic disadvantage” (Felner, 2007, p. 2). The value of family and community involvement was a common thread in research on economically disadvantaged populations.

**Community Support**

Furthermore, there was an attention to needs that go beyond what is traditionally offered within successful economically disadvantaged schools. Parents and community showed involvement in the student and school as a result of community partnerships and services (Reeves, 2003; Stone, Barron, & Finch, 2012; Stressman, 2006). Both the supporters of school reform to improve the income achievement gap and the propagators of economic integration looked to the community as an integral part of their plan for gap closure.

The key to community involvement was to engage all the stakeholders in the community including parents, businesses, community members, and other family members. These partnerships accomplished the “well-formulated strategic goals” (The Achievement Gap Initiative at Harvard University, 2008, p. 9) that were crucial to the success of any gap closure initiative (National Education Association, 2011; The Achievement Gap Initiative at Harvard University, 2008).
“More than thirty years of research indicates that children benefit from family-school collaborations, which provide parents with opportunities to shape their children’s learning” (National Education Association, 2011, p. 119). Schools that yielded the most positive results for economically disadvantaged students showed two way communications with families and a great number of learning opportunities for families. Research suggested that schools “provide families with training and resources that will support early literacy and help monitor homework” (National Education Association, 2011, p. 120). Schools also involved families with academic activities at home.

One successful program has been the summer book mobile that some schools incorporate to take books to the economically disadvantaged and read to the students to retard learning decay. Some schools have started a Parent-Toddler University to help families with children under four to get a head-start and begin kindergarten with a more level playing field. Other schools have seen success with parenting classes that began as early as the pre-natal period. Families were not only invited to take part in these school programs, but also encouraged to participate in the governance decision making in the school (Maryland State Education Association, 2011; National Education Association, 2011).

Consequently, enhanced access to the school for the family and community has also been seen as best practice for closing the income achievement gap. One of the most often cited reasons for under performing schools was parental involvement. Some have suggested that it was the teacher’s job to exhibit to parents how to get involved. This was performed successfully with emails, phone calls, staying after school, and improved recruitment. Volunteering was another productive way to get parents in the school building and provided a way for the community member to feel a sense of belonging in the school. One key to community involvement that has
been cited is creating a comfortable climate for partnerships (Maryland State Education Association, 2011; National Education Association, 2011).

Another strategy of community involvement that helped close the income achievement gap was to provide low income families with services that ensure the student has equal access to basic care such as medical needs, safety needs, and nutritional needs. Schools increased community involvement by partnering with these and other service providers. This support included breakfast programs, backpack programs, vision and dental screenings, and school resource officers. Most of these services or interventions were not provided by a single classroom teacher; therefore, it was imperative to create formal school policies for family involvement and that the administrator was active in these engagements (Maryland State Education Association, 2011; National Education Association, 2011).

Resources

One of the foundations of education equity was resources. “Family socioeconomic status has been linked to the access children have to books in their homes and neighborhoods” (Allington, et al., 2010, p. 411). Tools that monitored assessments, facilitated teaching and learning, and targeted where assistance was needed were imperative to the success of gap closure within schools. Staff development and the building of the collective capacity within the school were common trends for educational equity and school improvement. Personal, professional learning and equitable resources were keys to becoming a successful school (National Education Association, 2011; The Achievement Gap Initiative at Harvard University, 2008). Neuman (2007) suggested that to make real change in the achievement of the economically disadvantaged, schools needed to provide more resources, particularly human resources, parental involvement, engage students’ minds, and to economically integrate schools.
Social Capital

Researchers reported that parental involvement greatly affected student engagement, the probability of graduating high school, and achievement (Orthner, 2010; Hawkins, 2011). For instance, schools benefitted from highly educated parents by pressure placed on the school to deliver a quality education (Rothstein, 2013). However, economically disadvantaged students were handicapped by poverty as well as parental involvement and the resources provided by the parent. Research has shown a difference in the economically disadvantaged and more affluent students in the categories of

- print materials available,
- time spent being read to,
- level of books selected at libraries,
- time spent at libraries,
- time parents spent watching television, and
- degree of parental involvement

(Blank, 2011; Neuman, 2013; Rothstein, 2013; Schacter, 2005).

Neuman (2013) attributed the success of the more affluent students to concerted cultivation and the intentions of educational experiences being purposeful and consciously developed. Whereas the lower socioeconomic parents relied more on natural growth from a laissez-faire approach due to variables such as night shift work, working two jobs, as well as a lack of interest in the educational system. Despite the parental approach, there were some variables that society could not change. Single-parent families, low-income jobs, and night shift work are ails that society has not been able to avoid. There was a concerted effort to curb the effects of these intangibles. Evidence demonstrated the ability of teachers and other professionals
to fill a positive surrogate role for involvement (Orthner, 2010). Moreover, schools deemed it necessary to develop social capital and mentored academic success.

“Social capital, then, consists of the social relationships with a group and the quality of benefits accruing out of that relationship” (Stressman, 2006, p. 47). The research illuminated, either directly or indirectly, the importance of developing social capital in a school to close the income achievement gap, developed belief systems favorable of education, and fostered the importance of working hard in school (Woolley, 2008). Caring relationships with teachers, administrators, and paraprofessionals was a common trend throughout the body of research on closing the income achievement gap (Stressman, 2006). Furthermore, “resilience research has shown that the presence of just one caring adult in the life of a child can make the difference between success or failure” (National Education Association, 2011, p. 62).

The National Education Association (2011) defined resilience as “a set of qualities and circumstances that foster success despite risk and adversity” (p. 62). Common factors of resilience in a student included problem solving skills, an ability to overcome challenges, social competence, autonomy, and a sense of purpose. Some sources said that these traits can be fostered with exposure to role models, appropriate goal setting, and valuing persistence. Schools that provided for these basic needs and fostered these traits as a school culture demonstrated success with the economically disadvantaged population (Maryland State Education Association, 2011; National Education Association, 2011).

Motivation was another key element in successful gap closure. Research showed that motivation increased with success and best practices started with what students did know and build from that position. Research presented the importance of motivation and engagement as critical characteristics for economically disadvantaged students to perform well academically and
eventually graduate high school (Orthner, 2010). Some schools created motivational videos for their students involving local heroes, principals, and their school superintendent. Others posted motivational messages throughout the school that would bring encouragement to the student. Successful schools created a culture that de-emphasized innate intelligence, illuminated the ability to grow academically through hard work, and inspired the population to the revelation that anyone can do it (Maryland State Education Association, 2011; National Education Association, 2011; Stone, Barron, & Finch, 2012).

However, proponents of economic integration offered that these successful traits were already prevalent in middle-class schools (Kahlenberg, 2006). Social capital has already been integrated seamlessly into the fabric of middle-class schools. Traits of resilience are already modeled and transmitted to the students and would thus transcend to the economically disadvantaged. Motivation has already infiltrated the middle-class school culture. These more affluent schools have appeared ripe to the advocates of economic integration.

**Economically Integrated Schools**

Many researchers disagreed with the notion of trying to focus income achievement gap reform by relocating teachers and administrators but suggested breaking up pockets of high poverty in terms of school enrollment (Embry, 2011; Hardy, 2006; Kahlenberg, 2006; Kahlenberg, 2012; Potter, 2013). Schwartz (2011) agreed and added

> Although most education research attempts to quantify the effects of various promising school-based reforms for low-income children (e.g., full-day kindergarten, smaller class sizes in early grades, a balanced literacy curriculum, and increased professional development) the results from this study suggest that efforts to enroll low-income children in low-poverty schools are even more powerful. (p. 25)
Furthermore, summer school, which is the most popular form of reading intervention, has been largely found as ineffective (Schacter, 2005). Even though Weissbourd and Dodge (2012) alluded to parents pouring money into the school as a reason for low poverty schools’ success. Embry (2011) suggested that economic integration impacted educational performance more than reform or additional funding. While the argument is left unsettled, the research into what has worked is far from a template of success that any school with high poverty could imitate. For instance, Hardy (2006) has called traditional methods of closing the achievement gap by higher expectations and reduced class size disappointing. Others have pointed out that the dropout rate remained the same for more than twenty years (Orthner, 2010) and built a body of evidence to support the outcome that school-based reforms do not work. One source pointed out that the academic achievement gap for low socioeconomic students is not caused by school and, therefore, could not be fixed by school alone (Hanover Research, 2014). The same research also suggested that schools should combine higher academic standards and socio-emotional needs to have a higher likelihood of closing gaps. While the researchers stated that schools cannot be solely responsible for closing gaps, they also admitted that low-income students are more dependent on schools than their more affluent counter-parts (Hanover Research, 2014).

Furthermore, Kahlenberg (2012) concluded, “The only educational intervention known to have a greater return on investment than socioeconomic integration is very high-quality early childhood education” (p. 7). Potter (2013) also stated, “The strongest school-related predictor of student achievement was the socioeconomic composition of the student body” (p. 39). Therefore, theorists have stated that economic integration would increase economically disadvantaged student achievement. Research concluded that as the percentage of economically disadvantaged students increased, school wide achievement decreases (Hopkins, 2005). Therefore, the
elimination of the pockets of highly concentrated poverty was called the “single most important step that can be taken for improving education in the United States” (Hardy, 2006, p. 14).

A review of the research suggested that the problem with low-income, low-performing schools was not teachers but economic segregation (Kahlenberg, 2012). Research consistently found that poor students did better when surrounded by middle-class students (Coleman, 1966; Potter, 2013; Rusk, 2011). Researchers found that the socioeconomic status of the school had a greater impact on achievement than the students’ own socioeconomic status (Kahlenberg, 2006; Scherer, 2013).

Moreover, the greater number of high-income adults in the neighborhood of the school correlated to higher achievement in both reading and mathematics (Woolley, 2008). This was explained by Usinger’s (2005) work when he found that nondirective environments had a substantial effect on student aspiration. Woolley (2008) also found that the social capital of more affluent neighborhoods has a “protective factor promoting positive outcomes” (p. 134). Consequently, “Socioeconomic integration is an effective way to tap into the academic benefits of having high-achieving peers, an engaged community of parents, and high-quality teachers” (Potter, 2013, p. 39). Kahlenberg (2006) concurred and added that the make-up of a school determines the recruitment of teachers. In response to the benefits of high-achieving peers, both experimental research and ethnographic studies have shown that economically disadvantaged students from a socioeconomically diverse student body performed better than economically disadvantaged students in low-income majority schools (Potter, 2013; Rothstein, 2013). Traditionally, researchers held that the racial make-up of the school was the driving force behind achievement, but recent research has illuminated the socioeconomic composition of a school as having the most impact (Goza & Ryabov, 2009; Kahlenberg, 2006).
Furthermore, Goza (2009) propagated socioeconomic desegregation as a catalyst for positive achievement gains for all ethnic groups. “Today, white students are the most segregated of all groups, which places them at a disadvantage in a country in which whites will soon no longer be the racial majority and in which it will be imperative to know how to work and live among diverse groups” (Gandara, 2010, p. 60). In agreement, Goza and Ryabov also stated that whites would benefit the most from socioeconomic integration (2009). Findings from recent studies suggested a strong correlation between socioeconomic status and achievement for all groups, but less so for African Americans (Goza & Ryabov, 2009). The rise of minorities in the United States and the evidence of economic segregation as a negative effect on achievement have alarmed many in the educational world. Especially since seventy-eight percent of our largest ethnic group, Hispanics, attend mostly minority schools (Gandara, 2010). Despite the popular inhibition of the negative effects that the lower socioeconomic students might have on the more advantaged students, Potter (2013) suggested that “the achievement of more advantaged students was not harmed by desegregation policies” (p. 40).

In Rothstein’s (2013) research, he found that integration can have a profound impact on gap closure. Schwartz (2011) agreed and wrote, “Since education is an investment with both individual and societal benefits, improving low-income students’ school achievement using integrative housing can not only reduce the income achievement gap but also help stem future poverty” (p. 19). Researchers also found a strong correlation between socioeconomic school composition and the income achievement gap (Coleman, 1966; Kahlenberg, 2012). Rothstein (2013) concluded that children of the same socioeconomic background in the same geographic area performed better by moving to the suburbs and worse by staying in the city in Chicago. Research supported that low income students performed better in more affluent schools than low
income students who attended schools that reported a higher percentage of economically
disadvantaged students (Brighouse, 2007; Embry, 2011; Rothstein, 2013). Generally, as the
poverty level increases, the achievement level decreases (Coleman, 1966; Kahlenberg, 2012).
Thus, economic integration met many goals for increasing school performance (Mickelson,
2011).

Potter (2013) also emphasized that the “biggest advantage of socioeconomic integration
may be direct peer effects” (p. 40). Other researchers agreed and found a relationship between
academic achievement and peer group interactions (Coleman, 1966; Goza & Ryabov, 2009).
Furthermore, Brighouse (2007) supported this claim and said that “children are resources for
each other” (p. 581). The continental divide, in regards to the percentage of economically
disadvantaged students enrolled in a school, before reaching a tipping point of having a negative
reaction to the non-economically disadvantaged population, was around 50% (Kahlenberg, 2012;
Potter, 2013). One study on economic integration revealed that “Poor children in the low-poverty
schools were able to close the achievement gap with their wealthier suburban peers by 50% in
math and one-third in reading” (Embry, 2011, p. 31).

Rothstein (2013) added, “Perhaps even more important than narrowing the test score gap
are the positive behavioral outcomes from school racial integration; improved graduation rates,
higher rates of employment, and higher earnings in adulthood, as well as avoidance of teen
childbearing, delinquency, homicide, and incarceration” (p. 52). This research suggested that
economic integration could help a disadvantaged population without harming the advantaged
population.

Despite the vast amount of research, the problem still remains. “Disparities between the
most affluent schools and schools in poor communities have grown nonsensically extreme”
The absence of access to grade level books has resulted in a disparity of voluntary reading and a summer reading setback. Allington et al. (2010) stated, “Family socioeconomic status has been linked to the access children have to books in their homes and neighborhoods” (p. 411). Due to the economy, many schools have closed arts programs, reduced sports programs, and released teachers (Weissbourd & Dodge, 2012).

Research points to the arts as having a positive correlation to closing the income achievement gap (Hanover Research, 2014). Yet, researchers have theorized that if one took a high-achieving student with a supportive family and planted him in a low achieving school there would be little affect. Inversely, if one took a low achieving student without the support system and put him in a high achieving school, his scores were likely to improve (Coleman, 1966).

**Rural Poverty**

“Given the connection between socioeconomic status and achievement, care must be taken when studying achievement in rural areas in that differences in achievement might be attributable to socioeconomic status rather than locale” (Hopkins, 2005, p. 22). Concentrations of poverty were more likely in central urban and rural areas (Garrett, Ng'andu, & Ferron, 1994). Lichter (2007) wrote, “Concentrated and persistent poverty has historically been highest in America’s most remote rural areas” (p. 333). Furthermore, relatively little research has been conducted on rural poverty (Garrett, Ng'andu, & Ferron, 1994; Sherman, 2006). However, the research has shown that poverty rates are greater in rural areas than in metro areas and the counties that are perennially poor are overwhelmingly rural (Garrett, Ng'andu, & Ferron, 1994; Hopkins, 2005; Sherman, 2006). “Rural poor children may be more disadvantaged than ever, especially if measured by their lack of access to opportunities and divergence with children living elsewhere” (Lichter & Johnson, 2007, p. 331).
Rural poverty seemed more devastating than urban poverty because it lasted for generations. “The odds of being born into poverty for children born in a rural area are estimated to be 1.12 times higher than those for children born in urban areas” (Garrett, Ng’andu, & Ferron, 1994, pp. 75). “The rural poor suffer from low income, but also often endure physical isolation and poor public transportation, inadequate schools, and limited access to medical care and other basic public service” (Lichter & Johnson, 2007, p. 333). The rural poor appeared to live in a perpetual cycle of poverty that was an arduous, if not impossible, task to break. Irving (2008) observed poor counties in the South as having class structured that exacerbated the cycle of poverty.

“In the state of Tennessee, over two million people live in rural areas with 14.7 % of children in these areas living in poverty” (Hopkins, 2005, p. 22). Welfare recipients in the south were also less likely to exit the welfare program than those in the North (Irving, 2008). Despite the large populations of rural poor in Tennessee, Hopkins found that the rural poor outscored the urban poor in mathematics on the state standardized test. The academic superiority of the rural poor over the urban poor grew to all content areas as the population narrowed to only schools with very high percentages of economically disadvantaged students. “One possible reason rural schools outscore large central city and other non-rural school with the highest percent of disadvantaged students is the social capital of smaller communities” (Hopkins, 2005, p. 26). Therefore, Hopkins proposed that if a student was poor, it was better to be rural poor than urban poor.

Hopkins (2005) theorized that social and cultural capital contributed to the success of a rural school. This included the social capital of volunteers, tutors, and parents willing to be involved in the educational system as well as cultural capital of a community with high academic.
aspirations and a commitment to education. Another example of cultural capital was the value placed on community. In a study performed to measure the attitudes of school leaders towards the rural poor, many “leaders mentioned family circumstances far more often than factors related to schooling as the cause of underachievement” (Budge, 2010, p. 9). The idea that community and family played a huge role in the academic achievement of a child has been taken for granted as common sense by most educators in the field.

However, the sheer lack of opportunity in rural poor areas has resulted in a brain drain of which the young, highly skilled workers leave for urban or suburban areas leaving the small rural area even more impoverished (Foulkes & Schafft, 1995, 2010). Consequently, this out-migration resulted in poor quality schools and healthcare which has resulted in the unlikelihood of the creation of middle class jobs.

Geography

Kahlenberg (2012) attributed the success of countries such as Finland to socioeconomic integration. However, socioeconomic integration was not possible for the vast majority of high poverty schools. Kahlenberg noted that “most economic segregation occurs between districts rather than within them” (p. 6). Brighouse (2007) also found that districts who had high percentages of poverty had little funding and that districts with low percentages of poverty had higher funding. Therefore, geography alone had a major impact on the achievement levels of economically disadvantaged students. “One reason why individuals are differentially successful is because they live in places with different opportunity structures” (Semyonov, 1988, p. 256).

For example, schools that were labeled middle-class schools were found to have students who were less likely to act out, parents who were more involved, and stronger teachers and higher expectations (Kahlenberg, 2012). Research found that higher concentrations of poverty
repelled the most talented teachers and lower concentrations of poverty attracted the most talented teachers (Brighouse, 2007). Middle-class schools had more resources because of fundraising, donations, and parental involvement (Brighouse, 2007). Researchers theorized that low socioeconomic students would benefit from being enrolled in these schools with more resources. Adversely, higher poverty schools reported more students’ misbehavior, absenteeism, and parents who were not involved (Gandara, 2010).

Dissent

Although economic integration seemed like a popular idea among some reformers, the geography and logistics of such integration would prove problematic (Hardy, 2006). Therefore, many researchers tended to focus again on school reform. Brighouse (2007) concluded that “educational injustice” could be changed “without structural change that includes efforts to integrate schools” (p. 576). Also, research supported that racial integration could be fully implemented and yet a high percentage of low-income students persistently struggle (Kahlenberg, 2012). Rusk (2012) added, “In high-poverty schools, most children will fail no matter how many extra resources are poured into their schools or how much ‘accountability’ is required of their teachers” (p. 21). Furthermore, “more money does not necessarily translate to greater learning” (Weissbourd & Dodge, 2012, p. 75).

Petrilli (2013) introduced the dilemmas that a socioeconomically diverse school faces such as the question of how to group classes. He proposed grouping them by academic ability would end up in racial and socioeconomic segregated classes. Petrilli then asked, “Who wants an integrated school with segregated classrooms” (p. 44)? He also brought up the problem with differentiated instruction in heterogeneously grouped classrooms and the reality that real differentiated instruction almost never happens. Other theories suggested that the larger the
subgroup became, the more likely the group was to remain in homogenous social groups and segregate themselves by preferred interactions (Goza & Ryabov, 2009).

Petrilli (2013) found that parents and students from different socioeconomic backgrounds preferred different kinds of schools. The lower socioeconomic parents preferred a traditional, highly structured, paternalistic school whereas the higher income parents preferred “progressive”, “loosey-goosey”, open-ended schools (p. 47). The sheer reality of school climate appeared that a school could not possibly be both.

The greatest argument against socioeconomic integration was the issue of freedom. Hardy (2006) asked, “Is it right to assign middle-class children to schools across town when there are perfectly good schools in their own neighborhoods” (p. 20)? Brighouse (2007) also condemned the usual measures used to enforce economic integration; bussing, prohibition of private schools, and neighborhood housing diversity, as infractions on parental freedoms provided by democratic countries.

**Title I**

“Since the Great Society era of the 1960s, the federal grants-in-aid system has been used as the primary tool to address equity issues in elementary and secondary education at the national level” (Wong & Meyer, 1998, p. 115). It is estimated that the federal government spent over three trillion dollars on school reform since the 1950s (Renzulli, 2008), with a lot of this funding coming directly from Title I (Davis, 1966; Gordon, 2004). Title I is the largest K-12 program of the federal government (Camera & Cook, 2016). “For fiscal year 1998, the Clinton administration allocated $7 billion in Title I funds to serve over six million students” (Wong & Meyer, 1998, p. 115). In 2002, Bush increased Title I funding to ten billion (Borman, 2002). In
2007 and beyond, the funding for Title I reached and continues to exceed 25 billion dollars per year (U. S. Department of Education, 2016).

Title I is part of the Elementary and Secondary Education Act (ESEA) of 1965. Schools and districts have received funding from Title I since 1965. States receive grants from the ESEA and distribute those funds to school districts based on the number of economically disadvantaged students in their schools (The Rural School and Community Trust, 2016). In 1965, President Johnson signed the ESEA granting Title I funding that would service 5 million students (Camera & Cook, 2016). In 2009-2010, the federal government served over 21 million students and 56,000 schools with Title I funds (Malberg, 2015; U. S. Department of Education, 2015).

The basis for federal funds to be used to supplement local education agencies for remediating low-income children began with a large study in the 1950s by Patricia Sexton (as cited in Stickney & Plunkett, 1982). She researched over 285,000 students, 10,000 teachers, and 300 schools. Sexton grouped the schools into four categories based on family income. Sexton found that the top two groups were all performing above grade level on standardized tests while the lower two groups were all performing below grade level. She also found that the top two groups provided the most intervention, the lower two groups retained 11% of students compared to the 1% in the top two groups, and other factors related to giftedness, dropout rates, and health issues. These findings revealed that the top two income bracket schools were more favored than the lower two income bracket level schools. This study revealed the disparity and inequity of educational opportunities for students with economically disadvantaged backgrounds which led to the formation of Title I under the ESEA.

“Title I of the Elementary and Secondary Education Act (ESEA) was implemented in 1965 to provide financial assistance to local educational agencies serving areas with
concentrations of children from low-income families to expand and improve their educational programs by various means, which contribute particularly to meeting the special educational needs of educationally deprived children” (Borman & D'Agostino, 1996, p. 309). Title I is designed to increase student achievement in schools with high concentrations of economically disadvantaged students. After *A Nation at Risk* (1983) was published, policy analysts diverted their focus from funding students who qualified for Title I services to funding entire schools who qualified for Title I services in order to have a greater and more comprehensive impact on disadvantaged communities (Wong & Meyer, 1998). In 1988, Congress allowed schools to implement this new strategy via school wide programs if the school was 75% or higher economically disadvantaged. In 1996, Congress lowered the threshold to 50%, which allowed almost all Title I schools to implement a school-wide comprehensive approach to reform in place of the single student approach. Under No Child Left Behind and currently, schools that have 40% of economically disadvantaged students in their school population can participate in a school-wide program (U. S. Department of Education, 2015).

Title I has become a large program that affects almost every school district in the United States. Even non-traditional institutions have benefited from the federal program. Juvenile correctional and delinquency facilities received Title I funding in the late 1970s (Bartell & Mantius, 1976).

One of the major components of Title I is its self-evaluation for efficacy. “Title I was the first federal educational law to mandate annual effectiveness evaluations” (Borman & D'Agostino, 1996). In 1974, the evaluation methods were refined and Title I gained greater credibility and accountability.
Effectiveness of Title I

After the first year of the implementation of Title I, one author boasted that American children are winning from the new initiative (Davis, 1966). Later, when Title I was fully implemented, efficacy studies using the National Assessment Educational Progress showed that “These significant changes and the overall pattern of a narrowing gap for most population groups at all ages strongly suggest that students in Title I schools are improving at a faster rate than schools in non-Title I schools” (Stickney & Plunkett, 1982, p. 380). While Stickney and Plunkett (1982) admit that Title I may have fallen short of the original goals, it remains a successful program that is “one of our most important equalitarian strategies” (p. 383). “The results do suggest, however, that without the program, children served over the last 30 years would have fallen farther behind academically” (Borman & D'Agostino, 1996, p. 324). One only has to walk into a Title I school and observe the extra resources, personnel, and programs that it provides to grasp the gravity of the program (Borman, 2002).

The evaluation of programs that receive substantial amounts of money is controversial. Even at the beginning, the evaluation of Title I funding was met with reluctance and even hostility (Davis, 1966). The logic behind the fear is that the United States may be spending a lot of money for minimal or nonexistent returns. Research found that the impact of Title I has been modest (Borman & D'Agostino, 1996). However, there are still trends in the data such as the gains were larger in elementary schools than secondary schools and were larger in mathematics than reading that researchers can glean useful information from. Title I also saw some success in the 1980s on the NAEP test for closing the income achievement gap and for economically disadvantaged participants in the Title I program outperforming economically disadvantaged students that did not participate in the Title I program (Borman & D'Agostino, 1996). However,
a meta-analysis of the effectiveness of Title I programs questioned the sustainability of the gains over the summer (Borman & D'Agostino, 1996). “Whenever an inner-city or poor rural school produces an exemplary program that helps its students achieve notable results, Title I funding almost invariably made it possible” (Borman, 2002, p. 49).

**Components of Successful Title I Programs**

Besides an increase in funding, what else makes the Title I program successful? Research has shown various components of successful Title I programs. The first is to supplement, not supplant (Stickney & Plunkett, 1982). This applies not only to the expenditures that Title I is funding but also to reading and math instruction. For an instance, Title I reading programs should be in addition to regular reading programs, not instead of regular reading programs.

The second component is evaluation. The accountability factor is said to have an effect on student achievement through means of time on task, stating objectives, and lesson planning (Stickney & Plunkett, 1982). The third component is coordinated effort. “Empirical support for the significance of program coordination comes mainly from studies of what constitutes an effective school” (p. 381). The fourth component of a successful Title I program is parent involvement. This is the most important requirement of the Title I program. A successful parental involvement component encourages participation from all parents, not just the elite or affluent. It is democratic by nature and is not political or reserved for the influential. However, studies have shown that although Title I schools offer parental involvement programs, only 5-10% of parent are present for such programs (Wong & Meyer, 1998). The last component is dissemination of information. This allows the community to be involved in the schools and break
down the walls of the school. Other research has found a shared decision making model as a component of successful Title I school wide programs.

Even with the best components and superior planning, there are other factors that can be a detriment to schools when trying to increase the achievement of those students identified for Title I funding. Research showed statistically significant relationships between Title I program attendance and student achievement (Ziomek & Schoenenberger, 1983). Principals could have the best Title I program in the nation, but if the student is not there, they will not benefit from it.

While these components of supplement not supplant, evaluation, coordinated effort, and parent involvement provide pillars of what a Title I program should be, the question still lingers: What do the schools do with the money? A synthesis of Title I research concluded with several tangibles that are typically used for expenditure of Title I money. One of the most common were reduced class sizes (Borman, 2002; Wong & Meyer, 1998). The research found that the average class size reduction went from 27 to 19. The reduction of class size coincides with the hiring of additional personnel. Title I has created many jobs including teachers, secretaries, drivers, supervisors, and evaluators (Davis, 1966).

Another tangible expenditure of Title I funding is staff development. Specifically, training in reading and literacy instruction, instruction for low-achieving students, and mathematics instruction (Wong & Meyer, 1998). The researchers found an average of 29 hours of training for teachers for Title I schoolwide programs (Wong & Meyer, 1998). Other strategies employed by principals of schoolwide Title I programs were increased technology and an extended school day.

Researchers theorize that to continue the gains made by Title I schools should focus on key elements. One element would be early intervention (Borman, 2002). This usually comes in
the form of preschool. If the achievement gap is prevalent during kindergarten, the logical remedy would be to start closing the gap before kindergarten. Another would be to provide summer learning experiences (Borman, 2002). This could be through an extended school year, summer school, or a modified calendar.

Summary

This literature review covered varying theories on closing the income achievement gap. The researcher reviewed the problem of the income achievement gap, introduced best practices of rare schools that proved successful with gap closure, examined the argument for economic integration, gave the background for Title I funding, and pointed to present and missing research about the rural income achievement gap. Although researchers differed on whether reform should focus on making successful schools or a social upheaval with economic integration, none advised to ignore the problem. All acknowledged that the income achievement gap is a serious problem and must be handled with care. Coleman (1966) suggested there is more to school integration than just sticking opposite groups in the same building. Beloin and Peterson (2000) built on that foundation, “You cannot just do inclusion. You have to be a good school first” (p. 19).

The previous quote perfectly combined both sides of the argument of school integration as being both a community and a school dilemma. It has taken both a community and a school effort to turnaround failing impoverished schools in the past and this partnership has set the mold for school reform in the future. However, research has emphasized the importance of community support, even if alienated from economic integration. In the words of Edelman and Jones (2004) If there is money to wage war in and then rebuild Afghanistan and Iraq, if there is the money to send spaceships to explore Mars and colonize the moon, if there is enough
money for tax breaks that disproportionately favor the wealthy, then there is more than enough money to reduce poverty through such programs as the Earned Income Tax Credit (EITC), Head Start, and Medicaid- programs that provide crucial services to help the poorest children (p. 135).

Edelman has theorized such programs have equipped the most impoverished areas in America with the best opportunity to close the achievement gap.
Chapter III: Methodology

Introduction

This is a mixed methods study that employs quantitative research to investigate the efficacy of Title I funding in the chosen school district and qualitative research to investigate the best practices of closing the achievement gap in Title I schools. The researcher conducted an ex post facto study. “Ex post facto (Latin for “after the fact”) research is conducted after variation in the variable of interest has already been determined in the natural course of events” (Ary, Jacobs, Sorenson, & Walker, 2014, p. 357). This research design is appropriate because the student achievement was measured in 2015 and the Title I funding was granted in 2014. The researcher used data from 2015 because the Tennessee Department of Education did not conduct standardized testing in grades 3-8 for the 2016 year. Additionally, the researcher could not manipulate the variable of Title I funding for the study.

The researcher used a two sample one-tailed t-test to determine if Title I schools in the chosen district are more effective at closing the income achievement gap in reading and math than non-Title I schools in the same district. The researcher conducted a basic interpretive study through interviews with principals and compare answers from Title I schools with non-Title I schools and a content analysis of Title I funding budgets. The disparities should result in a best practices of closing the income achievement gap through Title I funding.

The purpose of the ex post facto study using the t-test is to determine if the Title I group of schools was more effective at closing the income achievement gap. Tanner (2012) stated that an independent t-test produces “a difference score to a measure of the variability in two samples” (p. 154). The two samples were a group of Title I schools (Group A) that were compared with a group of non-Title I schools (Group B) within the chosen school district. The Group A Title I
schools consisted of 11 schools and Group B, the non-Title I schools, had 5 schools. The independent variable was Title I status and the dependent variable was the income achievement gap in reading and mathematics. Tanner states, “If there are reasons to predict which group will have higher scores, sometimes researchers use a one-tailed t-test” (p. 161). The researcher used a one-tailed t-test because it was assumed that Title I schools were more effective at closing the income achievement gap. The hypothesis was that: Title I schools had a smaller collective income achievement gap than non-Title I schools. The income achievement gap was calculated using the TCAP achievement data from the last year of testing in Tennessee: 2015, using an ex post facto research design.

The purpose of using a basic interpretive study is to “describe and possibly interpret experiences” or processes (Ary, Jacobs, Sorenson, & Walker, 2014, p. 484). The researcher sought to ascertain recurrent patterns or themes from the interviews with principals. The interviews allowed the researcher to provide a thick, rich description of what Title I schools were doing to close the income achievement gap in the chosen school district. The researcher used the interviews to look at staffing variance and how that was leveraged to close the income achievement gap. The researcher used the interviews to identify programs employed by the schools that help close the income achievement gap. The researcher used the interviews to extrapolate logistical and infrastructure distinctions that may help close the income achievement gap. The interviews allowed the researcher to add meaning to the t-test data and attempted to find relationships within the two sets of data. The content analysis of Title I budgets allowed the researcher to see what staff, resources, and programs the Title I schools were able to employ that the non-Title I schools did not have. The budgets were provided by the Title I coordinator of the chosen school district.
Population and Sample

The accessible population for this study was all schools in the chosen school district. The sampling technique employed by the researcher was nonprobability sampling. The sample was all schools in the chosen school district that serve grades 3 through 8. There were 16 schools in the chosen district that had a population in grades 3-8. Eight schools served kindergarten through 8th grade. One school was considered a primary school which served kindergarten through 4th grade. Three schools were considered intermediate as they served 3rd through 5th grades. Four schools were categorized as middle schools and served either 7th and 8th grade or 6th through 8th grade. Of the 16 schools in the population, 11 schools were Title I and five schools were not. The sampling procedure was convenience sampling because it “involves using available cases for a study” (Ary et al., 2014, p. 169). Convenience sampling was used because the researcher wanted to use all available schools that met the criteria of the study.

This research focused on the Tennessee Comprehensive Assessment Program (TCAP) scores for 3rd through 8th grade students for the testing year of 2015. The data collected described the sample of students serviced in third through eighth grade as opposed to one specific grade level as the effect of Title I funding and grants could affect an entire school and not a single grade or subject. Each principal of the 16 schools was interviewed as part of the basic interpretive study.

The total number of students that attended the schools in the study totaled 8,718 in 2015. While not all were involved in the study because some of the schools serve non-tested grades, most of the 8,000 students had scores that were used to calculate the income achievement gap. Of the 8,718 students, 7,526 were white and accounted for 86% of the population. Of the same population, there were 173 African American students that accounted for 2% of the population.
There were 852 Hispanic students which totaled 10% of the population. There were 125 Asian students, or 1% of the population. There were 32 Native American and 10 Hawaiian or Pacific Islander, neither of which totaled to be one percent of the population. The male students accounted for 4,558, or 52%, of the population while the female students accounted for 4,160 or 48% of the population. The students who were economically disadvantaged in the population of 8,718 totaled 5,773, or 66% of the population. This statistic alone bears the significance of the study.

**Description of Instruments**

The instrument used for the quantitative part of this mixed study was the Tennessee Comprehensive Assessment Program (TCAP). It was a standardized test that measured achievement in reading language arts, mathematics, science, and social studies. It was both a norm-referenced and criterion-referenced test (Consortium for Policy Research in Education, 2000). All question types given were multiple choice and time allotted for the test varied with subject and grade level. The test scores were disaggregated by the Tennessee Department of Education (TDOE) by demographics and subgroups. The Tennessee Department of Education tested the TCAP test for validity and reliability.

The instrument used for the qualitative portion of this study were interviews with open-ended questions. The researcher chose to use open-ended questions as opposed to closed questions to maximize the information attained and richly describe the unique aspects of Title I schools. A digital version of interviews was utilized because it was more beneficial and encouraged more participation due to administrator time constraints. The interviewer created a set of interview questions that was sent digitally and answered in an open-ended format. This maximized efficiency, encouraged participation, and secured the data electronically. The
interviewer sent follow-up questions in a second round of the interview to clarify or delve deeper into any of the questions asked in the original interview. The researcher used Title I budgets as an instrument to collect data and describe the Title I programs. The Title I coordinator for the chosen school district provided the budgets for the study.

**Research Procedures and Time Period of the Study**

The variables of the study were Title I funding and the income achievement gap. Title I funding was the independent variable. The income achievement gap was the dependent variable. This mixed method study was categorized into two parts. The first part in this study was to perform a two sample one-tailed t-test to determine the efficacy of Title I schools in the chosen county at closing the income achievement gap. The first step was to identify which schools served the target 3rd through 8th grade student sample. The second step was to categorize the schools into Title I and non-Title I. The third step was to collect the income achievement gap for the 3rd through 8th grades aggregate for the subject areas of reading and mathematics. The fourth step was to run the t-test statistical procedure and determine if the Title I schools were more successful at closing the income achievement gap than non-Title I schools in the chosen school district. The data collected for this study was the 2014-2015 school year.

The second part in this study was to interview the principals of each school and examine Title I budgets. The first step of this procedure was to obtain Title I budgets from the Title I coordinator of the chosen school district. The second step was to send out the interview electronically. The third step was to become familiar with the results (Ary, Jacobs, Sorenson, & Walker, 2014) and send follow-up questions for clarity or more information. The fourth step was to analyze, code, and categorize the interviews. The fifth step was to perform content analysis on the Title I budgets. The content analysis employed an emergent design framework because it is
performed in a non-linear fashion and may evolve depending on what is learned (Ary et al., 2014). However, the researcher set up four categories as a preliminary framework for coding the content analysis. The four categories were: (a) infrastructure, (b) personnel, (c) resources, and (d) programs. The sixth step was to compare interviews to Title I budgets to enrich the answers of the interviews. The seventh step was to interpret the data, combine interpretations with results for the t-test, and provide a meaningful description of best practices of Title I schools in chosen school district.

**Procedures for Data Analysis**

The researcher calculated the mean achievement gap for both sets of schools and ran a one-tailed independent sample t-test. This test determined if there was a significant difference between Title I schools and non-Title I schools in regard to achievement. The researcher ran a one-tailed t-test because it was assumed that Title I schools would do better at closing the income achievement gap because they receive funds and resources to do so. The researcher performed the t-test with the p-value of .05 on the positive end.

Secondly, the researcher employed a constant comparative method of analysis and looked for trends in the interview data by coding responses and compiling a list of best practices for closing the income achievement gap. The interview was coded into four main categories, although some sub-categories surfaced through the data analysis. The four main categories were: infrastructure, personnel, resources, and programs. The interviews presented how non-Title I schools acquire materials in these four categories and the interviews combined with the Title I budgets presented how Title I schools acquire materials in these four categories. The categories were then compared Title I schools versus non-Title I schools to gain meaning in to best practices for closing the income achievement gap.
Chapter IV: Findings

Introduction

The purpose of this study was to determine the efficacy of Title I funding in regard to closing the economic achievement gap in a medium-sized school district in East Tennessee. Academic achievement gap data were gathered for both Title I schools and non-Title I schools in the subjects of reading and mathematics. Principals were interviewed of both Title I and non-Title I schools to gain an understanding of the efficacy of Title I funding. A t-test was employed to determine if there was a statistically significant relationship between Title I funding and the reading and language arts income achievement gap and the mathematics income achievement gap. A content analysis was performed on the interviews after all information had been collected.

The data collected for the t-test were collected from the Tennessee Department of Education state website that is available to the public in compliance with No Child Left Behind (NCLB). In order for schools to achieve adequate yearly progress (AYP), they must meet goals determined by the Tennessee Department of Education that outline accountability measures for predetermined subgroups, such as economically disadvantaged students. The instrument used by the state of Tennessee is the Tennessee Comprehensive Assessment Program (TCAP). The participants of the t-test included all schools that served 3rd through 8th grades in the medium-sized school district in East Tennessee used in this study. The schools were divided into two categories: Title I and non-Title I. The income achievement gap was recorded in both English language arts and mathematics for each school. This data were used to perform the t-test.

The interview data were collected using a survey created in Google Forms that was sent to each principal. A form developed for Title I schools asked the principals how they spent their Title I funds. Another form was developed for non-Title I schools that asked the principals how
they would spend the additional funds if they received Title I monies. The responses to the interview were coded and compared to find trends and stark contrasts.

The hypothesis tested was that Title I schools were more effective at closing the income achievement gaps than their non-Title I counterparts because of the additional funding. The established purpose for Title I funding was to close the gaps of certain subgroups akin to the economically disadvantaged subgroup (Davis, Jr., 1966). This statistical analysis answered the question of efficacy for reading and language arts as well as mathematics in a medium sized school district in East Tennessee. The interviews provided a thick, rich description of how the funds were used to close the income achievement gap in hopes of creating best practices to close the income achievement gap.

The aforementioned research procedures were used to answer the research questions that guided the study:

1. In the school district chosen for the study, what comparisons may be made regarding achievement gaps between Title I schools and Non-Title I schools?
2. What are the best practices of Title I schools at closing the income achievement gap?

Tanner stated that “If there are reasons to predict which group will have higher scores, sometimes researchers use a one-tailed t-test” (p. 161). Thus the researcher used a one-tailed t-test because it was assumed that Title I schools were more effective at closing the income achievement gap because of the additional funding. The hypothesis was that: Title I schools had a smaller collective income achievement gap than non-Title I schools.

The findings of the study are presented in this chapter. The results of the t-test are discussed and comparisons of achievement gaps between Title I and Non-Title I schools are made first. Then the findings from the Title I school principals are discussed and best practices for closing
the income achievement gap in the medium sized school district are compiled. Then the results of the school principal interviews from Non-Title I schools are discussed. Finally, the results are summarized to close the chapter.

**Results of the T-Test**

A t-test was performed to statistically compare the achievement gaps of Title I and Non-Title I schools. The data collected from the Tennessee Department of Education was grouped by Title I schools and non-Title I schools. An F-test was performed to determine if the t-test needed to be run for equal variances or unequal variances. The reading and language arts data resulted in needing a t-test performed for equal variances as shown in Table 1.1. The mathematics data resulted in needing a t-test ran for unequal variances as shown in Table 1.2. Chart 1.1 is a scatter plot showing the reading and language arts income achievement gaps for Title I schools in the district. Chart 1.2 is a scatter plot showing the income achievement gap for Mathematics for Title I schools in the district. Chart 1.3 is a scatter plot showing the Reading and Language Arts income achievement gaps for non-Title I schools. Chart 1.4 is a scatter plot showing the mathematics income achievement gaps for non-Title I schools.

<table>
<thead>
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<th>Table 1.1</th>
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<td><strong>F-Test Two Sample for Variances for Reading and Language Arts</strong></td>
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<th>Reading Gap</th>
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<tr>
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<td>3</td>
</tr>
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<td>F</td>
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</tr>
<tr>
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<tr>
<td>F Critical one-tail</td>
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Table 1.2

*F-Test Two Sample for Variances for Mathematics*

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<th>Title I Math Gap</th>
<th>Non-Title I Math Gap</th>
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<td>0.769166667</td>
</tr>
<tr>
<td>Observations</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>df</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>F</td>
<td>83.52634689</td>
<td></td>
</tr>
<tr>
<td>P(F&lt;=f) one-tail</td>
<td>0.001904391</td>
<td></td>
</tr>
<tr>
<td>F Critical one-tail</td>
<td>8.76333283</td>
<td></td>
</tr>
</tbody>
</table>

Chart 1.1

*Scatter Plot: Title I Reading and Language Arts*
Chart 1.2

Scatter Plot: Title I Reading and Language Arts

Chart 1.3

Scatter Plot: Non-Title I Reading and Language Arts
The p-value for the t-test for reading and language arts was 0.0888 as shown in Table 2.1. This p-value was greater than the 0.05 level of significance. Therefore, the hypothesis that Title I schools are more efficient at closing the income achievement gap in reading and language arts must be rejected. The p-value for the t-test for mathematics was 0.03725 as shown in Table 2.2. This p-value is less than the 0.05 level of significance. Therefore, the hypothesis that Title I schools are more efficient at closing the income achievement gap in mathematics must be accepted.

Table 2.1

<table>
<thead>
<tr>
<th>Title I school and non-Title I school comparison- RLA</th>
<th>Title I Mean</th>
<th>Non-Title I Mean</th>
<th>T-Stat</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014- 2015 School Year</td>
<td>18.225</td>
<td>24.05</td>
<td>1.419332705</td>
<td>0.088841429</td>
</tr>
</tbody>
</table>
Table 2.2

Mathematics T-Test Results

<table>
<thead>
<tr>
<th>Title I school and non-Title I school comparison- Math</th>
<th>Title I Mean</th>
<th>Non-Title I Mean</th>
<th>T-Stat</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014- 2015 School Year</td>
<td>17.525</td>
<td>22.125</td>
<td>-1.95328</td>
<td>0.03725</td>
</tr>
</tbody>
</table>

Analysis of Title I School Interviews

The following sets of interviews helped to answer the research question that investigated best practices of closing the income achievement gap. An interview was conducted with Title I school principals to understand how they spent their Title I funds, how they leveraged these expenditures to close the income achievement gap, and how to find best practices through the collective responses. The questions were developed to help with coding of responses. The four major categories for coding were personnel, programs, infrastructure, and resources. The questions related to these four elements and helped with coding. The analysis clarified subcategory information within the larger categories. The sub-categories appear within the discussion of answers to interview questions. Eleven of the twelve Title I school principals responded to the interview for a 91.67% usable return rate.

The interview questions were broken down and then correlated with the school’s income achievement gap in mathematics and reading and language arts. Therefore, next to each response for an individual question, one can see the gap size next to the response. This allows for one to qualify responses based on efficacy. As a result, one could see what practices were more effective by examining the different responses in the light of income achievement gaps.

**Interview Question 1.** How many staff members do you fully fund with Title 1 funds?

The Title I school principals interviewed answered in a range from 1 to 6 full time staff.
members. The average number of staff members fully funded with Title I funds was 3.55. The tasking of this personnel was included in a later question. The answers to this question, as shown in table 3.1, were correlated to the same school’s income achievement gap in reading and mathematics. Inferences drawn from this data will be discussed in chapter 5.

Table 3.1

*Full Time Staff Member Correlation to Reading and Math Gaps*

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Full Time Staff Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>1</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>3</td>
</tr>
<tr>
<td>12.8</td>
<td>23.4</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>2</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>3</td>
</tr>
<tr>
<td>19.4</td>
<td>17.7</td>
<td>3</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>3</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>5</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>5</td>
</tr>
</tbody>
</table>

*Interview Question 2.* How many staff members do you partially fund with Title 1 funds? Title I school principals answered this question that they use between 0 to 5 partially funded staff members. The average of the collective answers was 1.55. The explanation of how these partially funded staff members were used to close the income achievement gap was discussed in a later question. The answers to this question, as shown in table 3.2, are correlated to the same school’s income achievement gap in reading and mathematics. However, the data show that of the two largest income achievement gaps, one school had 0 partially funded staff members and the other had 5 partially funded staff members.
Table 3.2

**Partially Funded Staff Member Correlation to Reading and Math Gaps**

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Partially Funded Staff Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>1</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>1</td>
</tr>
<tr>
<td>12.8</td>
<td>23.4</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>4</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>0</td>
</tr>
<tr>
<td>19.4</td>
<td>17.7</td>
<td>2</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>0</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>5</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>0</td>
</tr>
</tbody>
</table>

**Interview Question 3.** How are full time staff members used to close the income achievement gap? Two major trends appeared in the interviews and created two sub-categories for personnel. Class size reduction and intervention were the most described uses for full time staff members. Class size reduction was used by Title I school principals to hire a staff member above normal average daily membership (ADM) allotments so that the number of students per class is smaller. Intervention was used by Title I school principals to remove students from the large group setting to work on skills that were defined as a weakness that if remedied could close the academic gap. Class size reduction was mentioned by 55% of the Title I school principals. Intervention tasks, small groups, and instructional assistance were described by 73% of the Title I school principals. Another 9% used full time staff members for teaching technology. Another 9% of responding principals used their full-time staff members who were funded through Title I for before and after school tutoring. The correlations to income achievement gaps are listed in Table 3.3 below.
Table 3.3

*Full Time Staff Member Purpose Correlation to Reading and Math Gaps*

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Full Time Staff Member Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>Class size reduction, technology instruction, RTI assistance</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>Since the majority of our students are economically disadvantaged, our full time staff members are placed in classrooms where the biggest need is identified by test data. They are also placed in the younger grades to help the reading process foundation to be better built.</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>There is one teacher that is used to reduce class size and two instructional assistants that are used to support students in the classroom.</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>Lowers the classroom enrollment</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>Reading and math interventions</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>Classroom reduction. Read 180</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>reduced class size, intervention program</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>intervention, small groups, before and after school tutoring programs</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>Working with students in small groups; Also, reduce class sizes</td>
</tr>
</tbody>
</table>

**Interview Question 4.** How are part time staff members used to close the income achievement gap? Some of the Title I school principals did not employ partially funded staff members and thus were removed from the populated interview. Of the principals that responded to having partially funded staff members, only 33% used these members for classroom reduction. However, 100% of the respondents used partially funded staff members for intervention or instructional assistance. Another 17% used the staff members for technological instruction and another 17% used the staff members for before and after school tutoring. The correlations of the income achievement gaps in mathematics and reading to the ways the principals used partially funded staff members are below in Table 3.4.
Table 3.4

**Partially Funded Staff Member Purpose Correlation to Reading and Math Gaps**

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Partially Funded Staff Member Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>Class size reduction, technology instruction, RTI assistance</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>Basically in the same way. We focus on reading in the younger grades and let data guide us for upper grades, while trying to keep student-teacher ratios as low as possible.</td>
</tr>
<tr>
<td>12.8</td>
<td>23.4</td>
<td>Student instruction</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>As extra staff members to assist during RTI</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>Direct student support in reading and math</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>Intervention, small groups, before and after school tutoring programs</td>
</tr>
</tbody>
</table>

**Interview Question 5.** What resources do you fund with Title I funds? Four major sub-categories were noted: technology, parental involvement, instructional materials, and student planners. Technology garnished 82% of the respondents’ answers. Both parental involvement and instructional materials were mentioned by 36% of Title I principals. Student and parent planners accounted for 18% of the Title I principal interviews for resources purchased with Title I funds. The correlations of mathematic and reading income achievement gaps to resources funded by Title I are listed in Table 3.5 below.
Table 3.5  
*Resource Correlation to Reading and Math Gaps*

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>Mainly technology resources, 21st century learning tools</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>Mainly technology for our students. Promethean boards, computers, document cameras, chrome books, box light interactive 70 inch, etc. Title I money is strictly used for updating technology.</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>Student planners, Instructional equipment for teachers, parent involvement activities, technology for students (computer labs)</td>
</tr>
<tr>
<td>12.8</td>
<td>23.4</td>
<td>Student / Parent planners/ Technology/ Parent involvement activities</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>Teachers for classroom reduction numbers, summer school for struggling students, after school study hall and parent involvement.</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>Technology used in student instruction - last year specifically Chrome Books for non-purchased grades</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>Parent Involvement</td>
</tr>
<tr>
<td>19.4</td>
<td>17.7</td>
<td>Personnel, technology, parent engagement</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>Technology and/or lower level reading and math materials</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>Technology, (hardware and software) personnel, research based math and reading programs</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>Technological needs such as digital projectors, document cameras, and google Chromebooks</td>
</tr>
</tbody>
</table>

*Interview Question 6.* How are these resources used to close the income achievement gap? This question was designed to understand just how the resources on which Title I school principals spend their money relates to the purpose of Title I funding as closing the achievement gap. The three broad subcategories for how to use these resources are differentiation, collaboration, and improved instruction. Differentiation is used to provide students with individual learning tracks that are based on the student’s strengths and target the student’s weaknesses. Differentiation accounted for 45% of respondent answers. Collaboration in this interview directly pertains to collaborating with stakeholders and specifically with parents. Collaboration accounted for 36% of respondent answers. Improved instruction was a subcategory
generically developed to encompass anything related to instruction that would be different from a non-Title I funded school. Improved instruction accounted for 45% of responses. The correlation of how resources are used to close the income achievement gap to the actual mathematic and reading income achievement gaps are listed in Table 3.6 below.

Table 3.6
*How Resources Close the Income Achievement Gap Correlated to Income Achievement Gaps in Mathematics and Reading*

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>How Resources Close the Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>All economically disadvantage students receive RTI, Fountas and Pinnell, supplemental resources, and access to a highly qualified staff.</td>
</tr>
<tr>
<td>6.8</td>
<td>8.0</td>
<td>Once again, since we are in the upper 90% economically disadvantaged, our resources are used to build basic skills for our students who do not have the necessary tools at home to build a foundation for learning. These resources are chosen based on test data and skills needed.</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>Student planners are used to communicate homework and missing assignments to parents. Instructional equipment and computer labs are used to support students academically.</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>Improve instruction. By not only giving the at risk student extra help but also trying to educate the parent in how to help.</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>Direct instruction used by eighth grade students during language arts and math instruction.</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>Pamphlets,</td>
</tr>
<tr>
<td>19.4</td>
<td>17.7</td>
<td>We use personnel to meet specific areas of need. The technology is specifically used for areas of academic need. Parents are involved decision makers and participate in yearly survey to help build in areas of need.</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>Differentiated materials to work on their level.</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>Resources are used for individualized student needs and to address student strengths and challenges.</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>These tools aid in classroom instruction and allow classroom teachers an opportunity to reach students that learn in many different ways.</td>
</tr>
</tbody>
</table>

**Interview Question 7.** What programs do you fund with Title I funds? Most of the programs mentioned were third party instructional programs. Two main subcategories emerged
from the program category: intervention programs and instructional programs. Intervention programs differ from instructional programs in that they target a specific population instead of being used to increase the academic capacity of everyone in the classroom. Intervention programs include programs like READ 180 while instructional programs include programs like Accelerated Reader. Some form of intervention program was mentioned by 55% of the Title I school principals during the interview. Some form of instructional program was mentioned by 36% of the Title I school principals. Only 9% mentioned a parental involvement program in their interview. The correlation of income achievement gaps to school programs are listed in Table 3.7 below.

Table 3.7

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>School Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>Supplemental intervention materials</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>Basically just parental involvement programs. For example, providing simple flash cards for our students for the summer months.</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>Timez Attack, Big Brainz, GradeBook Wizard</td>
</tr>
<tr>
<td>12.8</td>
<td>23.4</td>
<td>Salaries/ Various instructional programs</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>study halls, classroom reduction, summer school</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>Read 180</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>Read 180</td>
</tr>
<tr>
<td>19.4</td>
<td>17.7</td>
<td>Class Size reduction, resources for RTI 2,</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>N/A</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>Hornet Hive Time (before school tutoring program), iXL (ELA and Math)</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>Accelerated Reader</td>
</tr>
</tbody>
</table>

**Interview Question 8.** How are these programs used to close the income achievement gap? The motivations behind using these programs mirrored that of the motivations for using resources. Differentiation and Intervention were placed together because it was unclear as to whether some
of the programs helped every student or just a select group. After further investigation, it is fluid and depends upon the program. Therefore, differentiation and intervention were linked together and became the largest subcategory with 64% of the responses directly linked to either an intervention or differentiation. Collaboration received 18% of the responses and were specifically linked to collaboration between teacher or school and parents. Improved instruction received 18% of the responses and equal access to highly qualified teachers received 9% of responses. These responses are listed with the income achievement gaps in Table 3.8.

Table 3.8

Correlation of Income Achievement Gaps to How Programs Close the Gaps

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>How Programs are Used to Close Gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>All economically disadvantaged students have equal access to these particular programs</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>These programs once again help build the basic skills that the students lack from home.</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>Students use them daily to improve math and reading skills. Gradebook Wizard is used to keep up with assignments, communicate with parents and teachers</td>
</tr>
<tr>
<td>12.8</td>
<td>23.4</td>
<td>Improve instruction</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>To provide extra academic help for these students and suggestions to help parents help children with homework.</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>Closing the reading achievement gap</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>This program lowers the student teacher numbers, thus allowing more individual attention.</td>
</tr>
<tr>
<td>19.4</td>
<td>17.7</td>
<td>They are used by teachers for student needs of growth.</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>N/A</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>Programs are used for individualized student needs and to address student strengths and challenges</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>This program allows students to read and accrue points to reach attainable educational goals set by classroom teacher.</td>
</tr>
</tbody>
</table>

**Interview Question 9.** Do you spend any Title I funds on infrastructure, or organizational structure, including before and after school programs, health programs, food programs, preschool, extended school day, or attendance programs? If so, for each item, please describe how it
helps close the income achievement gap. Most of the Title I school principals interviewed did not conduct programs associated with organizational structure, or infrastructure. Only 36% responded with programs they employ to close the income achievement gap in this area. The responses were largely unique to the school. Only after school programs received 18% of the responses that were given. Parent involvement, summer school had, and weekend food bags all received 9% of the responses individually. One school received free and reduced lunch for 100% of their students regardless of status. The correlations of programs to income achievement gaps are listed in Table 3.9 below.

Table 3.9
**Correlation of Organizational Structure to Income Achievement Gaps**

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Organizational Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>I do a parent involvement activity for students transitioning from Pre-K to kindergarten</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>We have in the past year spent Title I funds on summer school programming. This helps us provide transportation to bring in more students, more teachers to key in on needed reading and math skills at different levels, and more assistants to keep ratios low between adults and students.</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>No</td>
</tr>
<tr>
<td>12.8</td>
<td>23.4</td>
<td>No</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>Yes all students at our school eat a free lunch, we have an after school program in 4th grade to help struggling students or students that are not able to receive help at home, parents are met with to discuss ways to resolve truancy issues, a food for the weekend is used to help make sure all students receive food for the weekend.</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>No</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>No</td>
</tr>
<tr>
<td>19.4</td>
<td>17.7</td>
<td>No, the only out of school expense goes to parent involvement activities.</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>No</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>Before and after school tutoring programs</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>No. We do not.</td>
</tr>
</tbody>
</table>
Interview Question 10. What are other best practices that your school employs to help close the income achievement gap? Most of the responses to this interview question were closely related to previous questions. For instance, the Learning Enrichment After-school Program (LEAP) is an after school program that would have been better suited under infrastructure. However, for the purpose of result reporting and because the study examined perceptions as much as reality, the answers were reported as recorded. The LEAP program, parent involvement programs, and Response to Intervention (RTI) all garnished 18% of the responses as best practices for closing the income achievement gap. All other responses were individual and received 9% of the response. Students setting SMART goals with the guidance department and having students track their own data were reported by one Title I school principal. Another principal reported partnership learning as a best practice that is employed at her school for closing the income achievement gap. Incentive programs, clothes closets, after school clubs, and mentoring were all also mentioned as best practices at closing the income achievement gap. Best practices and their correlation to income achievement gaps are presented in Table 3.10 below.
Table 3.10

*Best Practices Correlated to Income Achievement Gaps*

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Best Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>student owned data, setting smart goals with guidance department and RTI equal accessibility</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>We do offer an after school program through a grant, free lunch to every student provided by a government grant, incentives provided by groups such as the Kiwanis, supplemental materials provided by fund raising, etc.</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>We have a LEAPS grant that funds before and after school tutoring.</td>
</tr>
<tr>
<td>12.8</td>
<td>23.4</td>
<td>Parent involvement programs to get parents involved in students education</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>Providing a clothing, shoes and food closet for all students that need help.</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>before and after school tutoring program funded by a LEAPS Grant</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>RTI</td>
</tr>
<tr>
<td>19.4</td>
<td>17.7</td>
<td>Our goal is to find the best way possible to give all of our students an equal opportunity for learning.</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>RTI, small groups, grouping, parent involvement workshops, mentors, after school clubs</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>Emphasis on grouping and partnership learning. Also, small class sizes greatly assist in closing the gap.</td>
</tr>
</tbody>
</table>

**Interview Question 11.** How valuable is Title I funding to the mission of closing the income achievement gap and what would the gap look like without it? All Title I principals proclaimed the value of Title I funding exuberantly. Some used words such as invaluable, extremely valuable, and could not be measured when speaking to the value of Title I funding. Some mentioned that they would not want to see what it would look like without the funding, which was also mentioned in the literature review. Most importantly, principals predicted that the income achievement gap would be much larger without it.

**Other Findings**

The Title I school budget was also analyzed to gain understanding of how much of the budget was spent on categorical items such as personnel. Only salaries and benefits and parent
Involvement programs were recorded yearly and could be shared from the year in study. One interesting finding was that some of the smallest gaps in math were associated with schools that contained the highest percentage of economically disadvantaged students. Inversely, some of the largest gaps in mathematics came from schools with the lowest percentage of economically disadvantaged students. The percentage of funds spent on personnel ranged from 81.2% to 98.6%. The average percentage of funds allocated for personnel was 95.3%. The percentage of funds spent on parental involvement programs ranged from 0.6 to 1.5. However, most schools spent exactly 1.4%. The percentage of students who were economically disadvantaged ranged from 65.6% to 88.2%. The average percentage of economically disadvantaged students in the Title I schools was 72.4%. The values described are listed in Table 3.11 below.

Table 3.11

Income Achievement gaps, % Free and Reduced Lunch, % Spent on Personnel, % Spent on Parental Involvement Programs

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>% F/R</th>
<th>% Spent on Personnel</th>
<th>% Spent on Parental Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>4.7</td>
<td>73.7</td>
<td>99.2</td>
<td>1.4</td>
</tr>
<tr>
<td>14</td>
<td>7.6</td>
<td>71.8</td>
<td>98.7</td>
<td>1.3</td>
</tr>
<tr>
<td>6.8</td>
<td>8</td>
<td>88.2</td>
<td>93.9</td>
<td>0.6</td>
</tr>
<tr>
<td>19.1</td>
<td>13.8</td>
<td>76.1</td>
<td>98.9</td>
<td>1.1</td>
</tr>
<tr>
<td>19.4</td>
<td>17.7</td>
<td>65.6</td>
<td>95.2</td>
<td>1.4</td>
</tr>
<tr>
<td>15</td>
<td>22.3</td>
<td>68.3</td>
<td>81.2</td>
<td>1.4</td>
</tr>
<tr>
<td>22.1</td>
<td>22.5</td>
<td>65.7</td>
<td>98.6</td>
<td>1.4</td>
</tr>
<tr>
<td>12.8</td>
<td>22.8</td>
<td>73.9</td>
<td>88.6</td>
<td>1.4</td>
</tr>
<tr>
<td>12.8</td>
<td>23.4</td>
<td>82.2</td>
<td>94.7</td>
<td>1.1</td>
</tr>
<tr>
<td>24.5</td>
<td>24.6</td>
<td>67</td>
<td>98.5</td>
<td>1.5</td>
</tr>
<tr>
<td>26.3</td>
<td>24.9</td>
<td>66.8</td>
<td>97.6</td>
<td>1.4</td>
</tr>
<tr>
<td>32.4</td>
<td>26.4</td>
<td>69.1</td>
<td>98.6</td>
<td>1.4</td>
</tr>
</tbody>
</table>
Analysis of Non-Title I School Interviews

A separate interview was given to non-Title I school principals to gain an understanding of principal perceptions of things they needed that they were lacking because of monetary backing as well as contribute to the research question of what best practices are for closing the income achievement gap. The results were also compared to where Title I school principals actually spent their Title I funds. This allowed the researcher to gain insight into what non-Title I principals thought would be beneficial to close the income achievement gap in their school. Non-Title I principals do not receive Title I funds and their answers are purely speculative. All four non-Title I principals responded to the interview.

Interview Question 1. How many staff members would you fully fund with Title I funds? The answer to this question ranged from 1-4. The average was 2.25.

Table 4.1
Correlations of math and reading gaps to proposed full-time staff

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Full Time Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>2</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>1</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>4</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>2</td>
</tr>
</tbody>
</table>

Interview Question 2. How many staff members would you partially fund with Title I funds? Principal answers to this question ranged from 2 to 3 additional staff. The average was also 2.25. There was another question that asked how the principal would use the extra staff members.
Table 4.2

Correlation of math and reading gaps to proposed partially funded staff members

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Partially Funded Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>3</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>2</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>2</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>2</td>
</tr>
</tbody>
</table>

Interview Question 3. How would these full-time staff members be used to close the income achievement gap? The most common trend in the tasking of the hoped for fully funded personnel was for intervention. While 75% of the interviewed principals specifically named intervention as the main avenue for using fully funded staff members, only 25% specifically named response to intervention (RTI) as the purpose. Another 25% added a READ 180 teacher in addition to interventionists for reading and math. READ 180 is an intervention program that provides blended learning experiences with technology and group work.

Table 4.3

Correlation of math and reading gaps to the proposed utility of full time staff members

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Utility of Full Time Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>These staff members would be utilized as full time interventionist for reading and math, as well as a Read 180 full time teacher.</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>Intervention teachers</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>Work daily with our tier students</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>Provide additional educational opportunities for economically disadvantaged students.</td>
</tr>
</tbody>
</table>

Interview Question 4. How would these part time staff members be used to close the income achievement gap? Again, the main theme for the part-time staff members was intervention. Two of the principals recorded that they would use the assistants to either work
with RTI or to provide flexible scheduling that allowed others to work with RTI. Another 25%
specified intervention specifically for economically disadvantaged students. Another 25%
specified that they would use their personnel as assistants, but it is unclear if the assistants would
be used in an intervention setting.

Table 4.4
Correlation of math and reading gaps to the proposed utility of partially funded staff members

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Utility of Partially Funded Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>Part time teachers would allow for supplemental support so that the school would make AYP in reading and math by allowing more flexibility with RTI2 scheduling (time on task state mandates) and allow the delivery of RTI services to be done by qualified personnel.</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>Classroom assistants.</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>Work daily with our tier students</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>I would use them to work specifically with economically disadvantaged students.</td>
</tr>
</tbody>
</table>

**Interview Question 5.** What resources would you fund with Title I funds? The most common answers to this question were technology. Technology upgrades, Chromebooks for a new grade level, and generic classroom technology were 75% of the responses. The second most coveted item was intervention materials, particularly in mathematics. Of the principals who answered the survey, 50% asked for more intervention materials.
Table 4.5

Correlation of math and reading gaps to proposed resources

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>Classroom technology</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>Math resources - we have lots of reading materials, but not a lot of things to use in math intervention.</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>Assistants, and remedial instructional materials. Chromebook a for 3rd graders</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>Spending would depend on my current needs. Likely, the bulk of the money would be for technology upgrades.</td>
</tr>
</tbody>
</table>

**Interview Question 6.** How would these resources be used to close the income achievement gap? While trends were easy to find in the coveted resources, the reasoning behind purchasing those said resources varied. However, the most common answer related to individualized learning or a learning track that allowed students to progress at their own rate. Individualized learning and targeting academic weaknesses were mentioned by 50% of the principals interviewed. In the same realm of thought, 25% of the principals interviewed would use the resource money to create small groups using staff and focus on weaknesses using intervention. Another 25% reasoned the reason for spending their money on resources was to provide more instruction for those who do not receive educational enrichment after school hours. Lastly, another 25% mentioned helping students achieve academic standards.
Table 4.6

*Correlation of math and reading gaps to the proposed utility of resources*

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Utility of Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>Aid students in meeting Tennessee academic content and academic achievement standards and help meet ESSA by providing more individualized learning opportunities.</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>Small groups</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>More instruction for students whose parents can't or won't help or encourage them.</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>There are numerous programs available through technology that can track progress of struggling students and target their weaknesses.</td>
</tr>
</tbody>
</table>

**Interview Question 7.** What programs would you fund with Title I funds? The most common responses to this mentioned specialized academic programs that meet the needs of students and staff professional development, both garnishing 50% of responses. Another 25% wanted parenting classes. Additionally, 25% wanted after school or summer school tutoring and peer mentoring. Still yet, another 25% wanted technical education that would engage some of our students in the particular interests that they have and thus increase engagement in all areas.

Table 4.7

*Correlation of math and reading gaps to proposed programs*

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>Special programs to meet the unique academic needs of our students, such as: programs that provide mentoring and peer mediation, technical education, after school tutoring program or summer staff and school program, and professional development for non-required training hours.</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>I like spire - the program special Ed is currently using.</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>I would like to have parenting classes.</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>Staff development on strategies best used to close achievement gaps.</td>
</tr>
</tbody>
</table>
Interview Question 8. How would these programs be used to close the income achievement gap? Non-title I school principals answered that this would help close the income achievement gap by helping students meet the academic content standards outlined in the Every Student Succeeds Act (ESSA) and to provide staff assurances that they were meeting the needs of students from every economic level. Non-Title I school principals responded to the specifics of the program and the participants as the reason it would close the income achievement gap. The interview revealed that parenting classes could be used to help parents understand the academic needs of their students as well as grow the capacity of parents in the process of working with teachers.

Table 4.8

Correlation of math and reading gaps and the proposed utility of programs

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Utility of Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>Aid students in meeting Tennessee academic content and academic achievement standards and help meet ESSA by providing more individualized learning opportunities.</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>I would like to use them for RTI K-3</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>Possibly parents could develop an understanding of their students’ academic needs and the process of working with teachers.</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>The programs would provide the staff assurance that we are meeting the needs of all economic levels.</td>
</tr>
</tbody>
</table>

Interview Question 9. Would you spend any Title I funds on infrastructure including before and after school programs, health programs, food programs, pre-school, extended school day, or attendance programs? If so, for each item, please describe how it would help close the income achievement gap. Of the principals interviewed, 75% responded that they would spend Title I funds on organizational structures outlined in the question and 25% responded that they would not spend Title I funds on such organizational structures. Of the principals who responded
that they would use Title I funds to provide these programs, 100% mentioned after school programs. The reasoning behind this answer included enrichment, remediation, acceleration, homework help, tutoring, and access to technology.

Table 4.9
Correlation of math and reading gaps to organizational structures

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Organizational Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>It is my limited understanding that Title 1 funds cannot be used for infrastructure items such as building purchase or lease or anything that is not removable; for example, built in cabinets. As indicated above, an after school or summer school program would be contingent on grants and Title I funding.</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>No</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>I would love to have an extended school day that would provide schoolwork/homework help. Student without computers/Internet access could have those tools to use for remediation and acceleration</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>When structured properly, after school programs provide needed enrichment for students in need.</td>
</tr>
</tbody>
</table>

**Interview Question 10.** What are other best practices that your school employs to help close the income achievement gap? Of the principals interviewed, 50% responded with RTI. Another 25% responded that they ensure each child has an advocate in their school. Another 25% encouraged volunteers to come and help in their school. Other answers included professional development for best practices, home visits, redefined homework policies, and a summer reading program developed by teachers on a voluntary basis.
Table 4.10

*Correlation of math and reading gaps to best practices*

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Best Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>27.9</td>
<td>Professional development on poverty students, homeless students, and school culture.; Summer reading program designed by primary teachers; RTI, staff awareness conversations and home visits, redefining homework policies, and ongoing professional development of effective, research based best practices.</td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>I think just simply making sure every kid has an advocate - or someone to look out for them.</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>We encourage volunteers to work with students.</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>RTI is used to identify struggling students. We use the data from the STAR assessment to identify students who are struggling in math and reading/language arts. Students who fall below certain level are given an additional 45 minutes of instruction daily.</td>
</tr>
</tbody>
</table>

*Interview Question 11.* How valuable is Title I funding to the mission of closing the income achievement gap, and what would the gap look like without it? While 75% deem the funding a great difference, 25% also alluded to smaller ratios being able to solve problems with attendance, behavior, and academic gaps. Along with the pros of Title I funding also came some concerns. One principal asked about the autonomy of spending those funds in a way that could make the biggest impact as deemed by the principal. Another principal noted that it is teachers that make the difference with students, not programs and materials. Another principal said that the funding could make a difference if the funds are allocated properly.
Table 4.11

**Correlation of math and reading gaps to the value of Title I funding**

<table>
<thead>
<tr>
<th>Math Gap</th>
<th>Reading Gap</th>
<th>Value of Title I Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>With the increase of the school's free and reduced population and homeless students, the gap is becoming more prevalent; however, the local funding from the City of Gatlinburg is the root cause to the effective programs in place and supplemental staffing in place that have assisted with gap closure. Take away those local funds, and the achievement gap would be far greater, showing a greater need of what Title 1 funds could do for our school. In a sense, I look at City funds as the Title 1 funds we don't currently have. The question is how much autonomy is given with regards to Title 1 allowable expenses to building level principals in each district across the state that are Title 1 to do what he/she deems most effective for the school?</td>
</tr>
<tr>
<td>21.2</td>
<td>27.9</td>
<td></td>
</tr>
<tr>
<td>21.6</td>
<td>26.4</td>
<td>I think the money is nice, but its teachers that make the difference in the lives of kids, not programs and materials.</td>
</tr>
<tr>
<td>22.6</td>
<td>23.5</td>
<td>We have never had Title 1 funding but I think that, the more one on one that we have is a big part of solving behavior issues. Attendance and academic problems.</td>
</tr>
<tr>
<td>23.1</td>
<td>18.4</td>
<td>Any additional funds a school gets can make a great difference if the funds are allocated properly.</td>
</tr>
</tbody>
</table>

**Summary**

Different methods were employed to compare the income achievement gap of Title I and non-Title I schools and to determine the efficacy of Title I funding in the medium sized school district in East Tennessee. First an f-test was performed to determine if the t-test should be processed for equal or unequal variances. It was determined that the t-test should be performed for equal variances in reading and unequal in mathematics. The t-test for equal variances determined that the relationship between Title I funding and the reading income achievement gap was not statistically significant. The t-test for unequal variances determined that the relationship between Title I funding and the mathematic income achievement gap was statistically significant.
The Title I school principal interview resulted in a broad picture of how principals utilize Title I funds and what best practices are employed to close the income achievement gap. Personnel were used primarily for class reduction and intervention. Resource funds were generally spent on technology. Programs assisted teachers in individualized instruction or with intervention. Most schools do not provide organizational structures outside of the normal school day with the exception of after school tutoring or summer schools. Parental involvement and intervention were both named as best practices in closing the income achievement gap. Finally, all principals recognized the importance of Title I funding on closing the income achievement gap.

Non-Title I school principals were interviewed to gain a picture of how they would close the income achievement gap if they had Title I funds. Principals said that they would use both fully and partially funded staff for intervention and class size reduction. Principals stated that they would use resource funds on technology and parental involvement. Principals further explained the programs that they would use instructionally and in intervention. Principals hypothesized that they would use Title I funds for parenting classes as well as before and after school tutoring. Non-Title I principals divulged their best practices for closing the income achievement gap and recognized the importance of Title I funding for closing the income achievement gap.
Chapter V: Conclusion

Since the inception of Title I, researchers have asked if the funds have made a difference (Stickney & Plunket, 1982). While studies have been conducted on Title I funding, a study has never been performed at the chosen school district for this study on the income achievement gap in association with Title I funding. The purpose of this study was to make income achievement gap comparisons between Title I and non-Title I schools, determine the efficacy of Title I funding in a medium sized school district at closing the income achievement gap as well as determine best practices for closing the income achievement gap. The income achievement gap was studied in both mathematics and language arts. The schools involved in the qualitative portion of the study were divided into Title I schools and non-Title I schools. A t-test was performed to determine the efficacy of Title I funding from a quantitative perspective and principal interviews were carried out for the qualitative portion of the mixed study. Title I budgets were also examined as part of the qualitative portion. These were performed to answer the questions that guided this study:

1. In the school district chosen for the study, what comparisons may be made regarding achievement gaps between Title I schools and Non-Title I schools?
2. What are the best practices of Title I schools at closing the income achievement gap?

One of the purposes of Title I funding was to close the income achievement gap and provide equal access to high quality instruction (Davis, 1966; The Rural School and Community Trust, 2016). Researchers have theorized about the efficacy of Title I funding since its implementation (Borman, 2002; Borman & D'Agostino, 1996; Camera & Cook, 2016; Davis, Jr., 1966; Hanover Research, 2014; Stickney & Plunkett, 1982; Wong & Meyer, 1998). Even after 40 years of Title I funding, the achievement gaps were prevalent and in some cases had grown
Title I is the largest K-12 funding source from the federal government (Cameron and Cook, 2016). When this much funding is devoted to a cause, the public beckons to know if it is making a difference or if funds are being spent appropriately. Spending money doesn’t solve issues. Spending money intentionally well solves issues. The poverty rate is higher than when the War on Poverty began in the 1950s (Edelman & Jones, 2004). This study sought to answer the question of efficacy for a medium-sized school district in East Tennessee.

This chapter provides a discussion of the t-test results, a discussion about the principal interviews, recommendations for future research, and conclusions. The school principal interview discussion is broken into four themes: personnel, resources, programs, and organizational structure. The themes were used to code and then organize the interviews.

**Discussion of T-Test Results**

A t-test was performed to answer one of the research questions that guided the study about what comparisons could be made in regard to income achievement gaps between Title I and non-Title I schools. The t-test was also used to determine if Title I funded schools had statistically lower income achievement gaps. The one-tailed t-test found that Title I funding had a statistically significant relationship to a lower income achievement gap in mathematics. The one-tailed t-test determined that there is not a statistically significant relationship to a lower income achievement gap in reading and language arts when using a 0.05 level of significance. A one-tailed t-test operates under an assumption that there should be an effect. The researcher’s assumption was that Title I schools would have lower income achievement gaps. The t-stat was negative in both one-tailed tests showing that Title I schools had lower income achievement gaps than non-Title I schools.
Therefore, the evidence suggested that Title I funding is making a difference in the medium sized school district. The use of extra staff members to reduce class sizes and for intervention has made a difference in the income achievement gap for Title I schools. The average income achievement gap was smaller for Title I schools in both reading and language arts and mathematics. Four non-Title I schools were studied in both reading and mathematics resulting in eight data points. Seven of the eight data points showed an income achievement gap of more than 20 percentage points. The only category not to be above twenty was one mathematics gap.

The Title I schools studied varied in size, demographics, and income achievement gaps. The variance of income achievement gaps was much larger for Title I schools. In mathematics the variance was over 64 for Title I schools while for non-Title I schools it was under 1. In reading and language arts the variance for Title I schools was 59 while for non-Title I schools it was 17.5. The larger variances show that some schools were more effective at closing the income achievement gap than other schools. For instance three Title I schools had larger gaps in mathematics than any of the non-Title I schools. Those same three schools had income achievement gaps in reading and language arts that was comparable to non-Title I schools. Therefore, some schools were more effective at closing the income achievement gap. This caveat was important when interpreting the principal interviews.

Discussion of Principal Interviews

School principals were interviewed to determine best practices in closing the income achievement gap and for the use of Title I funding. Principals of both Title I and non-Title I schools were interviewed. There were a total of 16 schools in the chosen school district that served 3rd through 8th grades. All but one responded to the interview. There were four non-Title I
schools and 12 Title I schools. The non-respondent was a principal of a Title I school. The Title I budget of the chosen school district was also analyzed by school to determine how the most successful schools spent their Title I funds.

**Personnel**

Principals were interviewed about personnel to determine best practices in employing and utilizing personnel for the purpose of closing the income achievement gap. In the chosen school district, most of the Title I funds are spent on personnel. It is important for principals tasked with closing the income achievement gap to not only determine how many staff members they need to employ, but also how they will be utilized intentionally to close the income achievement gap.

Questions 1 and 3 go together as a lead question and a follow-up question. Question 1 asks how many staff members are fully funded with Title I funds while Question 2 asks how they utilized these staff members in the Title I principal interview. These questions ask the principals to hypothesize what they would do if they had extra funds in the non-Title I principal interview. Title I funding is tied to the average daily membership of students. Therefore, larger schools will have more money than smaller schools. This equates to more or less staffing. Staff members fully funded from Title I funds was 3.55. The principals that were from non-Title I schools hypothesized that they would spend their Title I funds on an average of 2.25 fully funded staff members.

The uses for these fully funded personnel were mostly for class size reduction and intervention. The hypothesized use of these staff members from non-Title I schools was for intervention. Both surveys indicated a need for full time interventionists. The interventionists would be tasked with a core subject area, either mathematics or reading and language arts, and target economically disadvantaged students.
The largest expenditure for any Title I school studied was personnel. Almost all schools spent upwards of 90% of their Title I school budget on personnel. Although the size of the school is the largest determining factor in how many full-time personnel the Title I school can receive, the best practice that emerged was 3 full-time staff members. The most common trend for employing these staff members was class size reduction and intervention. It was important to note that full time staff members could be used for both class size reduction by teaching a core subject and intervention during a school-wide Response to Intervention (RTI) time. The best practice for small schools was to use one for class size reduction and use the other two full time employees for intervention in reading and language arts and mathematics. The larger schools who received 5 interventionists would still have 2 full time interventionists in reading and language arts and mathematics and use the others for class size reduction.

The most vital finding about personnel with Title I funding was that more staff members did not always equate to smaller gaps. Some schools had five full-time Title I funded staff members but had the same gap size and non-Title I schools. One school had only one full-time interventionist but had the smallest gap sizes in the school district examined. If most schools use the extra personnel for class size reduction but it yields different results, then there must be something more powerful than having smaller numbers of students in a classroom. Intervention is a powerful way to target students, target gaps, and increase the strengths of students if the intervention is of high quality. While using full time staff members for class size reduction is widely used, it is equally as important to develop an intervention system that helps economically disadvantaged students close instructional gaps.

Questions 2 and 4 were linked because question 4 was a follow up question to question 2. Question 2 asked Title I school principals how many staff members they partially fund with Title
I monies and asks non-Title I school principals how many they predict they would fund with Title I monies. Question 4 asked Title I school principals how they utilize these staff members and asked non-Title I school principals how they would utilize these staff members. The average of partially funded staff members from Title I funds was 1.55. The average predicted need for partially funded staff members from the non-Title I principals was 2.25.

Title I school principals use partially funded staff members for intervention, small groups, and targeted academic instruction. Non-Title I school principals stated that they would use their partially funded staff members for intervention, specifically RTI, and to target economically disadvantaged students. Partially funded staff members should be used for intervention and more specifically to target weaknesses of economically disadvantaged students in the areas of mathematics and reading and language arts. These staff members should have curriculum that is tailored to the student but also allows for small group instruction. These staff members should be veteran teachers that have proven experience in closing the income achievement gap.

Again, more personnel does not always equate to success at closing the income achievement gap. Some of the largest gaps in the Title I category came from two schools who had four and five partially funded staff members. These staff members needed to be utilized intentionally to close the income achievement gap. They needed to have access to scientifically research-based curricular materials, be experienced at progress monitoring programs, and be able to create individualized learning tracks for several students. The ideal number of partially funded staff members is 2, one for reading and language arts and one for mathematics.
Resources

Principals were interviewed about resource expenditures to determine best practices for purchasing resources with Title I funds. Principals were asked what resources they purchased with Title I funds and how this helped to close the income achievement gap. Question 5 asked what resources the Title I school principal purchased with Title I funds and question 6 asked how those same resources closed the income achievement gap in Title I schools. In the non-Title I school interview, the companion question asked what resources the non-Title I school principal would purchase if they had the funds. The Title I school principal interview garnished four categories for which the funds were spent: technology, parental involvement, instructional materials, and student planners.

Technology was a popular option because most schools do not have this incorporated in their operating budget. Title I funds are used to purchase new equipment as well as upgrade and refurbish existing equipment. Technology is necessary for closing the income achievement gap because a lot of economically disadvantaged students do not have access to technology or internet at home. Having these resources at schools allows economically disadvantaged students the same access as non-economically disadvantaged students. Technology is a tangible way to close the income achievement gap (Neuman, S., 2013).

Technology is also used for differentiation, as indicated by the principal interviews. Technological programs allow the teacher to automatically assess a students’ strengths and weaknesses and then build a learning track, or program, around them. A middle school teacher may see around 100 students every day. While differentiation may be a currently popular buzzword, it was problematic to efficiently differentiate for 100 students without an intricate
program that automates a lot of the time consuming tasks that it would take to differentiate with fidelity. Technology is a “work smarter, not harder” way to close the income achievement gap.

Parental involvement was another category that emerged from the principal interviews for questions 5 and 6. This seemed to have been an underreported category, but parental involvement fit under programs as well. The utility of parental involvement ranged from pamphlets to educational meetings in which the school provided an avenue for the parent to be taught how to help their child. The school that provided this avenue had the 2nd lowest income achievement gap in reading and language arts. Some schools also included parents in the decision making process and used resources for surveys.

Student planners were also included as resources that a lot of schools used to help close the income achievement gap. This resource helped with two-way teacher/parent communication. It was also reported that this helped with parent collaboration to help close the income achievement gap. The student planner was a way to communicate student work and homework to the parent and provide an added layer of accountability. It was also a clear symbol of teamwork to the student that the student could see that both parent and teacher were on the same team.

The 4th category to come out of resources was instructional materials. These resources were mainly earmarked for either intervention or improving whole group instruction. Some principals named certain 3rd party resources while others simply marked it for intervention. Intervention was a powerful way to close the income achievement gap because the very essence of intervention is to target gaps, bridge gaps, and then return to regular instruction. It is not a special education label and not a yearlong class. Intervention is designed to find the need, meet the need, and return students to the general education setting. Intervention is individualized and
differentiated. Intervention can be an effective way to close income achievement gaps if purchasing resources that are scientifically research based to close achievement gaps.

**Programs**

Principals were interviewed about special programs at their school to determine best practices in initiating programs with the intention of closing the income achievement gap. Questions 7 and 8 pertained to special programs Title I schools initiated to close the income achievement gap. Most of the responses from Title I school principals pertained to third party software programs. Non-Title I school principals also noted third party software programs but also included parenting class programs and after school programs. Only one Title I school program included after school programs. The reason for this was that a lot of schools were indirectly involved in an after school program through the federal Learning Enrichment After-school Program (LEAP) in partnership with the Boys and Girls Club or other after school program.

The two groupings for programs were instructional and intervention programs. The most common intervention program mentioned was READ 180, a program that is both small group and technology-based, that seeks to close achievement gaps for targeted students. No two instructional programs were the same ranging from Accelerated Reader to Gradebook Wizard. Title I schools used these programs to close the income achievement gap through differentiation and intervention. Both differentiation and intervention are key elements to closing the income achievement gap.

**Organizational Structure**

Principals were interviewed about organizational structures such as modified calendars, modified school days, before and after school programs, and summer school to determine best
practices in organizational structure with the intention of closing the income achievement gap. There was not a lot of affirmative responses for question 9. Most responded that they do not offer programs beyond the normal school day. Some offer after school tutoring, summer school, or weekend food backpacks that go home with the student. Non-Title I school principals deemed that they would spend Title I monies to fund an after school program. All schools have truancy meetings and some have attendance events to motivate students to come to school. After school programs allow for personnel to close income achievement gaps by giving individual attention, individualized curriculum, limiting distractions caused by others, and access to educational materials that economically disadvantaged students may not have at home.

Other programs can be used to close the income achievement gap such as parental involvement classes. The research indicated that the income achievement gap was prevalent by the time the student reaches kindergarten. Operating under this assumption, some schools and states implemented birth to five years initiatives (Nelson, 2006). These were programs that helped to educate parents on how to best educate their child and how to prepare them for school. These programs teach the parent how to teach the child. Currently, the medium-sized school district does have a pre-school program available under Title I funds. None of the principals included this in their interview because this program allows for pre-K classes as an offshoot of another school that is only preschool. The main campus is a preschool campus that only serves special needs students. The pre-K classes that are available at other schools are available to regular education children based on income at a first-come, first-serve basis.

Summer school is another program that is made available for special needs students, English language learners, and some campuses offer it for regular education students. This is another effective way to combat the summer “brain drain” that results when economically
disadvantaged student spend two months out of school. Their non-economically disadvantaged peers may go on vacations, visit museums and libraries, or learn via a computer with internet access, while economically disadvantaged students have little or no educational opportunity. Summer educational opportunities are an organizational structure that can close the income achievement gap.

**Recommendations for Future Research**

While the study affirmed the efficacy of Title I funding in the medium-sized school district chosen for the study, this study should be performed on a larger level before accepting generalizability. The t-test population could be enlarged to the entire state or regions within the state. Three years of testing should be used in the results to ensure the validity of the testing instrument. District level Title I coordinators should be used in future research. While some principals may know how every penny is spent, others may forget which programs are paid for out of Title I funds or another funding source. The dates of the interviews occurred months after Title I budgets were created and should be performed closer to the time of conception.

Further research would be beneficial to target certain components such as a study based solely on the utilization of personnel funded by Title I funds. This study gives a general idea of how to spend Title I funds, but one with more detail could be more beneficial when making complicated decisions. Studies with more depth could also render an opportunity for a meta-analysis on Title I funding. Further research could help guide principals to spend money intentionally on closing the income achievement gap and help non-Title I schools spend money effectively to close their income achievement gaps.
Conclusion

Best practices were formed from the responses to the principal interviews. While the number of personnel largely depended on a school’s size, the utilization of the personnel should be geared toward intervention in both mathematics and reading and language arts as well as classroom size reduction. Resources should be geared toward classroom technology that students are able to use on a daily basis. Resource funding should also go towards intervention materials that allow teachers to close the income achievement gap with a scientifically researched curriculum designed to close gaps. Programs should focus on parental involvement, staff development, and instructional programs that close income achievement gaps. Title I funding should allow for additional educational opportunities such as before or after school programs, summer school, or preschool. These findings are limited by the small sample size of the medium-sized school district and could be robustly developed by growing the study to generalizability.

The statistical analysis revealed that Title I funding is helping to close the income achievement gaps in the medium-sized school district chosen for the study. While Title I funding was more effective in mathematics, it was also prevalent, but not significant, in reading and language arts. Smaller schools had greater efficacy at closing the income achievement gap than larger Title I schools. Given the proven efficacy of Title I funding, the income achievement gaps would be much larger without it.

While one cannot assume a certainty that money alone can close the income achievement gap, one can plausibly assume that Title I funding can make a difference in closing the said gap. It is not the money that is spent on Title I that makes a difference, it is the intentionality that the expenditures have behind it that is powerful. For instance, it does not matter if you have five extra staff members if the staff members are not used effectively in regard to gap closure.
Likewise, having a program like READ 180 does not guarantee success. Programs must be implemented correctly and used with fidelity. Intervention can be effective at closing the income achievement gap. However, the intervention must target gaps that the student has and not just give more of the same instruction that resulted in the gaps in the first place. Title I funding is a powerful practice that can be effective at closing the income achievement gaps.
References


Appendices

Appendix A: Title I School Principal Interview Questions

Title I Funding School Interview

This interview's purpose is to collect descriptive data regarding the resources afforded by Title I funding. This will also be used to gauge the efficacy of Title I funding for closing the income achievement gap. Below are some operational definitions to be used for answering the interview questions.

Income Achievement Gap- the gap in proficiency between economically and non-economically disadvantaged students.

Resources- Tangible products purchased in the form of curriculum, technology, supplies, etc.

Programs- This can range from professional development to parental involvement.

Infrastructure- organization of the school and variables outside of the normal school day.

Email Address:

1. How many staff members do you fully fund with Title 1 funds?
2. How many staff members do you partially fund with Title 1 funds?
3. How are full time staff members used to close the income achievement gap?
4. How are part time staff members used to close the income achievement gap?
5. What resources do you fund with Title I funds?
6. How are these resources used to close the income achievement gap?
7. What programs do you fund with Title I funds?
8. How are these programs used to close the income achievement gap?
9. Do you spend any Title I funds on infrastructure including before and after school programs, health programs, food programs, pre-school, extended school day, or attendance programs? If so, for each item, please describe how it helps close the income achievement gap.

10. What are other best practices that your school employs to help close the income achievement gap?

11. How valuable is Title I funding to the mission of closing the income achievement gap and what would the gap look like without it?
Appendix B: Non-Title I School Principal Interview

School Interview for Non-Title 1 School

This interview's purpose is to collect descriptive data regarding the resources afforded by Title I funding. This will also be used to gauge the efficacy of Title I funding for closing the income achievement gap. Below are some operational definitions to be used for answering the interview questions.

Income Achievement Gap- the gap in proficiency between economically and non-economically disadvantaged students.

Resources- Tangible products purchased in the form of curriculum, technology, supplies, etc.

Programs- This can range from professional development to parental involvement.

Infrastructure- organization of the school and variables outside of the normal school day.

Email:

1. How many staff members would you fully fund with Title 1 funds?
2. How many staff members would you partially fund with Title 1 funds?
3. How would these full time staff members be used to close the income achievement gap?
4. How would these part time staff members be used to close the income achievement gap?
5. What resources would you fund with Title I funds?
6. How would these resources be used to close the income achievement gap?
7. What programs would you fund with Title I funds?
8. How would these programs be used to close the income achievement gap?
9. Would you spend any Title I funds on infrastructure including before and after school programs, health programs, food programs, pre-school, extended school day, or
attendance programs? If so, for each item, please describe how it would help close the
income achievement gap.

10. What are other best practices that your school employs to help close the income
achievement gap?

11. How valuable is Title I funding to the mission of closing the income achievement gap
and what would the gap look like without it?