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Analysis of a Retention Program Implementing an Increased Time-On-Task Teaching Strategy for Sixth and Seventh Grade Students Within a Small City School District in Orange County, New York

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Analysis of a Retention Program Implementing an Increased Time-On-Task Teaching Strategy for Sixth and Seventh Grade Students Within a Small City School District in Orange County, New York

Abstract

The purpose of this quantitative study was to explore the efficacy of an alternative grade-retention program to increase student achievement with regard to New York State English Language Arts (NYS ELA) and Developmental Reading Program (DRP) student achievement. Within a quasi-experimental, pre-test, post-test design, archival data was analyzed to determine results utilizing ANOVA analysis. Results indicated that sixth grade students had a significantly larger increase in NYS ELA scores from pre-test to post-test as compared to seventh graders. Male students had statistically similar increases in NYS ELA scores from pre-test to post-test as compared to female students. Students of all three ethnicities, African American, Hispanic, and White, had statistically similar increases in NYS ELA scores from pre-test to post-test. The sixth grade students had statistically similar increases in DRP scores from pre-test to post-test as compared to seventh graders. Male students had statistically similar increases in DRP scores from pre-test to post-test as compared to female students. There were significant differences in students' DRP scores from pre-test to post-test across the three ethnicities, that is, Hispanic students had the largest increase in DRP scores from pre-test to post-test, African American students had the second largest increase, and White students' DRP scores increased the least.

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Analysis of a Retention Program Implementing an Increased Time-On-Task
Teaching Strategy for Sixth and Seventh Grade Students Within a
Small City School District in Orange County, New York

By

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Submitted in partial fulfillment
of the requirements for the degree
Ed.D. in Executive Leadership

Supervised by

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Biographical Sketch

Andrea L. Caputo is currently the Principal of a pre-kindergarten through eighth grade school in lower Westchester County, New York. Ms. Caputo attended Northeastern University from 1988-1991, Lehman College of the City University of New York from 1992-1994, and graduated with a Bachelor of Arts degree in Chemistry in 1994. She attended Sarah Lawrence College from 2001-2003 and graduated with a Master of Science in Education degree in 2003 from the Art of Teaching program, which focused on early childhood development. She came to St. John Fisher College in the summer of 2013 and began doctoral studies in the Ed.D. Program in Executive Leadership. Ms. Caputo pursued her research examining an alternative grade retention program implementing an increased time-on-task teaching strategy under the direction of Dr. Richard Maurer and Dr. Jennifer Schulman and received the Ed.D. degree in 2015.

Abstract

The purpose of this quantitative study was to explore the efficacy of an alternative grade-retention program to increase student achievement with regard to New York State English Language Arts (NYS ELA) and Developmental Reading Program (DRP) student achievement. Within a quasi-experimental, pre-test, post-test design, archival data was analyzed to determine results utilizing ANOVA analysis. Results indicated that sixth grade students had a significantly larger increase in NYS ELA scores from pre-test to post-test as compared to seventh graders. Male students had statistically similar increases in NYS ELA scores from pre-test to post-test as compared to female students. Students of all three ethnicities, African American, Hispanic, and White, had statistically similar increases in NYS ELA scores from pre-test to post-test. The sixth grade students had statistically similar increases in DRP scores from pre-test to post-test as compared to seventh graders. Male students had statistically similar increases in DRP scores from pre-test to post-test as compared to female students. There were significant differences in students' DRP scores from pre-test to post-test across the three ethnicities, that is, Hispanic students had the largest increase in DRP scores from pre-test to post-test, African America students had the second largest increase, and White students' DRP scores increased the least.

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Chapter 1: Introduction

Introduction

Grade retention is defined in kindergarten through 12th grade (K-12) learning environments as the practice of retaining a student in the same grade level for at least one additional year. Grade retention was created in order to be a K-12 educational tool used to reduce skill variance and better meet student's needs (Owings & Magliaro, 1998; Reynolds, 1992). The reality of this practice has demonstrated that it has not met this goal and, instead, has harmful long-term effects on students (Jimerson, Anderson, & Whipple, 2002; Jimerson, Pletcher, Graydon, Schnurr, Nickerson, & Kundert, 2006; Powell, 2010; Timo, Dreschel, & Clause, 2010;).

In fact, since the 1930s, researchers conclude that grade retention fails to produce long-term benefits for students either in academic learning or social behavioral adjustments (Holmes & Matthews, 1984; Jimerson & Schuder, 1996, Jimerson, Carlson, Rotert, Egeland, & Sroufe, 1997; Kline, 1933; Leckrone & Griffith, 2006; Miesels, 1993; Miesels & Liaw, 1993). In addition, there is an abundance of evidence concluding that traditional grade retention is an ineffective and potentially harmful practice (Ayer, 1933; Byrd & Weitzman, 1994; Cairns, Cairns, & Neckerman, 1989; Dauber, 1993; Dawson, 1991; Foster, 1993; Holmes, 1989; Holmes & Matthews, 1984; Holmes & Saturday, 2000; Jimerson et al., 2002; Kline, 1933; Leckrone & Griffith, 2006; Miesels, 1993; Owings & Magliaro, 1998; Silberglitt, Jimerson, & Burns, 2006; Tingle, Schoenberger, & Algozzone, 2012).

Although researchers have shown for decades that grade retention is ineffective, the nation continues to use this practice (Abidin, Golladay, & Howerton, 1971; Jimerson & Renshaw, 2012). In 1983, alarmed by the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983), the nation had low confidence in our public education system and was in search of more stringent promotion and retention policies. More recently, the introduction of the Common Core Learning Standards, which seek to promote college and career readiness, leave researchers searching for more effective ways to improve student achievement and grade-level mastery, yet again (Common Core Learning Standards: Then and Now, 2010; Powell, 2010).

Due to funding cuts and the cessation of summer school programs, which previously enabled students to gain the minimum skills required to advance to the next grade level, the small city school district and focus of this study, was faced with a dilemma: force children to experience the same program for the third consecutive year or socially promote students, or create an alternative grade-retention program. Social promotion is the practice by which a child is promoted to the next grade level, without having mastered grade level skills, in an attempt to have them remain with age-appropriate peer groups (Rose, Medway, & Cantrell, 1983).

Faced with this grade retention versus social promotion dilemma, the district decided social promotion was not an option and took the charge to search for effective methods to improve student achievement and achieve grade-level skill mastery (Anagnostopoulos, 2006; Frey, 2005). It was the districts' position that a solution might be found in the research, which reports that students may achieve gains by increasing their activities' time-on-task (Carroll, 1977, 1989; Carroll, Spearritt, & Harvard

University, 1967; Karweit, 1984; Karweit & Wasik, 1992). Prater (1992) defined time-on-task as the amount of time students dedicate to a specific academic task. Research indicates that allowing a student more time to practice and master a particular skill may lead to academic gains (Carroll, 1967, Gill & Remedios, 2013; Karweit, 1984).

It is this reasoning that led the district to create an alternative grade-retention program. Within the alternative program, students experienced three 46-minute periods of English Language Arts (ELA) instruction per day, rather than only one 46-minute period of ELA instruction within the traditional retention program. This study attempted to evaluate this alternative grade-retention program in an effort to determine if it was helpful in increasing students' New York State English Language Arts and Developmental Reading Program achievement.

Statement of the Problem

There is no research examining the efficacy of an alternative grade-retention program such as designed by this small city school district. Evidence is readily available advising that traditional grade retention is an ineffective and potentially harmful practice (Kline, 1933; Leckrone & Griffith, 2006; Miesels, 1993; Owings & Magliaro; 1998; Silberglitt et al., 2006; Stearns, Moller, Potochnick, & Blau, 2007; Stipek & Lombardo, 2014). Yet, socially promoting students who have not gained the necessary skills has proven to leave them underprepared for college and career placement (Greene & Winters, 2006; Jimerson & Renshaw, 2012). In fact, social promotion has been so frowned upon that, as recently as 2004, Ron Paige, United States Education Secretary, lauded the Mayor of New York City, Michael Bloomberg, for his decision to end social promotion (U.S. Department of Education, 2004). Therefore, this study examined the effect of an

alternative retention program utilizing an increased time-on-task teaching strategy on students' New York State ELA and Developmental Reading Program assessments.

Demographic data has shown that retained students tend to come from lower socio-economic (SES) environments than those who have been promoted to the next grade level (George, 1993; Thomas et al., 1992). In fact, Meisels (1993) found that approximately 40% of retained students come from the lowest SES quartile. On the contrary, only 8.5% come from the highest SES quartile and two thirds of all retentions occur between kindergarten and third grade. Other studies in the mid-1990s reported that retained students tended to be male, African American, and had parents who were less educated than those of promoted students (Byrd & Weitzman, 1994; Dauber, 1993; Foster, 1993; Miesels, 1993).

Frequently quoted findings associate retention with dropping out of high school (Eide & Goldhaber, 2005; Frey, 2005; Manacorda, 2010). Indeed, researchers have concluded that grade retention and dropping out of school are correlated (Lamote, Pinxten, Van Den Noortgate, & Van Damme, 2014; Rumberger, 1987; Rush & Vitale, 1994; Stearns et al., 2007). Postsecondary outcomes are also cause for concern. An older study of adult retainees showed they were more likely to be incarcerated, abuse drugs and alcohol, and receive welfare than students who were not retained (Royce, Darlington, & Murray, 1983). Jimerson et al. (2002) suggested that when students are retained “numerous factors conspire towards continuation” (p. 248) and a negative trajectory of outcomes is triggered.

Theoretical Rationale

Researchers have provided evidence to advise educators of the negative long-term effects of grade retention since the beginning of the 20th century (Baert & Cockx, 2013; Bowman, 2005; Tianna, 2008; Manacorda, 2010; Herbers, Reynolds, & Chen, 2013). Perhaps the underpinnings of this failure can be traced to the grand theories of social development as they pertain to students in an educational setting. This study analyzed convergence to Vygotsky's (1962) sociocultural theory. In addition, this rationale also explored the relationship to Tajfel and Turner's social identity theory (1986); Hunt's (1975), and Mitchell's (1969) person-environment fit theory; and Eccles et al. (1993) stage-environment fit theory.

Sociocultural theory, stemming from the seminal works of Lev Vygotsky (1962), relates to middle school learning environments with regard to the focus on individual development and social interactions. The education system in the United States, and especially middle school learning environments, are largely based on social exchange (Gredler, 2012) and Vygotsky's zone of proximal development (Scrimsher & Tudge, 2003; Stetsneko, 2010; Yvon, Chaiguerova, & Newnham, 2013).

Social identity theory plays a role in personal identity, society at large, and especially middle school learning environments (Witmet, Hoffman, & Nottis, 2004). Membership in a particular group is thought to shape our reactions, interactions, positions, and views. For example, students often strive for professions, behave, dress, speak, and engage in the culture according to the social norms and mores of their environment and/or peer groups (Steele, 2006).

Social identity theory was also explored in relation to Steele and Aronson's concept of *stereotype threat* (Steele & Aronson, 1995). Stereotype threat is the anxiety one might feel in a situation where a person may confirm a negative stereotype about his or her social group. Stereotype threat has been shown to reduce the performance of individuals who belong to negatively stereotyped groups (Steele & Aronson). According to Steele and Aronson (1995), if negative stereotypes exist regarding a specific ethnic group, group members are likely to become anxious about their performance, which may hinder their ability to perform at their maximum level and may affect academic performance. Therefore, the confluence of social identity theory with regard to a student's self-identification (Tajfel & Turner, 1986) and Steele and Aronson's (1995) stereotype threat may shape a student's intellectual identity and academic performance (Steele, 2006).

The study was also designed to examine the convergence of Hunt (1975) and Mitchell's (1969) person-environment fit theory and the stage-environment fit theory of Eccles et al. (1993) as they relate to the middle school learning environment. In addition, person-environment fit theory (Hunt, 1975; Mitchell, 1969) asserts that motivational and behavioral declines could be the result of the failure of schools to provide appropriate educational environments for adolescents.

Statement of Purpose

Grade retention was intended to be an educational tool used to reduce skill variance and better meet students' needs by offering them more time to acquire necessary skills (Frey, 2005). Yet, research on grade retention evidences that grade retention has not reached its goal and can have harmful long-term effects on students (Im, Hughes,

Kwok, Puckett, & Cerda, 2013; Pagani et al., 2008). However, the alternative of social promotion has also traditionally been proven to be unsuccessful as well (Anagnostopoulos, 2006; Frederick & Hauser, 2008; Jimerson et al., 2006). Therefore, educators are faced with the challenge of exploring options geared toward improving student achievement (VanDeWeghe, 2006). The alternative grade-retention program implementing an increased time-on-task teaching strategy was created to address this issue. This study evaluated the alternative grade-retention program to determine if it was effective in increasing student scores with regard to English Language Arts. The study was also designed to further the body of research with regard to providing educators with recommendations for increasing student achievement.

Research Questions

The following six research questions were developed to address the purpose of this study:

1. Do sixth and seventh grade students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?
2. Do male and female students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?
3. Do African America, Hispanic, and White students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?

4. Do sixth and seventh grade students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?
5. Do male and female students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?
6. Do African America, Hispanic, and White students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?

Significance of the Study

Currently there is a national focus on high-stakes testing, teacher effectiveness, and student achievement. There is also a focus on decreasing high school dropout rates. Furthermore, preparing students for college and career readiness is a central focus of the Common Core Learning Standards (King & Jones, 2012). Research findings associate grade retention with dropping out of high school (Barro & Kolstad, 1987; Blair, 2001; Frey, 2005; Manacorda, 2010; Poland, 2009). Indeed, researchers have concluded retention and dropping out of school are correlated (Grison & Shepard, 1989; Hagborg, Marsella, Palladino, & Shepardson, 1991; Roderick, 1995; Sterns et al., 2007; Tingle et al., 2012).

The significance of this study was to extend the current literature by examining whether increasing time-on-task in ELA instruction positively affects student achievement. Currently, researches have yielded no studies where an increased time-on-

task teaching strategy is utilized within an alternative grade-retention program. This study contributes to the body of literature in this regard.

Empirical findings were explored, analyzed, and dissected to determine the following pivotal aspects of this issue: (a) the effects of increasing the amount of ELA instruction from one 46-minute period daily to three 46-minute periods, daily, on student achievement with regard to ELA, (b) the differences of ELA performance with regard to pre- and post-test New York State English Language Arts achievement for sixth and seventh grade retained students, and (c) the differences of ELA performance with regard to pre- and post-test Developmental Learning Program achievement for sixth and seventh grade retained students.

Chapter Summary

Although grade retention was originally conceived as a positive way to allow students more time to master necessary skills, the evidence has shown that it can have long-term, detrimental effects (Alexander, Entwisle, & Dauber, 1994; Allen, Qi, Wilson, & Hughes; 2009; Bowman, 2005; Lenarduzzi, 1990; Herbers et al., 2009). Yet, after the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983) the nation began having decreased levels of confidence in the quality of our educational system. This resulted in more stringent promotion and retention policies, which caused educators to revert back to grade retention as a cure all for educational shortfalls, despite the lack of evidence to support this practice as a viable option to improve student achievement (Frederick & Hauser, 2008; Frey, 2005; Gastright, 1989; Roderick, 1994; Sakowicz, 1996).

The district at the center of this study dedicated time and resources to address this grade-retention, social promotion dilemma. Faced with the loss of summer school programs, the cessation of the use of social promotion as a viable option, and the need to adequately prepare students for college and career readiness, guided by research, the district created an alternative grade-retention program utilizing an increased time-on-task teaching strategy (Carroll, 1976, 1977, 1989; Dawson, 1998; Gates & Pritchard, 1942; Goodlad, 1954; Karweit, 1984, Prater, 1992; Rothman, 2012; Rust, 2012). New teachers were hired, schedules were changed, and students experienced three 46-minute periods of ELA instruction daily. Understanding the specifics of a successful grade-retention program can be an important first step in developing and implementing programs to improve student achievement.

The purpose of this study was to analyze the effect of the alternative grade-retention program utilizing an increased time-on-task teaching strategy on students' ELA achievement. The significance of the study is that it may offer solutions to the problem of identifying essential components of an effective program designed to increase student achievement with regard to English Language Arts instruction.

Chapter 2 provides the rationale for investigating the research questions, establishes the structure for reviewing the relevant literature, and reviews a broad base of literature including the history of grade retention and relevant topics, peer-reviewed articles, books, and pertinent research. Chapter 3 outlines the research context and specifies the research participants, data collection instruments including the NYS ELA and DRP results. Chapter 3 also outlines ANOVA data analysis. Chapter 4 presents and offers analysis of the quantitative, archival data collected from the study's participants.

Chapter 5 offers a discussion of the findings, implications of the findings, defines the study's limitations, relates findings to the theoretical framework, and concludes with recommendations for practice and future study.

Chapter 2: Review of Literature

Introduction and Purpose

This chapter describes the history of grade retention, social promotion, and the time-on-task teaching strategy. It also examines studies on grade retention, social promotion, and socio-emotional effects of grade retention. In addition, this chapter explores the standards movement and long-term effects and predictors of grade retention.

This chapter also fully explores the theoretical foundations and research that grounded the program under review. Specifically, sociocultural theory (Vygotsky, 1962), social identity theory (Tajfel & Turner 1982, 1986), person- environment fit theory (Hunt, 1975; Mitchell, 1969), and stage-environment fit theory (Eccles et al., 1993) are described to identify the relationship between the theories and their relationship to this study.

Review of the Literature

Grade retention has historically failed to produce long-term benefits for students either in academic learning or social behavioral adjustments (Alexander et al., 1994; Anderson, 1950; Butler, 1990; Byrnes, 1989; Cunnigham, Hall, & Defee, 1998; Cox, 2009; Gottfredson, Fink, & Graham, 1994; Goodlad, 1954). In addition, some researchers found that increasing time-on-task increased student achievement (Carroll, 1977; Gates & Pritchard, 1942; Gill & Remedios, 2013). Prater (1992) defined time-on-task as the amount of time students dedicate to a specific academic task. Furthermore, in an era of data-informed decision making and evidence-based interventions, research indicates that social promotion has been an ineffective strategy for improving educational

success (Jimerson et al., 2006; Jimerson & Renshaw, 2012; Frederick & Hauser, 2008). In contrast, research has long suggested that significantly increasing quality time in school for teaching and learning can increase student achievement (Carroll, 1977, Karweit, 1999; Greenwood, Hoton, & Utley, 2002).

Multiple studies suggest traditional grade retention is ineffective and potentially harmful (Cairns et al., 1989; Dauber, 1993; Dawson, 1991; Foster, 1993; Holmes, 1984; Holmes & Matthews, 1989; Gleason, Kwok, & Hughes, 2007; Goodlad, 1954; Kelly, 1999; Mantzicopoulos & Morrison, 1992; Tingle et al., 2012). More current research also confirmed this same phenomenon, (Sterns et al., 2007; Manacorda, 2010). Jimerson et al. (2002) concluded traditional grade retention is one of the single-most important factors in predicting high school dropout rates. Although there is no shortage of research enumerating the deleterious effects of grade retention, research is inconclusive regarding the positive aspects or benefits of grade retention (Anderson, 1950; Byrnes, 1989; Lamote et al., 2014; Walters & Borgers, 1995; Westbury, 1994).

Some researchers suggest the queries needed to examine the effects of grade retention on specific populations with specific academic competencies (Wu, West, & Hughes 2008). Their study set out to do just that. Wu et al. (2008) contended that broader data analysis would allow for in-depth determination of the efficacy of retention within specific disaggregated groups. This study attempted to provide educators with more information regarding the grade-retention, social promotion controversy. As cited in the previously, although there is an abundance of research to suggest grade retention is not effective, and that there need be alternatives, there is little research to support alternatives (Bonvin, Bless, & Schuepbach, 2008). This study attempted to determine an

effective, practical, and specific alternative grade-retention program. It also attempted to offer educators a model to improve student ELA achievement rather than continuing to simply retain students in the same grade level, indefinitely, or socially promote students unable to demonstrate proficiency with regard to required ELA skills.

History of grade retention. Historically, grade retention was used in British schools as early as the 16th century (Hess, 1978). Grade retention was first used for remediation in America in the mid-19th century (Holmes and Matthews, 1984). In 1647, schools were first legislated in Massachusetts to ensure that children learned to read the Bible (Monaghan & Barry, 1999). Since the settlements at the time were relatively small and located a far distance from one another, students of multiple ages were educated in one-room schoolhouses. Unlike the school houses of today, reading proficiency took a back seat to instilling morality and the democratic ideal into all learners (Owings & Magliaro, 1998). Therefore, students who were not proficient readers were merely absorbed into the community of learners. Most students who could read were taught to read and write at home, and literacy was not the primary function of schooling (Frey 2005; Pulliam & Van Patten, 1995).

In the 1800s as the nation's population rose, the religious focus of schools was replaced by the desire to produce literate citizens able to engage in the democratic process. Due to growing populations, schools now occupied multiple rooms and began to focus on primary and secondary classroom environments (Frey 2005; Pulliam & Van Patten, 1995). The Industrial Revolution, in conjunction with the influx of European immigrants and freed slaves, contributed to a rise in student enrolment, which fundamentally changed education and gave rise to grade retention. Compulsory

education, education that was required of every person, was founded to provide educated employees for positions in factories and mills (Frey, 2005; Mondale & Patton, 2001).

Schools now had enough students to specialize in both what was being taught and how it was being taught. Subjects, such as geography, history, and spelling, were added to the curriculum, and students were placed in graded classrooms based on chronological age. Compulsory education laws and a new era of pluralism brought disenfranchised groups, such as freed slaves, immigrants, and girls, into classrooms (Owings & Magliaro, 1998).

The dawn of both the physical and curricular organization of schools was also when the inception of some students being left behind was created (Puliam & Van Patten, 1995). It was about 1860, when grade retention became a common practice in U.S., elementary schools and promotion became dependent on mastery of a *quota of content* (Ayres, 1909; Owings & Magliaro, 1998).

In addition, within the latter half of the 19th century, new philosophies gave rise to the hierarchical ranking of students. Herbert Spencer's theory of social Darwinism furthered promoted the "survival of the fittest" as a sociocultural phenomenon and not merely as an evolutionary mechanism (Hoffstadter, 1955). Contemporaneously, the rising popularity of philosophers, such as William James and his influential work *Talks with Teachers*, brought psychology into the classroom and fueled the emerging field of teacher education (James, 1899). The convergence of this purported scientific logic with the pedagogy of teaching grounded in teacher stimulus and student response set the foundation for the widespread practice of grade retention. At its inception, the goal of grade retention was to improve school performance by allowing more time for a student to acquire a compulsory set of skills (Reynolds, 1992).

At the turn of the 20th century, the emergence of intelligence testing provided the mechanism for classification (Binet & Simon 1916), and retention rates were being reported by the New York City school system. Maxwell's (1904) Age-Grade Progress Study became the standard vehicle for school system reports on grade retention, promotion, and dropouts (Owings & Magliaro, 1998). At its inception, intelligence testing was first conceived as a means to identify children in need of specialized educational supports (Binet, 1969). However, intelligence testing quickly led to standardized measurement and the homogenous grouping of students based on assessments. This also became a device for irreversibly segregating low-performing students (Binet 1969; Frey 2005; Gates & Pritchard, 1942; Lau, 2003; McLskey, Lancaster, & Grizzle, 1995; Wheat, 1923). In New York City, "Binet classes" were created for the "educationally retarded" (Binet, 1969). In America, H. H. Goddard and Lewis Terman (1919) began segregating students and categorizing them into vocational tracks with limited educational prospects at schools for "Feeble-minded Boys and Girls." Goddard and Terman considered these practices as an "ideal" and the "highest form of democracy." Goodlad, as cited in Gould (1996), stated:

We must learn that there are great groups of men, laborers who are but little above child, who must be told what to do and shown how to do it; and who, if we could avoid disaster, must not be put into positions where they have to act upon their own initiative or their own judgment. (p. 191).

Terman (1919) held similarly strong opinions regarding the necessity of segregating low-achieving students and viewed this practice as a means to "preserve a democratic way of life." Terman believed without such "educational engineering," low

achievers would “drift easily into the ranks of the anti-social and join the army of Bolshevik discontents” (Terman, 1919, p. 285 as cited in Frey, 2005, p. 333).

In the early part of the 20th century, by some estimates, nearly 50% of students were retained, and 20% dropped out by eighth grade (Holmes & Matthews, 1984). Retention had clearly been the intervention of choice for low achievers (Binet & Simon, 1916; Johnson, Merrell, & Stover, 1990). Educators were alarmed by the high retention rates and The Russell Sage Foundation commissioned a study on “backward children” (Binet & Simon, 1916). This term was used to describe students past the age of their grade level. This commission resulted in the work, *Laggards in Our Schools*, (Ayes, 1909), which made a case for “differentiating expectations” in order to foster students’ success.

For the next 20 years, homogenous grouping was considered the gold standard and allowed for the presentation of different material for high- and low-achieving students (Frey, 2005). However, not all educators saw this as either an improvement or a desired system of education (Dewey, 1998). Although there has been widespread disapproval of homogenous grouping practices, they did result in the decline of grade retention rates from the 1930s through the 1960s (Cunningham, Hall, & Defee, 1998; Johnson et al., 1990).

However, by the 1930s researchers started reporting the negative effects of grade retention on student achievement (Ayer, 1933; Kline, 1933). In 1954, Goddard summarized grade-retention research from 1924 to 1948. This synthesis reported that grade retention did not decrease the variation in student achievement levels, and it had no positive effect on educational gain (Owings & Magliaro, 1998). By mid-century,

researchers started to investigate the relationship between grade retention and dropout rates. In 1949, Berlman's (1949) study reported students who had been retained might be more likely to drop out of school than those who were not (Owings & Magliaro, 1998). When this article appeared, the current literature emphasized the need to keep students in school (Holbek, 1950; Moffit, 1945; Nancarrow, 1951; Sandin, 1944). In the latter half of the 20th century, research on the efficacy and effects of grade retention had spurred research and review of policy, practice, and associated attitudes connected to its continued use (Frey, 2005). For almost 50 years, research has shown that grade retention has provided little or no advantage to students (Alexander et al., 1994; Abidin et al., 1971; Gastright, 1989; Owings & Magliaro, 1998).

In the 1960s and 1970s, the pendulum moved toward the social promotion of students. Yet, after the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983), the nation had low confidence in our public education system. More stringent promotion and retention policies were instituted, and grade retention was once again the intervention of choice, in spite of the lack of research evidence supporting this practice (Byrnes & Yammamoto, 1985; Owings & Magliaro, 1998; Roderick, 1995). For the public at large, it was, and still is, counterintuitive to think that grade retention is not useful in helping students achieve skills mastery (Natale, 1991; Owings & Magliaro, 1998). Out of 66 articles published on grade retention from 1990 to 1997, only one (Lenarduzzi, 1990) supported the use of grade retention (Owings & Magliaro, 1998). In fact, out of thousands of articles available, only one suggested that grade retention in third grade may help increase student achievement (Lorence, 2014).

From 1980 to 1992, one study reported the national percentage of retained students rose from approximately 20% to nearly 32% (Roderick, 1995). Within this time, schools facing political and social pressure to achieve on standardized tests (Owings & Magliaro, 1998) looked to grade retention for a solution, even though contemporary research and meta-analyses continued to report negative effects (Cairns et al., 1989; Dawson, 1998; Holmes, 1984; Holmes & Matthews, 1989). Grisson and Shepard (1989) determined that grade retention significantly increased the probability of dropping out of school and controlled for prior achievement, sex, and race.

Grade retention received even more attention after President Clinton's 1998 State of the Union Address, which called for an increase in the retention of low-performing students on standardized tests and the end of social promotion (Clinton, 1998). In addition, publications, such as *USA Today* (Ritter, 1997) and *Education Week* (Reynolds, Temple & McCoy, 1997), fueled public interest and belief that students should not move from grade to grade *until they are ready*. This overly simplistic view of grade retention as a cure-all ignored its negative impact on children and its detrimental long-term effects (Owings & Magliaro, 1998).

Longitudinal retention studies. The Minnesota Mother-Child Interaction Project (1975) focused on 190 children who were identified as at risk because of family poverty. One of the central concerns of this study was to determine the long-term effects of student retention in kindergarten through third grade. The retention studies followed students who attended 120 different elementary schools (due to family mobility). The results were published when the cohort was 10, 12, 14, 16, and 21 years of age (Frey, 2005). Students were categorized into one of three comparison groups: never retained,

retained once during primary grades, or socially promoted. Yearly achievement assessment batteries were conducted in addition to measures of well-being, such as interviews with teachers, mothers, and the children.

No significant differences between retained children and their socially promoted peers on achievement and intelligence measures were reported. However, differences were found with regard to behavioral, peer relation, and emotional measures. Researchers speculated that “perhaps retained children are perceived as poor students in large part because of their behavior in the classroom, since their school achievement does not distinguish them, but their behavior is distinctive” (Jimerson et al., 1997, p. 20).

The children were followed throughout their high school years. Initially, retained students seemed to benefit in mathematics achievement, but this effect disappeared by middle school (Jimerson & Schuder, 1996). No difference was found for reading comprehension or overall achievement. However with regard to behavior and emotional health, retainees did continue to compare negatively to the rest of the cohort (Jimerson et al., 1997). Significantly, 52% of the socially promoted students graduated from high school, whereas only 24% of the retained students did the same (Jimerson & Schuder, 1996).

The Chicago Longitudinal Study (1986) followed 1,164 low-income public school children from their entrance in kindergarten through age 14. Of these children, all had attended a preschool program, 296 had been retained once, and 19 had multiple retentions. The researchers focused on academic outcomes, especially reading and mathematics, as measured by the Iowa Test of Basic Skills, a norm-referenced test with internal consistency coefficients of .92 and .95, respectively, in addition to analyzing data

for predictors of grade retention and retainees' demographics (McCoy & Reynolds, 1999). Regression analysis and matched comparison samples were used to control for differences between the groups.

The data were analyzed using a hierarchical multiple regression analysis for retention, demographic factors, early adjustment, and school-based factors like parent involvement. Early grade retention (Grades 1-3) had a greater effect on reading achievement than later grade retention (Grades 4-7). Similar results were obtained for mathematics achievement (Frey, 2005).

Rising retention rates. In 1990, the Center for Policy Research in Education reported 6% of schoolchildren were retained each year. In 1992, that rate and the annual rate of retention in the United States had nearly doubled to 11.1% (McMillen & Kaufman, 1993); the retention rate continued to rise to 13.3% by 1995 (Bureau of the Census, 1995). The National Association of School Psychologists reported that grade retention increased by 40% from the 1980s to the late 1990s (Dawson, 1998). Interestingly, after the inception of the No Child Left Behind Act of 2001, more recent grade-retention data is not readily available. This isn't surprising, considering the title "No Child Left Behind" asserts a political agenda, and it may have contributed to the decrease in funding for the study of grade retention (Linn, Baker, & Betebenner, 2002; Gleason et al., 2007; Standerfer, 2006).

Historically, the majority of retention events occur in kindergarten through third grade (Meisels & Liaw, 1993). However standardized testing and state policies, which mandate proficiency on state exams in order to ensure promotion to the next grade level, appear to be shifting this pattern. A survey of 16 southern states revealed that the most

common grade for retention was the ninth grade (Southern Regional Education Board, 2001). This has been attributed to high-stakes testing in tenth grade in these same states (Haney, 2001).

Ethnicity and grade retention. Ethnicity has been identified as a predictor of retention (Baert & Cockx, 2013; Lorence & Dworkin, 2006; Victor & Jan, 2006). The National Education Longitudinal Study of 1988 (NELS '88) followed 24,599 eighth grade students from 1,000 schools. Meisels and Liaw (1993) used the data from NELS '88 to analyze the characteristics of the students retained. The researchers found the overall retention rate was 19.3% for all students, 29.9% for African Americans and 25.2% for Hispanics as compared to only 17.2% for White Americans (Meisels & Liaw, 1993). The variance increased when gender and ethnicity were analyzed together. For example, retention rates in one study ranged from a low of 24% for White girls to a high of 47% for Hispanic/Latino boys at the end of eighth grade (Alexander et al., 1994). Using census data, Roderick (1995) reported similar findings at the end of ninth grade, ranging from a low of 15.8% for Hispanic girls to a high of 52% for African America boys.

Gender and grade retention. For the last three decades, researchers have identified gender as a factor in grade retention (Abidin et al., 1971; McCoy & Reynolds, 1999). In 2001, the Southern Regional Education Board reported boys were twice as likely to be retained. For example, in the NELS '88 study, 24% of boys were retained compared to only 15.3% of girls (Meisels & Liaw, 1993). Although it was not clear why boys were retained at higher rates, Gottfredson et al. (1994) agreed with Miesels and Liaw's (1993) earlier speculations that there may have been a mismatch between the

expectations of school behavior and the typical development of male children. In 2007, Morrison and No concluded that repeating a grade level was more detrimental to males than to females. Additionally, Martin (2009) concluded that females were less likely to be retained than males.

Socio-economic status and grade retention. Poverty has been identified as a predictor of retention (Blair, 2001; Eide & Goldhaber, 2005; Gastright, 1989; Sterns et al., 2007). According to some estimates, children from low-income environments were two and, in some cases, three times more likely to be retained (National Center for Educational Statistics, 2009). The NELS '88 study reported socio-economic status of the students was significantly related to retention: 33.9% of the students were in the lowest SES quartile, whereas only 8.6% came from the highest SES quartile (Meisels & Liaw, 1993). In a study of 33 districts from the Council of Great City Schools (Gastright, 1989), and in an evaluation of retention patterns in Miami-Dade County, Florida (Morris, 2001), the relationship between low-SES schools and high rates of retention was confirmed. Nevertheless, in a five-year analysis of retention rates in a mid-western school district with high-, middle-, and low-SES elementary schools, Gurewitz and Kramer (1995) found that middle SES schools had the highest retention rate, and individual differences in student performance could not account for the disparity. They also theorized that low-SES students in middle-SES schools may appear more conspicuous. Another study also reported the compounded risk for those students with multiple predictive factors, especially African America boys living in poverty (Dauber, Alexander, & Entwisle, 1993).

Parental factors and grade retention. Parental characteristics were found to be a factor influencing retention in several studies (Byrnes, 1989; Herbers et al., 2013, Holmes, 1989; Jimerson et al., 2006; Kalil & Ziol-Guest, 2008; Kamal & Bener, 2009; Miedel & Reynolds, 1998; Rodney et al., 1999). In the Minnesota Mother-Child Interaction Project (1975), parent IQ, as measured by the Wechsler Adult Intelligence Scale (Wechsler, 1997), found mothers of retainees scoring lower on measures of cognitive functioning than the mothers of the promoted group. The finding was considered statistically significant at the $p < .05$ level. Researchers also reported school-based parent involvement was “the best predictor of children’s promotion or retention status” (Jimerson et al., 1997, p. 21). The findings of the Chicago Longitudinal Study (Miedel & Reynolds, 1998) agreed with Jimerson et al. (2002) and found that many low-income parents were not aware of the type of literacy involvement that is expected of them, nor did they view early literacy training as their job. They did not believe that they had the knowledge or skills to assume this responsibility and, in fact, refrained from engaging in literacy instruction with their children out of concern that they “might teach it wrong” (p. 275).

Variables present before the start of school, known as exogenous factors, appear to contribute heavily on who is retained. In particular, boys, African America and Hispanic students, and students living in poverty (especially in urban environments) were most likely to be required to spend an extra year in school (Lapp, Fisher, Flood, & Moore al., 2002; Potter & Roksa, 2013).

Negative long-term effects of grade retention. By the 1930s, the negative effects of grade retention began to be reported by researchers (Ayer, 1933; Kline, 1933).

As of the 1990s, the popular misconception that grade retention was a viable solution for skills mastery had long been refuted (Jackson, 1975; Johnson, 1990; Mantzicopoloulos & Morrison, 1992; Thomas et al., 1992). Studies, such as Shepard and Smith (1987), showed no achievement gains for retained students compared to a matched control group. In fact, studies such as that conducted by Dennenbaum and Kulberg (1994) yielded results showing that retained students had significantly lower standardized test results than non-retained students. During the course of this research, only Lenarduzzi (1990) showed that early retention may have produced a short-lived increase in student achievement. Yet, that gain seemed to have disappeared within two to three years (Berlman, 1949; Butler, 1990; Karweit & Wasik, 1992; Snyder, 1992).

Holmes's (1989) meta-analysis reviewed 63 controlled studies and compared the progress of retention with lower-achieving promoted students. Out of the 63 studies, 54 reported negative achievement results for retained students. Holmes then went on to review only those studies where the greatest statistical control could be achieved and, once again, found that negative achievement effects were demonstrated. Goodlad's analysis (1954) was comparable to Holmes' findings, and there have been subsequent studies since then (Allen et al., 2009; Jimerson et al., 2006; Maggio, White, Molstad, & Kher, 2005; Tingle et al., 2012). In addition, other studies reported increased cumulative negative effects and the continued decline with regard to mastery of literacy skills (Reynolds, 1992; Silberglitt et al., 2006).

Sacowicz (1996) compared two groups of children in an urban elementary school in first grade. The first group consisted of 45 students who were promoted to second grade. The second group consisted of 15 students who were retained in the first grade.

The California Achievement Test measured reading ability of both groups at the end of second grade using a mixed-methods methodology. Findings indicated no significant difference between the two groups of students. Qualitative measurement was achieved by analysis of survey responses from 48 elementary classroom teachers. Another survey was administered concerning the teachers' attitudes toward retention. That survey yielded results from 37 respondents. Results found teachers preferred retention even though current research indicated retention was not effective in improving student performance.

Jimerson et al. (2002) conducted a meta-analysis of dropout research. They examined 17 studies and concluded grade retention was one of the most powerful predictors of high school dropout rates. The review addressed the debate among the educational professionals regarding the effectiveness of grade retention and the detrimental long-term effects. Jimerson et al. (2002) encouraged educational professionals, teachers, researchers, parents, and policymakers to consider the long-term implications of grade retention before using this strategy. The results of the study indicated grade retention in the elementary grades was a powerful predictor of withdrawal later in the school career; that the negative effects of retention are greater for students who have been retained multiple times; and that early grade retention does not produce academic gains (Jimerson et al., 2002).

From a multi-ethnic sample of 784 students below median literacy rates at the age of school entrance, Wu et al. (2008) examined the short-term and long-term effects of grade retention on student achievement trajectories over four years. The authors matched one retained with one promoted student on the basis of 72 background variables.

Quantitative data were gathered and growth of retained students to growth of promoted students was compared using Rasch-modeled *W* scores and grade standard scores.

Results indicated retained students experienced a slower increase in short-term mathematics and reading achievement based on the *W* scores. When analyzing grade standard scores, retained students experienced a faster increase in the short term but a faster decrease in long-term mathematics and reading achievement than promoted students. Once again, these findings indicated that grade retention did not provide students with long-term academic benefits.

Negative social implications. Researchers reported that grade retention produced negative social implications for students (Owings & Magliaro, 1998; Penna & Tallericco, 2005; Peterson & Hughes, 2011; Range, Holt, Pijanowski, & Young, 2012; Wilison & Hughes, 2009; Witmer, Hoffman, & Nottis, 2004). In 1987, Shepard and Smith found that retained kindergarten students displayed slightly more negative attitudes toward school than did the matched control group. In 1993, Miesels reported retained students may have more behavioral problems than those who were not retained.

In the Southwest United States, Byrnes (1989) examined attitudes and beliefs of retained first, third, and sixth-grade boys and girls in an ethnically diverse community. The study found that these children believed that retention was a punishment and felt stigmatized; 43% of the girls and 19% of the boys would not admit that they had been retained, even when directly asked by researchers. Meisels and Liaw's (1993) review of NELS '88 data also confirmed the unique vulnerability of girls to the negative emotional effects of retention and attributed this sensitivity to the possible need for affiliation and the establishment of identity.

Nonacademic effects. Grade retention has been shown to be damaging to the social and emotional development of children, especially as it relates to personal adjustment (Martin, 2011; Ritzema & Shaw, 2012). For instance, as measured by a survey of 12 items, the positive perception of school self-concept was not evident by the time students within the Chicago Study (1992) reached age 14 (McCoy & Reynolds, 1999).

According to the Minnesota Project (1975), retained children demonstrated significantly more behavior problems and lower peer acceptance than non-retainees. Another study examined the opinions held by students, teachers, and peers. Retained students, in a study of third through sixth graders in a New York urban center scored lower than their peers on cognitive competence, which was defined as “beliefs that they can control academic outcomes, . . . that they have what it takes to do well in school, . . . and what it takes to execute those strategies” (Pierson & Connell, 1992, p. 301). Those beliefs may have persisted in high school as well. An inquiry of secondary students in a rural New York community found that those who had been retained showed lower educational expectations for themselves, more disruptive behavior, less impulse control, and an external locus of control when compared to a group of matched-ability peers who had not been retained (Hagborg et al., 1991).

Alternatives to grade retention. Grade retention has been proven to have negative effects on students, and researchers advised seeking out alternatives (Owings & Magliaro, 1998). Alternatives included: summer school, intensive remediation programs before and after school hours, changing teachers and administrative perceptions, and increasing teacher expectations (Frey, 2005). Considering a body of research guides, the

practice of educators should consider the research reporting the negative effects of grade retention and seek other ways to provide opportunities for non-learners (Darling-Hammond & Goodwin, 1993; Parkay, Antcil, & Hass, 2010).

Given the elimination of social promotion policies in many states and the negative outcomes of retention, parents of young children are increasingly opting for delayed entry into kindergarten (Anagnostopoulos, 2006). This practice is termed academic redshirting (Frey, 2005), and it is generally associated with parents who do not depend on public education for childcare, such as economically affluent families. Data has shown students more likely to be academically redshirted are boys and students with birthdays that fall late in the year (Frey, 2005).

Kindergarten screening tests may be a factor in the decision to delay a child's enrollment. These screening instruments have been criticized by some researchers as lacking in predictive validity and do not favor students from low-income families (Frey, 2005). The practice of voluntary retention has resulted in a demographic aging of the kindergarten classroom (Frey, 2005).

In some communities, nearly 50% of students entering kindergarten may be six years old on the first day of school (Vuko, 2002). Given the rapid increase in mandatory retention policies and the rising incidence of academic redshirting, there seems to be a need for new studies that focus on the effectiveness of these practices (Frey, 2005).

Educators are asking the following questions about effective interventions:

Which students are best served by retention? Are there students for whom retention should not be considered? What are the long-term effects of retention and social promotion over the course of a child's academic career? Is social

promotion effective for students? Under what circumstances might it be effective? Is delayed kindergarten enrollment changing the composition of the kindergarten classroom? Is this resulting in a change in expectations? Do children benefit from voluntary retention to delay kindergarten enrollment? How do children with disabilities respond to retention, social promotion, and delayed enrollment? Which early and ongoing interventions must accompany any of these practices? (Frey, 2005, p. 344)

Increased learning time and student performance. Within a special report by the Center on Education Policy (CEP), McMurrer (2012) highlighted increased learning time as a requirement for school districts accessing school improvement grant (SIG) funds appropriated by the American Reinvestment and Recovery Act (ARRA) within the 2010-2011 school year and up until the winter of the 2011-2012 school year. The qualitative study was based on a CEP survey of state education officials in 46 responding states, including the District of Columbia. McMurrer found officials in a majority of the states surveyed said the strategy of increasing learning time is, to a great extent or to some extent, a key component in increasing student achievement.

Time-on-task, also known as engaged time, is the amount of time that is actually spent learning (Slavin, 2003). It is important to note that engaged time encompasses a student's emotional commitment to academics, and it cannot be solely envisioned as a behavioral concept or classroom management tool (VanDeWeghe, 2006). In other words, when students are engaged in a task, the room is orderly. However, the goal is to promote the learning, not merely to keep the room quiet (VanDeWeghe, 2006). According to VanDeWeghe (2006), students demonstrate their commitment and personal

investment in learning when they actively engage in academic tasks such as reading, both aloud and silently; engage in writing; attend to given academic tasks; read and ask questions. Complementary to these tasks, students should also be attentive, interested, and invested in their learning (Gill & Remedios, 2013; Greenwood, Horton, & Utley, 2002; Marks, 2000; VanDeWeghe, 2006).

Some research suggests engaged time is the most important influence on academic achievement (Gill & Remedios, 2013; Greenwood et al., 2002; Marks, 2000; Slavin, 2003). According to Greenwood et al. (2002), academic engaged time leveled off through fifth grade and increased through second grade. Interestingly, off-task behavior was constant throughout second grade, increased briefly through fourth grade, and then experienced a decline through the fifth grade as engaged time leveled off (Greenwood et al., 2002).

As suggested by Greenwood et al. (2002), examples of off-task behavior included: walking around the class, disturbing peers, talking out of turn, daydreaming, and the like. Students who frequently engaged in off-task behavior “will be unable to respond to academic opportunities or manage subject matter tasks rapidly and accurately” (Greenwood et al., 2002, p. 328). This pattern can lead to *dysfunctional school behavior*.

On the contrary, Hossler, Stage, and Gallagher (1988) chronicled the relationship of increased instructional time to student achievement. Methods used to increase instructional time included lengthening the school year and the school day, reallocating time within the day to allow more time for instruction, improving teachers’ management skills, and increasing homework assignments. Hossler et al. (1998) concluded that increased instructional time had a modest beneficial effect on learning.

Research also suggests it is not only the amount of time dedicated to a task that is important, but the quality of instruction within the allotted timeframe (Jacobs, 1989; Romero & Barbera, 2011). Jacobs (1997, 2006, 2009) highlighted the importance of creating curriculum maps in order for instructors to align curriculum with current standards and eliminate gaps and repetition of curricula. Jacobson (1989) also emphasized the need to implement inter-disciplinary learning strategies in order to contextualize learning and offer breadth and depth in academic exploration.

Within inter-disciplinary learning methods and modalities, curricula take a circular, rather than linear, process (Jacobs, 1989). Students are engaged in learning units rather than individual lessons bound by the confines of one subject (Dewey, 1938; Jacobs & Cloud, 2010; Wiggins & McTighe, 2005). Units are focused around a central theme and ELA, math, social studies, science, music, art, and dramatic expressions of the topic are explored. The students are also engaged in active learning models where they learn by physically and intellectually exploring a topic rather than learning by solely reading about a topic, skill, or subject (Dewey, 1938; Macdonald, Abbott, Hunter, Hay, & McCuaig, 2014).

Social promotion and the standards movement. In 1983, the National Commission on Excellence in Education released *A Nation at Risk*, which reported on the quality of teaching and learning in America's schools. The report warned of the "rising tide of mediocrity" (p. 2), and it heightened public awareness by imploring educators and legislators with the task of improving America's schools and student outcomes via standards-based teaching methods.

In 2001, The No Child Left Behind Act, George W. Bush's administration's standards-based education reform, substantially increased testing and accountability requirements for states, schools, and districts. Adequate yearly progress (AYP) standards were set for schools where subgroups of students, defined by socio-economic background, race ethnicity, English-language proficiency, and disability, were and continue to be, thoroughly monitored (Linn et al., 2002; Standerfer, 2006). At that time, 49 of the nation's 50 states adopted academic content and performance standards in an effort to articulate exactly what was expected of public school students (No Child Left Behind Primer, 2007).

The standards movement has continued into the current administration of President Barack Obama, with the adoption of the Common Core State Learning Standards in 2010 (Rothman, 2012). The initiative is sponsored by the National Governors Association and the Council of Chief State School Officers and seeks to establish consistent educational standards across the states as well as ensure that students graduating from high school are prepared to enter credit-bearing courses at two- or four-year college programs or enter the workforce. This is termed College and Career Readiness (Rothman, 2012). Currently, 44 of the 50 U.S. states and the District of Columbia are members of the Common Core State Standards Initiative. Texas, Virginia, Alaska, and Nebraska have chosen to opt out, and Minnesota adopted the English Language Arts standards but not the Mathematics standards (Rothman, 2012).

The algorithm of establishing standards in education is so deeply ingrained that, in recent years, standards have also emerged for teachers (National Board for Professional Teaching Standards), administrators (Principal Leadership Standards of

Excellence), paraprofessionals (Paraprofessional and School-Related Personnel Standards), and parent involvement (National Parent-Teacher Association) (Rust, 2012).

The practice of social promotion, defined by the National Commission on Excellence, as advancing a student to the next grade level when he or she has not mastered all of the content for the previous grade, has come under attack since the release of *A Nation at Risk* (1983). The public now scrutinizes the practice of social promotion and views it as one that dilutes the excellence of learning available in the public school system. Social promotion had been a popular practice from the 1960s through the 1970s (Kelly, 1999; Owings & Magliaro, 1998). Yet, after 1983, it was conceived as a by-product of the “soft-headed, open-education, child-centered curriculum” of the era (Shepard & Smith, 1989, p. 1). According to public opinion polls by the mid-1980s, the general public felt strongly (72%) that promotion to the next grade level should be contingent on mastery of grade-level requirements (Shepard & Smith, 1989).

States and districts quickly responded to public concern by instituting strict retention policies to make social promotion more unlikely (Owings & Magliaro, 1998). The widely publicized Promotional Gates Program was created in New York City in the 1980s as a mandatory end to social promotion. Students who did not pass were sent to special classes with an enrollment cap of 20, specially trained teachers, and new materials aligned to newly established competency levels (House, 1989). However, after two years, the \$40 million dollar program was disbanded because its cost yielded no appreciable achievement gains (House, 1989). Despite the failure of this program, modified versions of it have reemerged in Chicago (Chicago Panel on School Policy, 2001); Washington, DC; Milwaukee; Denver; Long Beach; and San Diego (Kelly, 1990; San Diego Unified

School District, 2001). These programs were criticized as being more about public relations than about scholarship (House, 1989).

The political rhetoric surrounding social promotion increased in the 1990s, when social promotion was mentioned in President Clinton's 1998 State of the Union Address: "When we promote a child from grade to grade who hasn't mastered the work, we don't do that child any favors. It is time to end social promotion" (Clinton, 1998). This call to action and renewed attention to social promotion prompted 17 states to create specific policies banning social promotion all together (United States Department of Education, 1999).

The research on the social promotion of low-achieving children is sparse, yet some research indicates that social promotion has proven to be an ineffective strategy for improving educational success (Frederick & Hauser, 2008; Frey, 2005; Gastright, 1989; Rose et al., 1983). In fact, no direct data on social promotion are kept by any states, and the U.S. Department of Education (1999) has described social promotion as "a hidden problem" (p. 6). Social promotion is commonly viewed as half of a bimodal choice, with retention being the only other option. Therefore, much of the research on social promotion is confined to indirect comparison groups of large studies on retention (Frey, 2005).

Holmes (1989) performed a meta-analysis of 63 studies that included a low-achieving, non-retained subgroup in the research design. He reported that retained students averaged 0.33 standard deviations below their socially promoted peers on measures of academic achievement and personal adjustment. Furthermore, he asserted that these findings were limited because, in these studies, the socially promoted groups

did not receive any remediation. In addition, Reynolds (1992) found that at the end of fourth grade, a socially promoted subgroup had gains of eight months in reading and seven months in math over their similarly achieving, but retained, peers, despite receiving no additional intervention. Of special interest is that the retained students performed below the socially promoted group even though they had an extra year of schooling. These findings are in contrast to smaller studies that reported no achievement differences between retained and socially promoted students (Johnson et al., 1990; Westbury, 1994). It is important to note that the Johnson et al. study did not use a matched sample and instead compared retained and non-retained students, a design that favored social promotion. Pierson and Connell (1992) conducted a study of 74 third through sixth graders and found no differences between retained and socially promoted students in self-worth, cognitive competence, and effort.

The research on the effectiveness of social promotion has been sparse and the extrapolated results show limited benefits to the practice of social promotion (Green & Winters, 2006). A phase of high accountability in conjunction with content and performance standards has deemed social promotion as less a desirable method of administrators attempting to raise achievement through higher expectations for all learners (Green & Winters, 2006; Jimerson et al., 2006). Therefore, the practice and policy of retaining low-performing children has been used as an alternative to promoting students who have not met grade-level standards (Byrnes & Yammato, 1985; George, 1993; Jimerson & Schuder, 1996).

Theoretical foundations and research. There are four major theories that support the rationale behind this study. Vygotsky's (1962) sociocultural theory, Tajfel

and Turner's social identity theory (1982, 1986), Hunt (1975) and Mitchell's (1969) person-environment fit theory, and the stage-environment fit theory by Eccles et al. (1993).

Sociocultural theory and education. Sociocultural theory focuses on the important contributions society makes with regard to individual development. This theory stresses the interaction between the development of individuals and the culture within which they live. Sociocultural theory is largely grounded in the works of Vygotsky (Wertsch, 1991, 1998).

Vygotsky (1962) argued a child's development cannot be understood by a study of the individual. We must also examine the external social world in which that individual life has developed. "Through participation in activities that require cognitive and communicative functions, children are drawn into the use of these functions in ways that nurture and 'scaffold' them" (pp. 6-7). For Vygotsky, learning is embedded within social events and occurs as a child interacts with people, events, and objects in the environment" (1962). According to Eccles et al. (1993), adolescent learning is largely focused on social interactions. Vygotsky's sociocultural theory is therefore applicable because, according to Vygotsky (1962), all learning occurs as the result of social internal and external interactions, both within the child, between child and self, and between the child and his or her cultural surroundings (Vygotsky, 1962). Turner and Tajfel (1986) contributed to the social aspect of learning as they studied the social interactions one has within peer groups and how these in-group associations' effect perceptions and actions. Vygotsky's (1962) sociocultural theory offers a vantage point to highlight the importance of social interactions within the educational setting.

According to Vygotsky (1962), the foundations of learning are embedded within sociocultural development and human interaction. Vygotsky's notion of the zone of proximal development reveals a pattern of developmental change in which a phase of adult support precedes a phase of independent infant accomplishment. Within educational contexts, educators access this zone of proximal development as the basis for introducing new information in preparation for students to master new skills (Carroll, 1975; Vygotsky, 1986).

Social identity theory. Social identity theory (Turner & Tajfel, 1986) plays a critical role in personal identity and society at large. Membership in a particular group shapes our reactions, interactions, positions, and views. Social interactions are a major component of education. This is especially true in the education of adolescents who often model observed behaviors, which reflect the norms and morays of their peer groups and other environmental influences (Bandura, 1963). Students often strive for professions, or the lack thereof, according to the social norms and morays of their socio-economic environment and peer groups. Within social identity theory, a person acquires several aspects of their "personal self," which correlate to expanding circles and participation in-group membership. Different social situations may cause an individual to think, act, and feel differently based on their personal, national, or familial *level of self* (Turner, 1982).

In addition to the level of self, an individual is also thought to embody a multitude of social identities. Social identity is defined as the individual's self-concept derived from membership in social groups including perceived membership (Hogg & Vaughan, 2002). Social identity also involves an individualized perception of what defines the "us"

associated with group membership. Within this context, individuals begin to internalize their group membership. In other words, individuals' membership within a group begins to affect, and in some cases, directs how they feel, act, and think in other contexts.

Within social identity theory, group membership creates in-group self-categorization. In other words, members of a particular group favor other members of the same group over members of what is termed the out-group. Turner and Tajfel (1986) conducted small group studies and demonstrated how even the mere act of an individual labeling him or herself as a member of a particular group was sufficient to lead him or her to display favoritism or bias in favor of fellow members of that group. Group membership also serves as a source of positive self-esteem for both the individuals in the group and the group itself. Members of a group seek to achieve feelings of positive self-esteem by positively regarding their group in comparison to other groups. This is known as positive distinctiveness where the individual's sense of self is defined in "we" rather than in the individual "I" (Turner & Tajfel 1986).

Tajfel and Turner's social identity theory (1982, 1986) compliments Vygotsky's theory by highlighting the importance of in-group out-group associations and the concept of belonging because it pertains to middle school students. Tajfel and Turner (1979) identified three variables that influence in-group favoritism: (a) the extent to which individuals identify with and internalize the group membership as it affects their self-concept, (b) the extent to which the prevailing context provides for comparison between groups, and (c) the perceived relevance of the comparison group. Favoritism is likely to occur when the comparison in-group is central to the individual's sense of self-definition, or the outcome is contestable to the views of the group. This research has great

implications when educating adolescents. Adolescents have such strong in-group proclivities that they have been known to refrain from studying and/or earning exemplary grades because it is not considered “cool” or valued by other in-group members. This is known as stereotype threat and can have negative effects on student achievement and thus lead to grade retention (Steele, 1997, 2006).

Stereotype threat refers to being at risk of confirming, as self-characteristic, a negative stereotype about one’s group (Steele & Aronson, 1995). Steele and Aronson demonstrated in several experiments that Black college freshmen and sophomores performed more poorly on standardized tests than White students when their race was emphasized. Whereas, when race was not emphasized, Black students performed better or equivalently with White students. The results showed that declining academic performance, causing grade retention, is affected by the awareness that one’s behavior might be viewed through the lens of racial stereotypes (Steel & Aranson, 1995).

Haslam (2001) conducted a study that examined individual’s reactions to social and organizational change through the lens of social identity theory. In this experiment, schoolboys were assigned to groups intended to be as meaningless and random as possible. Groups were designed to intentionally discount roles of interpersonal history such as prior conflict, personal discordance, or history of ambivalent relationship. The schoolboys were directed to assign points to anonymous members of both their own group and the other group. The results demonstrated the schoolboys awarded more points to those who were members of their own group. The researchers concluded that even the most minimal conditions were sufficient to encourage in-group favoritism (Haslam, 2001). This research has great implications when educating adolescents. Often

students will refrain from studying and earning exemplary grades because it is not cool or valued within the in-group. Such associations contribute to academic decline, which then leads to grade retention, as was demonstrated by Steel and Aronson's (1995) work.

Person-environment fit theory. According to Hunt's (1975) developmental framework, individuals undergo a decrease in motivation when their environments do not correspond to their needs. This decrease in motivation can be detrimental to the individual. Hunt (1975) contended that learning is enhanced when there is a match between the skills of the learner and the challenges of the subject matter. This is referred to as the "optimal match." Hunt argued that learning depends on creating an environment with just the right amount and nature of information that will naturally stimulate an individual to exercise inherent skills and benefit fully in the learning experience. This optimal match can be compared to Vygotsky's zone of proximal development with regard to a teacher's need to provide such optimal matches to promote skills mastery, acquisition, and improve student performance (Vygotsky, 1962).

According to Hunt, there are challenges presented in achieving this right fit. First, there is no guarantee that learners and settings will cooperate in providing the "just right" elements. Secondly, Hunt warned that since each child is different, "teaching for match" requires an exhausting amount of intensive attention and exemplary skills on the part of educators. Yet, Hunt (1975) emphasized the importance of matching the environment to the child and claimed that this could be done in cases where students' responses, feelings, and behaviors provided the information and guidance to teachers concerned with matching.

Person-environment fit theory (Hunt, 1975; Mitchell, 1969) asserts that motivational and behavioral decline could be the result of the failure of schools to provide appropriate educational environments for adolescents. The developmental perspective of the person-environment fit theory asserts that certain types of school environments are more appropriate at different stages of development and that mismatch can lead to academic decline and failure, which leads to grade retention (Eccles & Midgley, 1989; Hunt, 1975; Mitchell, 1969).

Stage-environment fit theory. Eccles et al. (1993) added to Hunt's theory by introducing the stage-environment fit theory. Eccles et al. reported a mismatch in terms of the impact of changes in structures during the adolescent stage. In their adaptation of Hunt (1975) and Mitchell's (1969) work, Eccles et al. (1993) contended that the negative psychological changes associated with adolescent development result from a mismatch between the needs of developing adolescents and the opportunities afforded them by their social environments particularly when in transition from one educational setting to another. This mismatch between school and learner is regarded as a negative contributor to age-associated transformations that are often observed in early adolescents' motivation and self-perceptions.

Stage-environment fit theory highlights the importance of considering both the individual's developmental needs and the impact of school environment as a requisite for improving behavioral outcomes such as increased school engagement and academic success. Furthermore, it gives critical attention to the need to accurately determine the most essential elements for developing middle school environments that will cultivate the potential of each developing individual. The concept that there must be a fit between the

adolescent and the environment for positive outcomes to occur provides a case for increasing educators' awareness of the effect of environment on sought-after positive student outcomes.

Summary and Conclusion

The academic success of children is cause for great concern among parents, educators, and researchers, and enormous financial resources are allocated each year to educating failing children. Social promotion, the practice of advancing a low-achieving child to the next grade in the hope that he or she will catch up, has grown less accept to policymakers, even as the few studies conducted have shown little harm resulting from the practice. The growing disdain for social promotion seems to be fueled by political pressure and public opinion rather than by documented student outcomes. Although research on in-grade retention of students who have failed academically (and often socially) is more prevalent, unanswered questions remain. What is clear is that students who have been retained are more likely to be boys, African American, and from low-income environments (Frey, 2005; Jimerson, 2006).

In fact, African America students are more than twice as likely to have been retained as their White classmates and boys twice as likely then girls (National Center for Education Statistics, 2006). Retainees are more likely to drop out of school, work at lower paying jobs, suffer from substance abuse problems, and spend time in jail (Ayer, 1933; Byrd & Weitzman, 1994; Cairns et al., 1989; Dauber, 1993; Dawson, 1991; Foster, 1993; Holmes, 1984; Holmes & Matthews, 1989; Kline, 1933; Miesels, 1993; Silbergliitt et al., 2006). Despite these dire outcomes, the rates of retention have continued to rise. Although the detrimental effects of grade retention are readily available, no single study

has concluded and proscribed alternative methods to design a program to improve student outcomes for retained students. In addition, the alternative of social promotion has also been proven to be unsuccessful (Green & Winters, 2006; Greenwood et al., 2002; Jimerson, 2006; Lynch, 2014). Therefore, educators and researchers are faced with the challenge of creating an alternative grade-retention program to promote the acquisition of the skills required to progress students to the next grade level.

This study was grounded within theoretical frameworks. Theory one: Vygotsky's (1962) sociocultural theory offers a vantage point to highlight the importance of social interactions within the educational setting. Theory two: Tajfel and Turner's social identity theory (1982, 1986) compliments Vygotsky's theory by highlighting the importance of in-group and out-group associations and the concept of belonging as it pertains to middle school students. Theories three and four: Hunt (1975) and Mitchell's (1969) person-environment fit theory and Eccles et al. (1993) stage-environment fit theory, further examine the necessity of the middle school learning environment to fit both the stage of development of the middle school learner and their environmental needs within that stage of development.

Chapter 3 will focus on methodology. This quantitative study examined archival data within a pretest posttest design. Chapter 3 will also explore research participants, context, tools of measurement, and the repeated measures ANOVA as the statistical analysis, which was used.

Chapter 3: Research Design Methodology

Introduction

For many, grade retention is thought of as a *gift of time* (Bowman, 2005). As for most, it is counterintuitive to think that offering a student an extra year to master grade-level skills is not useful in helping students achieve skills mastery and/or acquiring the minimal skills necessary to advance to the next grade level (Natale, 1991; Owings & Magliaro, 1998). However, in reality, grade retention is considered to be so harmful that Jimerson (2002) concluded that traditional grade retention is one of the single-most important factors in predicting high school dropout rates. As far back as the 1990s, research has shown that African America and Hispanics males were twice as likely to be retained as Caucasian males (Byrd & Weitzman, 1994; Dauber, 1993; Foster, 1993; Miesels, 1993). In addition, frequently quoted findings associate retention with dropping out of high school and lower hourly wages upon entry into the job market than those who were not retained (Barrow & Kolstad, 1987; Eide, 2005; Frey, 2005, Jimerson, 1999).

This quantitative study analyzed archival data from sixth and seventh grade students who were retained within the same grade level for at least one year within a small city school district in Orange County, New York. This study explored whether enrollment in an alternative grade-retention program offering an increased time-on-task teaching strategy affected student achievement with regard to English Language Arts achievement. Quantitative, archival data was analyzed within a quasi-experimental pre-test, post-test design. According to Patten (2007) a quantitative method should be used when data can be quantified and statistically analyzed.

The data included, pre- and post-test New York State English Language Arts scores and pre- and post-test Developmental Reading Program scores. The experimental group and the convenience sample consisted of 108 sixth and seventh grade students who attended a retention program that offered an increased time-on-task teaching strategy with regard to ELA instruction. According to Huck (2012) a convenience sample requires no special screening and the researcher has the ability to collect data from whomever is available. Such was the case within this study that analyzed archival data. The increased time-on-task teaching strategy consisted of three 46-minute periods of ELA instruction per day.

This investigation was quasi-experimental, rather than experimental, because the main independent variable specified in this study, testing administration, was not manipulated by the researcher and random assignment was not used. Fundamentally, experimental studies are used to express cause and effect while quasi-experimental studies are used to test relationships (Huck, 2012). Six research questions guided this study:

1. Do sixth and seventh grade students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis (H₀1): Sixth and seventh grade students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task.

2. Do male and female students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 2 (H₀₂): Male and female students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task.

3. Do African America, Hispanic, and White students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 3 (H₀₃): African America, Hispanic, and White students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task.

4. Do sixth and seventh grade students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 4 (H₀₄): Sixth and seventh grade students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task.

5. Do male and female students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 5 (H₀₅): Male and female students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task.

6. Do African America, Hispanic, and White students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 6 (H₀₆): African America, Hispanic, and White students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task.

Research Context

The Orange County school district, which was the focus of this study, is northwest of New York City and employs approximately 1,000 staff members, of which 572 are teachers (Race to the Top Grant Application, 2012). The population under study consisted of sixth and seventh grade students attending Orange County, New York public schools. There were two middle schools serving the sixth and seventh grade retained students under review. The general demographic structure of these students was determined upon analysis of the data. (See Chapter 4.)

Over the years, the district's schools experienced a shift in student population with an influx of minority students and students living in poverty. The Hispanic/Latino enrollment grew from 38% in the 2003-2004 school year to 50% in 2011-2012 school year, while the number of White students declined from 34% to 21% in the same periods. Also during this time, the district's population of students' eligible to participate in the

federal Free and Reduced School Lunch program—a key indicator of poverty in a community—increased from 59% to 73% (Race to the Top Grant Application, 2012).

Since the 2004-2005 school year, with new leadership and a fresh vision, the district made remarkable strides in its quest to turn around its lowest achieving schools, despite such obstacles as dwindling fiscal resources and increasing numbers of economically disadvantaged students. While graduation rates for many urban school districts have declined or remained flat, the district's graduation rates have increased 32% (from 51% to 83%) in the past several years. In 2004, 51% of high school's seniors graduated compared to 83% in June 2010. In 2004, 66% of the economically disadvantaged students graduated compared to 82% in 2011. A look at ethnic groups showed that 54% of Black/African America students and 52% of Hispanic/Latino students graduated in 2005 compared to 82% and 76%, respectively, in 2011. It should also be noted that in 2010, the population showing the most remarkable gains in the graduation rate, at 92%, was Black/African America females (Race to the Top Grant Application, 2012).

Research Participants

The students within the alternative retention program received a different program than they experienced the previous school year. The alternative grade-retention program offered three 46-minute periods of English Language Arts instruction, one 46-minute period of Literacy instruction, two 46-minute periods of math instruction, one 46-minute period of math skills instruction, physical education class; lunch; and one elective such as technology. The program was launched on September 10, 2013.

The convenience sample (Huck, 2012) was obtained from the population by extracting archival data from a data warehouse maintained by the school district for one school. The intervention group consisted of 108 sixth and seventh grade students who received the intervention during the 2013-2014 school year.

Instruments Used in Data Collection

Within the alternative retention program, half of the seventh graders and all of the sixth graders received three 46-minute blocks of ELA instruction per day. This consisted of one 92-minute block of ELA taught by one teacher and another 46-minute period of literacy, taught by another teacher. The other half of the seventh graders received the same amount of ELA instruction, however, they had three different teachers for each of the ELA 46-minute periods. The same teacher taught the literacy block for both the sixth and seventh grades.

The teachers received training from the Director of Literacy, the Building Literacy Coach, and Orange Ulster BOCES. The teachers followed the Literacy Framework from Lesley University, which incorporated the Fontas and Pinnell (2010) reading and writing curriculum and the instructional strategies' Readers' and Writers' Workshop (Race to the Top Grant Application, 2012). Students were invited to engage in the writing process involving draft writing, conferencing, revision, and the final publishing process. Students were assessed by leveled reading tests and offered grade-level texts to best meet student needs and improve English Language Arts achievement.

Two instruments were specified in the design of this study: the New York State English Language Arts (NYS ELA) test and the Developmental Reading Program (DRP) test. The NYS ELA and DRP consisted of a series of questions that measure English,

reading, and writing skills. Repeated-measures analysis of variance were run to determine if the changes in the NYS ELA or DRP achievements across administrations of the testing depended on grade level, gender, and ethnicity.

New York State English Language Arts test. The New York State English Language Arts is part of the Common Core Learning Standards (2010) regiment administered to children in grades 3 through 8. The NYS ELA test is used to measure student proficiency in English. Students in grades 3-8 take the NYS ELA test each spring. It is a timed test that contains a variety of questions. Students answer multiple-choice questions based on short passages they read, and they write responses to open-ended questions based on the stories, articles, or poems they listen to or read (Department of Education, 2014).

Tests were scored by totaling the correct responses. Test scores range between 0-100 where the higher scores represent a greater understanding of the English language. Subsequently, each score is converted into the student's scale score, which is weighted by grade. The scaled score, or standardized score, provides the means to compare performance on tests across different grades. Given the nature of the variable, the ELA score is scaled at the ratio level (Huck, 2012).

Reliability and validity. The NYS ELA is a proprietary test used annually by the State of New York. Empirical studies of the internal structure of the test were conducted and found to be valid. Further, reliability of the constructs were also tested to validate internal consistency. High internal consistency constitutes evidence of validity. This is because high coefficients imply that the test items are measuring the same domain of skill and are reliable and consistent. For the total population, the ELA reliability coefficients

(Cronbach's alpha) ranged from .90-.92; and for all subgroups, the reliability coefficients were greater than or equal to .83 (New York State Testing Program, 2013).

Developmental reading program. The DRP Core Comprehension Tests consist of carefully constructed nonfiction paragraphs or passages on a variety of topics (Renn, 2008). Words are intentionally omitted from the paragraphs and passages. Students are asked to fill the conceptual gap by selecting the correct word from a set of multiple-choice options. The test is used to activate prior knowledge using text markers (titles, headings, etc.), graphics, and textual aids (objectives, questions, etc.). The criterion-referenced score scale describes what students are able to read (Renn, 2008). The DRP tests are not timed, which means slow readers are not penalized. However, most readers are able to finish a DRP test in a single class period. The DRP test scores range between 0-100 where higher scores represent greater competencies in reading and writing. Given the nature of the variable, the DRP score is scaled at the ratio level.

Reliability and validity. The Developmental Reading Program is a proprietary test developed for the State of New York. Empirical studies were not published on validity or reliability of the test. However, it was assumed that appropriate testing had been conducted since it is used state wide on an annual basis.

Procedures for Data Collection and Analysis

Archival quantitative data was obtained from the small city school district's Data Accountability Manager. The data was procured via electronic transfer of an Excel spreadsheet containing only student identification numbers and the corresponding variables and data points under review. To preserve confidentiality, the data file did not include student names. The data was obtained after receipt of 2014 New York State

English Language Arts scores. All other data is available within the school district’s archival databanks. Repeated-measures analysis of variance were run to determine if there were changes in English Language Arts or Developmental Reading Program scores across administrations of the tests depending on grade level, gender, and ethnicity.

Description of variables. Two pre-test-dependent variables, three independent variables, and two post-test-dependent variables were used in this study. The pre-test-dependent variables were previous NYSELA scores and DRP test scores for sixth and seventh graders. All four variables were scaled at the ordinal level. The independent variable (IV) was the alternative retention program, scaled at the nominal level. The four post-test-dependent variables were the NYS ELA scores and DRP test scores for sixth and seventh graders. Table 3.1 displays the aforementioned information in order of hypothesis.

Table 3.1

Specified Variables and Statistical Tests used by Research Question

Analysis	DV1	DV2	IV	Statistics
1	NYS ELA Time 1	NYS ELA Time 2	Grade	RM-ANOVA
2	NYS ELA Time 1	NYS ELA Time 2	Gender	RM-ANOVA
3	NYS ELA Time 1	NYS ELA Time 2	Ethnicity	RM-ANOVA
4	DRP Time 1	DRP Time 2	Grade	RM-ANOVA
5	DRP Time 1	DRP Time 2	Gender	RM-ANOVA
6	DRP Time 1	DRP Time 2	Ethnicity	RM-ANOVA

Note. Adapted from “Reading Statistics and Research,” by S. Huck, W. Corimer, and W. Bounds, 1974, p. 233.

Inferential statistics were used to draw conclusions from the sample tested. The Statistical Package for the Social Sciences (SPSS), version 22, was used to code and tabulate scores and provided summarized values where applicable. Descriptive statistics, including frequency counts and percent statistics, were computed for the demographic variables.

Within the pre-test, post-test design, data was collected before and after the intervention. There were six possible uncontrolled extraneous variables. These included history, maturation, testing, instrumentation, statistical regression, mortality, and selection of the sample (Huck, Corimer, & Bounds, 1974).

The statistical analysis that was used within this design was the parametric between within subjects analysis of variance test. This test was used to determine significance and compare the pre-test dependent variables and post-test-dependent variables after the intervention, an alternative to a retention program, was experienced by the sample (Huck et al., 1974). For each of the 108 students in the convenience sample, six repeated-measures analysis of the variance tests were run to determine the differences between sixth and seventh grade retained students, gender, and ethnicity on the NYS ELA and DRP measuring tools.

Chapter 4: Results

Research Questions

The following six research questions were developed to address the purpose of this study:

1. Do sixth and seventh grade students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?
2. Do male and female students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?
3. Do African America, Hispanic, and White students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?
4. Do sixth and seventh grade students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?
5. Do male and female students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?
6. Do African America, Hispanic, and White students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?

Data Analysis and Findings

Inferential statistics were used to draw conclusions from the samples tested. The SPSS was used to code and tabulate the scores collected from the survey and provide summarized values, where applicable, including the mean, standard deviation, variance, and central tendency. Prior to analyzing the variables of interest, data cleaning and data screening were undertaken to ensure the variables met appropriate statistical assumptions. Thus, the following analyses were conducted using an analytic strategy in that the variables were tested for parametric assumptions, including missing data, univariate outliers, normality, homogeneity of variance, and homogeneity of variance-covariance matrixes. Subsequently, repeated-measures ANOVA analyses were run to determine if any significant differences existed between the variables of interest. Table 4.1 displays the variables and statistical tests used to evaluate the six analyses.

Table 4.1

Variables and Statistical Tests Used to Evaluate Analyses 1-6

Analysis	Dependent Variable	Independent Variable	Statistical Technique
1	NYS ELA	Grade	Repeated-Measures ANOVA
2	NYS ELA	Gender	Repeated-Measures ANOVA
3	NYS ELA	Ethnicity	Repeated-Measures ANOVA
4	DRP	Grade	Repeated-Measures ANOVA
5	DRP	Gender	Repeated-Measures ANOVA
6	DRP	Ethnicity	Repeated-Measures ANOVA

Demographics. Data were collected from 129 valid students; however, 21 did not complete the ELA survey items and were removed from the analyses. Thus, 108 valid responses from participants were evaluated by the research questions. Specifically,

there were 49 valid responses from sixth grade students (45.4%) and 59 responses from seventh grade students (54.6%). The majority of the participants were female (sixth grade 73.5%, $n = 36$ and seventh grade 72.9%, $n = 43$). Furthermore, the majority of participants were Hispanic (sixth grade 59.2%, $n = 29$ and seventh grade 59.3%, $n = 35$). Displayed in Table 4.2 are frequency and percent statistics of participants' grade level, gender, and ethnicity.

Table 4.2

Frequency and Percent Statistics of Participants' Gender and Ethnicity by Grade Levels

Demographic	Frequency (n)	Percent per Grade Level (%)	Total Percentage (%)
6 th Grade			
Male	13	26.5	12.0
Female	36	73.5	33.3
African American	11	22.4	10.2
Hispanic	29	59.2	26.9
White	9	18.4	8.3
Total	49	100.0	45.4
7 th Grade			
Male	16	27.1	14.8
Female	43	72.9	39.8
African American	15	25.4	13.9
Hispanic	35	59.3	32.4
White	9	15.3	8.3
Total	59	100.0	54.6

Analyses 1-3. Analyses 1-3 were evaluated using repeated-measures analyses of variance to determine if any significant differences in students' New York State English Language Arts scores existed between grade levels. The dependent variables were students' ELA pre-test and post-test scores. Students' ELA scores ranged between 0 and

100, where higher scores represented a greater understanding of the English language. The independent variables for analyses 1-3 were students' grade level (sixth grade and seventh grade), gender (male and female), and ethnicity (African American, Hispanic, and White).

Data cleaning. Before the analyses were evaluated, the data were screened for missing data and univariate outliers. Missing data were investigated using frequency counts. Specifically, 21 cases with missing scores were found in the ELA distributions, and they were removed from the analyses. The data were screened for univariate outliers by transforming raw scores to z-scores and comparing z-scores to a critical range between -3.29 and $+3.29$, $p < .001$ (Tabachnick & Fidell, 2007). Z-scores that exceed this critical range are more than three standard deviations away from the mean and thus represent outliers. Results indicated that no cases with univariate outliers were found. Thus, 129 responses from students were received, and 108 were evaluated in analyses 1-3 ($N = 108$). Displayed in Appendix A are descriptive statistics of students' pre-test and post-test ELA scores by grade level, gender, and ethnicity.

Tests of normality. Before analyses 1-3 were analyzed, basic parametric assumptions were evaluated. That is, for the dependent variables (NYS ELA pre-test and post-test scores), assumptions of normality, homogeneity of variance, and homogeneity of variance-covariance matrixes were tested. To test if the distributions were significantly skewed, the skew coefficients were divided by the skew standard error, resulting in a z-skew coefficient. This technique was recommended by Tabachnick and Fidell (2007). Specifically, z-skew coefficients exceeding the critical range of -3.29 to $+3.29$ may indicate non-normality ($p < .001$). Kurtosis was also evaluated using the same

method. Thus, based on the evaluation of the z-skew and z-kurtosis coefficients, no distributions exceeded the critical range. Therefore, the distributions were assumed to be normally distributed and were used to evaluate analyses 1-3. Displayed in Appendix B are skewness and kurtosis statistics of students' ELA pre-test and post-test scores by grade levels, gender, and ethnicity.

Homogeneity of variance. Levene's Test of Equality of Error Variance was run to determine if the error variances of the dependent variables (NYS ELA pre-test and post-test scores) were equal across levels of the independent variables (grade level, gender, and ethnicity). Results indicated that no dependent variables violated the assumption of homogeneity of variance ($p > .05$). These results suggested that the error variances were equally distributed across levels of the independent variables. Displayed in Table 4.3 are the summary details of the Levene's test for analyses 1-3.

Table 4.3

Summary of Levene's Tests Conducted for Exploratory Analyses 1-3

Analysis	Dependent Variable	F	df1	df2	Sig. (p)
1	NYS ELA Pre-test	0.56	1	106	0.46
	NYS ELA Post-test	0.01	1	106	0.93
2	NYS ELA Pre-test	3.38	1	106	0.07
	NYS ELA Post-test	3.15	1	106	0.08
3	NYS ELA Pre-test	0.60	2	105	0.55
	NYS ELA Post-test	2.80	2	105	0.07

Note. Total $N = 108$.

Homogeneity of variance-covariance matrices. To examine the assumption of homogeneity of variance-covariance matrices Box's M Test of Equality of Covariance Matrices was run (Tabachnick & Fidell, 2007). This test was run to determine if the dependent variables (ELA pre-test and post-test) were equal across levels of the

independent variables (grade level, gender, and ethnicity). For Box's M, the critical value for determining whether the assumption of homogeneity of variance-covariance matrices was violated is $p < .001$. Results from the tests found that the distributions were equal across independent variable groups for all analyses. These results suggested that the assumption of homogeneity of variance-covariance matrices was met. Displayed in Table 4.4 are summary details of the Box's M Tests of Equality of Covariance Matrices conducted on exploratory analyses 1-3 (Tabachnick & Fidell, 2007).

Table 4.4

Summary of Box's M Tests Conducted for Exploratory Analyses 1-3

Analysis	Box's M	F	df1	df2	Sig. (p)
1	8.11	2.65	3	15296705.15	0.01
2	4.36	1.41	3	48489.50	0.24
3	8.057	1.29	6	26838.61	0.26

Note. Total $N = 108$.

Results of analysis 1. RQ1: Do sixth and seventh grade students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis (H_0): Sixth and seventh grade students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task.

Alternative Hypothesis 1 (H_{A1}): Sixth and seventh grade students demonstrate a dissimilar pattern of gains in English Language Arts scores due to the treatment variable of extra time-on-task.

Using SPSS 22.0, analysis 1 was evaluated using a repeated-measures ANOVA analysis to determine if any significant differences in students' ELA pre-test and post-test scores existed between grade levels (sixth grade and seventh grade). Results indicated that the profiles of sixth and seventh graders' ELA pre-test and post-test scores did significantly deviate from parallelism, $\lambda = 0.92$, $F(1, 106) = 8.94$, $p < .01$, $\eta^2 = .08$. That is, sixth grade students had a significantly larger increase in ELA scores from pre-test to post-test ($\Delta M = 15.16$), compared to seventh graders ($\Delta M = 4.97$). Thus, the null hypothesis was rejected in favor of the alternative hypothesis. Additionally, results from the test of between-subjects effects (sixth and seventh graders combined) indicated that there was a significant difference between students' ELA scores between pre-test and post-test, *Wilk's Lambda* = 0.75, $F(1, 106) = 34.8$, $p < .01$. That is, overall- there was a significant increase in all students' ELA scores from pre-test ($M = 263.72$, $SD = 20.23$) to post-test ($M = 273.31$, $SD = 22.56$). Subsequently, similar results were found from the tests of between-subject effects of hypotheses 2 and 3 ($p < .01$), and they are not discussed in the following sections (results of analyses 2 and 3). A model summary of the repeated-measures ANOVA analysis for hypothesis 1 is displayed in Table 4.5.

Figure 4.1 displays the means plot for sixth and seventh grade students' ELA test scores by grade type. As evidenced by the plot, sixth-grade student scores from pre-test to post-test increased at a greater rate than the seventh-grade students. A means plot of students' ELA pre-test and post-test scores by grade levels is displayed in Figure 4.1.

Table 4.5

Model Summary of ANOVA Analysis for Hypothesis 1

Effect	Wilks' Lambda (λ)	F	Hypothesis df	Error df	Sig. (p)	Partial Eta-squared (η^2)
ELA	0.75	34.84	1	106	<.001	0.25
ELA *	0.92	8.94	1	106	<.01	0.08
Grade						
		Pre-test		Post-test		
ELA						
Score	Mean	SD	Mean	SD	ΔM	n
6th grade	257.53	20.65	272.69	21.34	15.16	49
7th grade	268.86	18.51	273.83	23.70	4.97	59
Total	263.72	20.23	273.31	22.56	9.59	108

Note. Dependent variables = ELA pre-test and post-test scores, $N = 108$.

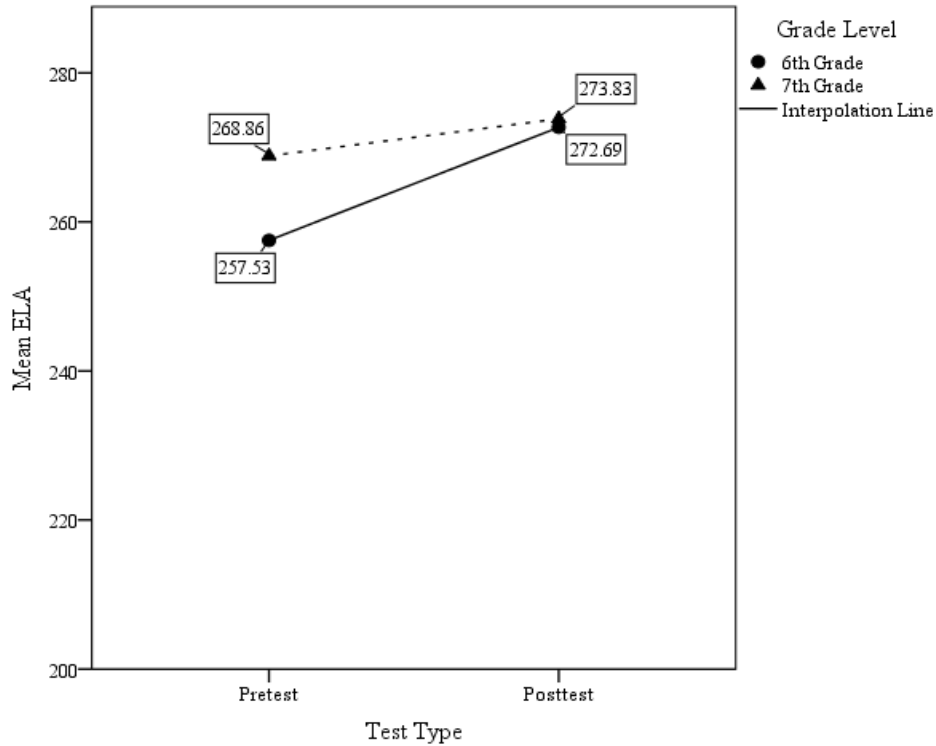


Figure 4.1. Means plot of participants' ELA scores by grade level.

Results of analysis 2. RQ2: Do male and female students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 2 (H₀₂): Male and female students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task.

Alternative Hypothesis 2 (H₀₂): Male and female students demonstrate a dissimilar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task.

Analysis 2 was evaluated using a repeated-measures ANOVA analysis to determine if any significant differences in students' ELA pre-test and post-test scores existed between genders (male and female). Results indicated that the profiles of male

and female students' ELA pre-test and post-test scores did not significantly deviate from parallelism, $\lambda > .99$, $F(1, 106) = 0.36$, $p = .55$, $\eta^2 < .01$. That is, male students had statistically similar increases in ELA scores from pre-test to post-test ($\Delta M = 11.34$), compared to female students ($\Delta M = 8.95$). Thus, null hypothesis 2 was retained. A model summary of the repeated-measures ANOVA analysis for hypothesis 2 is displayed in Table 4.6.

Figure 4.2 displays the means plot for students' ELA test scores by gender. As evidenced by the plot, male and female students had significantly similar increases in ELA scores from pre-test to post-test. A means plot of participants' ELA scores by gender is displayed in Figure 4.2.

Table 4.6

Model Summary of ANOVA Analysis for Hypothesis 2

Effect	Wilks' Lambda (λ)	F	Hypothesis df	Error df	Sig. (p)	Partial Eta-squared (η^2)
ELA	0.80	25.97	1	106	<.01	0.20
ELA *	1.00	0.36	1	106	0.55	<.01
Gender						
	Pre-test		Post-test			
ELA Score	Mean	SD	Mean	SD	ΔM	n
Male	268.14	18.20	279.48	17.05	11.34	29
Female	262.10	20.79	271.05	23.97	8.95	79
Total	263.72	20.23	273.31	22.56	9.59	108

Note. Dependent variables = ELA pre-test and post-test scores, $N = 108$.

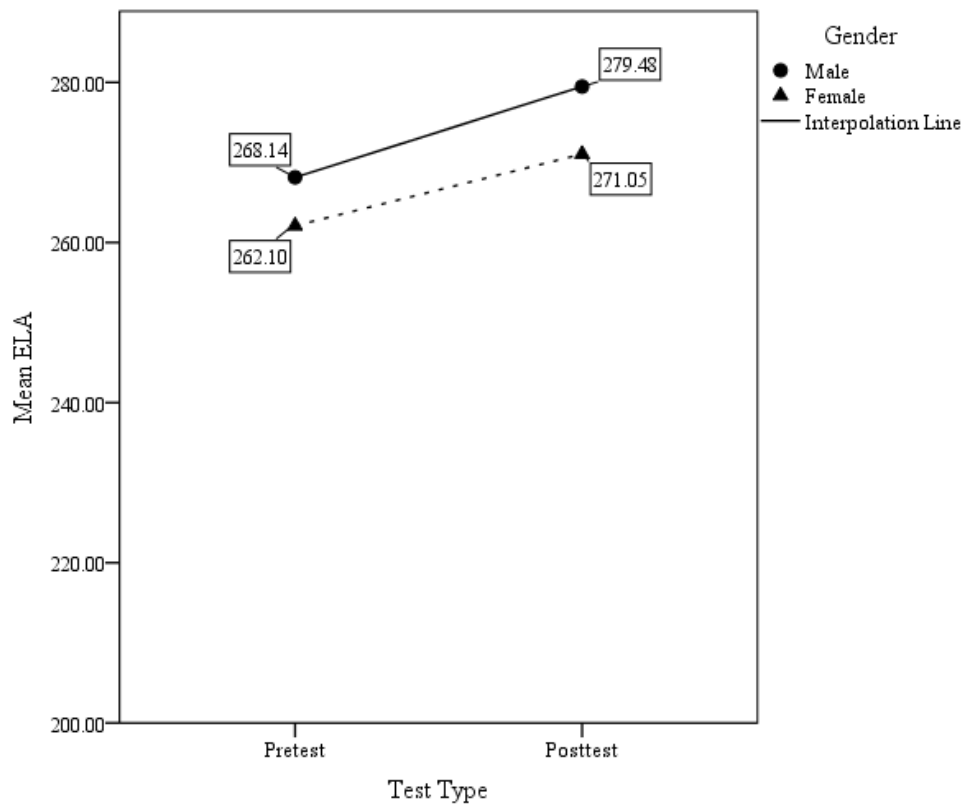


Figure 4.2. Means plot of participants' ELA scores by gender.

Results of analysis 3. RQ3: Do African America, Hispanic, and White students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 3 (H_{03}): African America, Hispanic, and White students demonstrate a similar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task.

Alternative Hypothesis 3 (H_{A3}): African America, Hispanic, and White grade students demonstrate a dissimilar pattern of gains in English Language Arts achievement scores due to the treatment variable of extra time-on-task..

Analysis 3 was evaluated using a repeated-measures ANOVA analysis to determine if any significant differences in students' ELA pre-test and post-test scores existed between ethnicities (African American, Hispanic, and White). Results indicated that the profiles of African American, Hispanic, and White students' ELA pre-test and post-test scores did not significantly deviate from parallelism, $\lambda = 0.99$, $F(1, 105) = 0.62$, $p = .54$, $\eta^2 = .01$. That is, students of all three ethnicities had statistically similar increases in ELA scores from pre-test to post-test (Black/African American $\Delta M = 8.12$, Hispanic $\Delta M = 11.14$, White $\Delta M = 6.22$). Thus, null hypothesis 3 was retained. A model summary of the repeated-measures ANOVA analysis for hypothesis 3 is displayed in Table 4.7.

Table 4.7

Model Summary of ANOVA Analysis for Hypothesis 3

Effect	Wilks' Lambda (λ)	F	Hypothesis df	Error df	Sig. (p)	Partial Eta-squared (η^2)
ELA	0.86	17.58	1	105	<.01	0.14
ELA * Ethnicity	0.99	0.62	2	105	0.54	0.01
			Pre-test	Post-test		
ELA Score	Mean	SD	Mean	SD	ΔM	n
Black/African American	258.73	17.96	266.85	19.72	8.12	26
Hispanic	265.59	21.44	276.73	21.23	11.14	64
White	264.28	18.59	270.50	29.08	6.22	18
Total	263.72	20.23	273.31	22.56	9.59	108

Note. Dependent variables = ELA pre-test and post-test scores, $N = 108$.

Figure 4.3 displays the means plot for students' ELA test scores by ethnicity. As evidenced by the plot, students of all three ethnicities had significantly similar increases in ELA scores from pre-test to post-test. A means plot of participants' ELA scores by ethnicity is displayed in Figure 4.3.

Analyses 4-6. Analyses 4-6 were evaluated using repeated-measures analyses of variance to determine if changes in DRP scores across testing administrations depended on grade level, gender, and ethnicity. The dependent variables were students' DRP pre-test and post-test scores. Students' DRP scores ranged between 0 and 100, where higher scores represent greater competencies in reading and writing. The independent variables for analyses 4-6 were students' grade level (sixth grade and seventh grade), gender (male and female), and ethnicity (African American, Hispanic, and White).

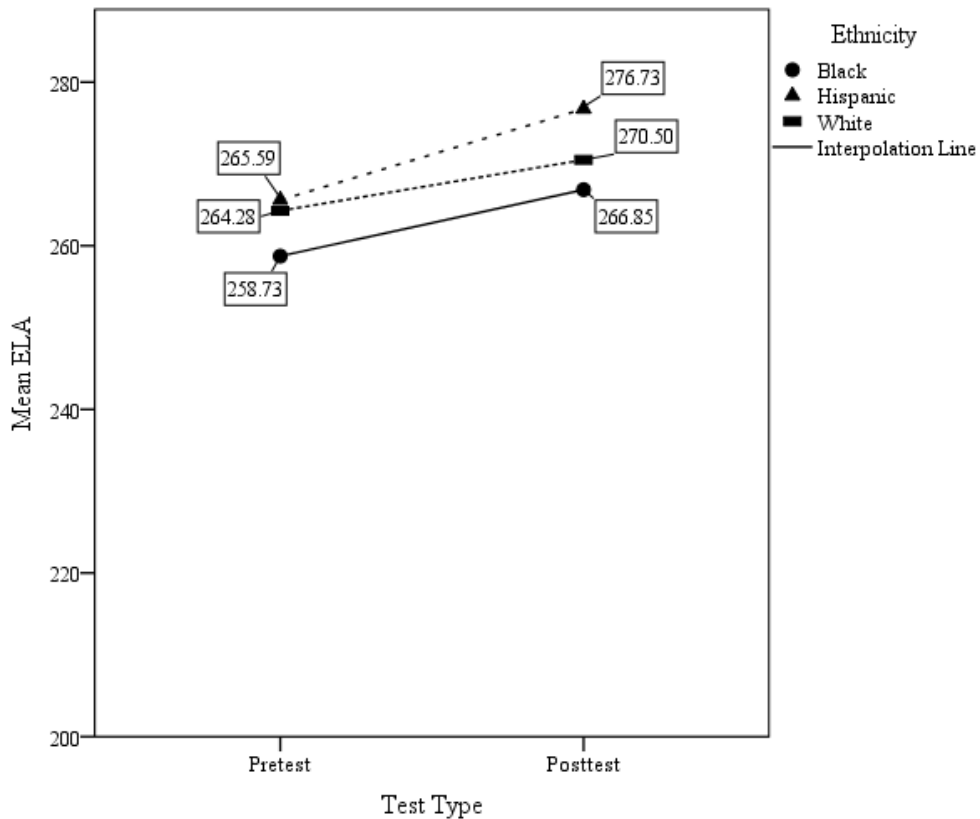


Figure 4.3. Means plot of participants' ELA scores by ethnicity.

Data cleaning. Before the analyses were evaluated, the data were screened for missing data and univariate outliers. Results indicated that 29 cases had missing data on one or both of the DRP pre-test and post-test distributions, and they were removed from the analyses. After analyzing the distributions for univariate outliers, results indicated that no cases with outliers existed. Thus, 129 responses from students were received and 100 were evaluated in analyses 4-6 ($N = 100$). Displayed in Appendix C are descriptive statistics of students' pre-test and post-test DRP scores by grade level, gender, and ethnicity.

Tests of normality. Before research questions 4-6 were analyzed, basic parametric assumptions were evaluated (Tabachnick & Fidell, 2007). That is, for the dependent variables (DRP scores), assumptions of normality, homogeneity of variance, and homogeneity of variance-covariance matrices were tested. Thus, based on the evaluation of the z-skew and z-kurtosis coefficients, no distributions exceeded the critical range (-3.29 to $+3.29$). Thus, the distributions did not violate the assumption of normality and were assumed to be normally distributed. Displayed in Appendix D, are skewness and kurtosis statistics of students' DRP pre-test and scores by grade level, gender, and ethnicity.

Homogeneity of variance. Levene's Test of Equality of Error Variance was run to determine if the error variances of the dependent variables (DRP pre-test and post-test scores) were equal across levels of the independent variable (grade level, gender, and ethnicity) (Tabachnick & Fidell, 2007). Results indicated that the distributions across genders did not meet the assumption of homogeneity of variance (pre-test $p = .01$ and post-test $p = .02$). The violation of the assumption was considered a limitation of the

study. The remaining distributions did meet the assumption of homogeneity of variance and were considered to be equally distributed across levels of the independent variables (grade level, gender, and ethnicity) (see Table 4.8).

Homogeneity of variance-covariance matrices. To examine the assumption of homogeneity of variance-covariance matrices, Box’s M Test of Equality of Covariance Matrices was run to determine if the dependent variables (DRP pre-test and post-test) were equal across levels of the independent variables (grade level, gender, and ethnicity) (Tabachnick & Fidell, 2007). Results from the tests found that the distributions were equal across independent variable groups for all analyses. These results suggest that the assumption of homogeneity of variance-covariance matrices was met. Displayed in Table 4.9 are summary details of the Box’s M Tests of Equality of Covariance Matrices conducted on exploratory analyses 4-6.

Table 4.8

Summary of Levene’s Tests Conducted for Exploratory Analyses 4-6

Analysis	Dependent Variable	F	df1	df2	Sig. (<i>p</i>)
4	DRP Pre-test	2.17	1	98	0.14
	DRP Post-test	1.68	1	98	0.20
5	DRP Pre-test	6.31	1	98	0.01
	DRP Post-test	5.93	1	98	0.02
6	DRP Pre-test	0.26	2	97	0.77
	DRP Post-test	1.27	2	97	0.29

Note. Total *N* = 100.

Table 4.9

Summary of Box's M Tests Conducted for Exploratory Analyses 4-6

Analysis	Box's M	F	df1	df2	Sig. (<i>p</i>)
4	2.76	0.90	3	2186545.46	0.44
5	16.67	5.39	3	42071.89	<.01
6	9.76	1.56	6	20333.98	0.16

Note. Total *N* = 100.

Results of research question 4. RQ4: Do sixth and seventh grade students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 4 (H_04): Sixth and seventh grade students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task.

Alternative Hypothesis 4 (H_A4): Sixth and seventh grade students demonstrate a dissimilar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task.

Using SPSS 22, analysis 4 was evaluated using a repeated-measures ANOVA analysis to determine if any significant differences in students' DRP pre-test and post-test scores existed between grade levels (sixth grade and seventh grade). Results indicated that the profiles of sixth and seventh graders' DRP pre-test and post-test scores did not significantly deviate from parallelism, $\lambda = 0.99$, $F(1, 98) = 0.57$, $p = .45$, $\eta^2 = .01$. That is, sixth grade students had statistically similar increases in DRP scores from pre-test to post-test ($\Delta M = 5.69$), compared to seventh graders ($\Delta M = 4.46$). Thus, null hypothesis 4 was retained. However, results from the test of between-subjects effects (all students

combined) indicated that there was a significant difference between students' DRP scores between pre-test and post-test, $\lambda = 0.71$, $F(1, 98) = 39.24$, $p < .01$, $\eta^2 = .29$. That is, overall, there was a significant increase in all students' DRP scores from pre-test ($M = 40.44$, $SD = 10.36$) to post-test ($M = 45.49$, $SD = 10.42$). Subsequently, similar results were found from the tests of between-subject effects of hypotheses 5 and 6 ($p < .01$), and they are not discussed in the following sections (results of analyses 5 and 6). A model summary of the repeated-measures ANOVA analysis for hypothesis 4 is displayed in Table 4.10.

Table 4.10

Model Summary of ANOVA Analysis for Hypothesis 4

Effect	Wilks' Lambda (λ)	F	Hypothesis df	Error df	Sig. (p)	Partial Eta-squared (η^2)
DRP	0.71	39.24	1	98	<.01	0.29
DRP * Grade	0.99	0.57	1	98	0.45	0.01
	Pre-test		Post-test			
DRP Score	Mean	SD	Mean	SD	ΔM	n
6th grade	35.71	8.39	41.40	8.62	5.69	48
7th grade	44.81	10.14	49.27	10.58	4.46	52
Total	40.44	10.36	45.49	10.42	5.05	100

Note. Dependent variables = DRP pre-test and post-test, $N = 100$.

Figure 4.4 displays the means plot for students' DRP test scores by grade level. As evidenced by the plot, sixth and seventh grade students had significantly similar increases in DRP scores from pre-test to post-test. A means plot of participants' DRP scores by grade levels is displayed in Figure 4.4.

Results of research question 5. RQ5: Do male and female students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 5 (H₀₅): Male and female students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task.

Alternative Hypothesis 5 (H_{A5}): Male and female students demonstrate a dissimilar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task.

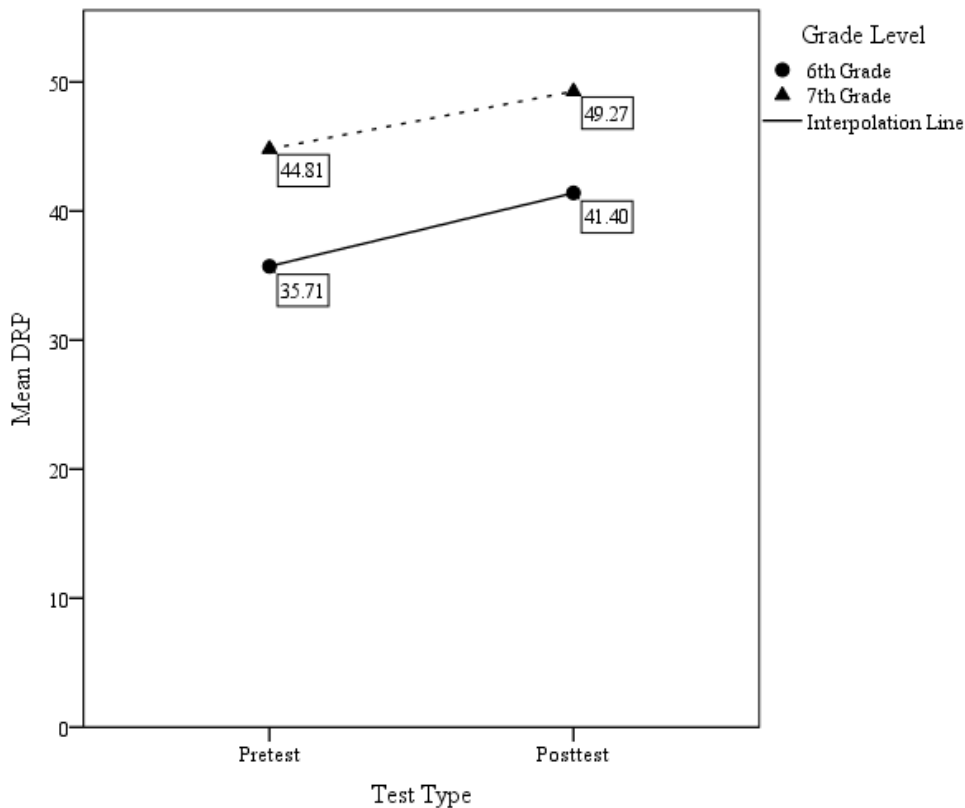


Figure 4.4. Means plot of participants' DRP scores by grade level.

Analysis 5 was evaluated using a repeated-measures ANOVA analysis to determine if any significant differences in students' DRP pre-test and post-test scores

existed between genders (male and female). Results indicated that the profiles of male and female students' DRP pre-test and post-test scores did not significantly deviate from parallelism, $\lambda > 0.99$, $F(1, 98) = 0.26$, $p = .61$, $\eta^2 < .01$. That is, female students did not have a significantly larger increase in DRP scores from pre-test to post-test ($\Delta M = 5.30$), compared to male students ($\Delta M = 4.37$). Thus, null hypothesis 5 was retained. A model summary of the repeated-measures ANOVA analysis for hypothesis 5 is displayed in Table 4.11.

Table 4.11

Model Summary of ANOVA Analysis for Hypothesis 5

Effect	Wilks' Lambda (λ)	F	Hypothesis df	Error df	Sig. (p)	Partial Eta Squared (η^2)
DRP	0.78	28.05	1	98	<.01	0.22
DRP * Gender	>.99	0.26	1	98	0.61	<.01
	Pre-test		Post-test			
DRP Score	Mean	SD	Mean	SD	ΔM	n
Male	39.22	7.09	43.59	6.44	4.37	27
Female	40.89	11.34	46.19	11.51	5.30	73
Total	40.44	10.36	45.49	10.42	5.05	100

Note. Dependent variables = DRP pre-test and post-test, $N = 100$

Figure 4.5 displays the means plot for students' DRP test scores by gender. As evidenced by the plot, male and female students had significantly similar increases in DRP scores from pre-test to post-test. A means plot of participants' DRP scores by gender is displayed in Figure 4.5.

Results of research question 6. RQ6: Do African America, Hispanic, and White students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task?

Null Hypothesis 6 (H₀₆): African America, Hispanic, and White students demonstrate a similar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task.

Alternative Hypothesis 6 (H_{A6}): Black, Hispanic, and White grade students demonstrate a dissimilar pattern of gains in Developmental Reading Program achievement scores due to the treatment variable of extra time-on-task.

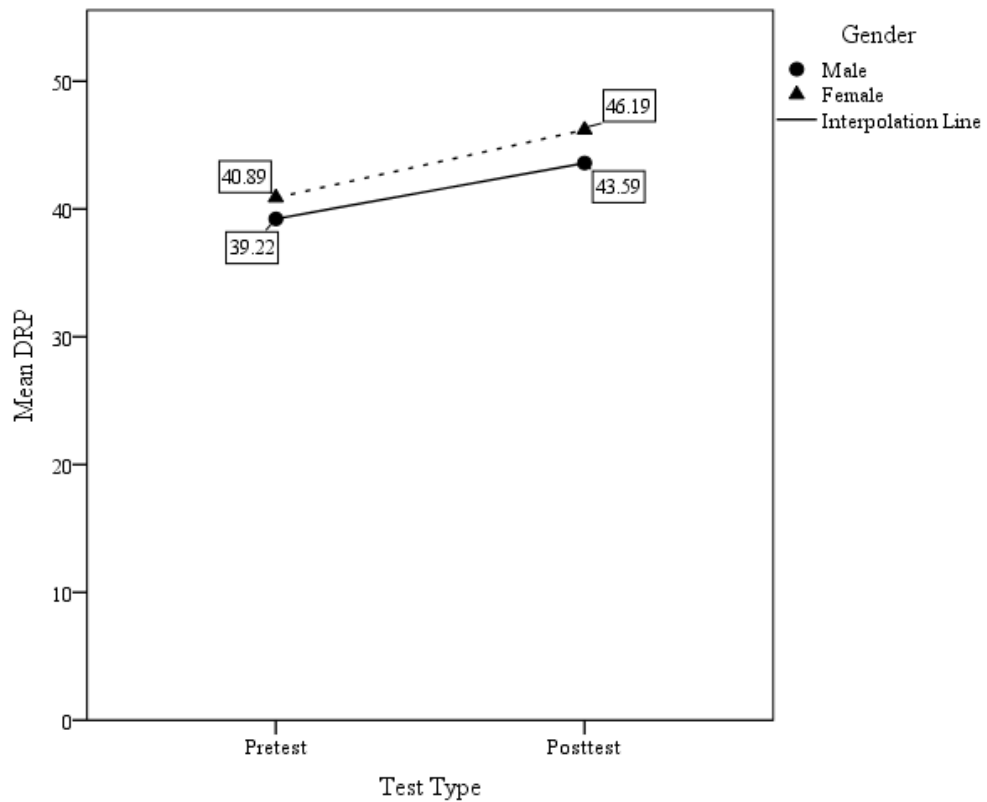


Figure 4.5. Means plot of participants' DRP scores by gender.

Analysis 6 was evaluated using a repeated-measures ANOVA analysis to determine if any significant differences in students' DRP pre-test and post-test scores

existed between ethnicity (African American, Hispanic, and White). Results indicated that the profiles of African America, Hispanic, and White students' DRP pre-test and post-test scores did significantly deviate from parallelism, $\lambda = 0.93$, $F(1, 97) = 3.53$, $p = .03$, $\eta^2 = .07$. That is, there were significant multivariate differences in students' DRP scores from pre-test to post-test across the three ethnicities. Thus, null hypothesis 6 was rejected in favor of the alternative hypothesis. A model summary of the repeated-measures ANOVA analysis for hypothesis 6 is displayed in Table 4.12.

Table 4.12

Model Summary of ANOVA Analysis for Hypothesis 6

Effect	Wilks' Lambda (λ)	F	Hypothesis df	Error df	Sig. (p)	Partial Eta-squared (η^2)
DRP	0.85	17.78	1	97	<.01	0.16
DRP * Ethnicity	0.93	3.53	2	97	0.03	0.07
	Pre-test		Post-test			
DRP Score	Mean	SD	Mean	SD	ΔM	n
Black/African American	40.00	10.17	44.37	12.07	4.37	24
Hispanic	39.10	10.32	45.58	10.11	6.48	60
White	46.13	9.41	46.81	9.35	0.68	16
Total	40.44	10.36	45.49	10.42	5.05	100

Note. Dependent variables = DRP pre-test and post-test, $N = 100$.

A means plot of participants' DRP scores by ethnicity is displayed in Figure 4.6 displays the means plot for African America, Hispanic, and White students' DRP test scores by test type. That is, Hispanic students had the largest increase in DRP scores from pre-test to post-test ($\Delta M = 6.48$), African America students had the second largest

increase ($\Delta M = 4.37$), and White students' DRP scores increased the least ($\Delta M = 0.68$).

As evidenced by the plot, Hispanic students' DRP scores from pre-test to post-test increased at a greater rate than African American or White students.

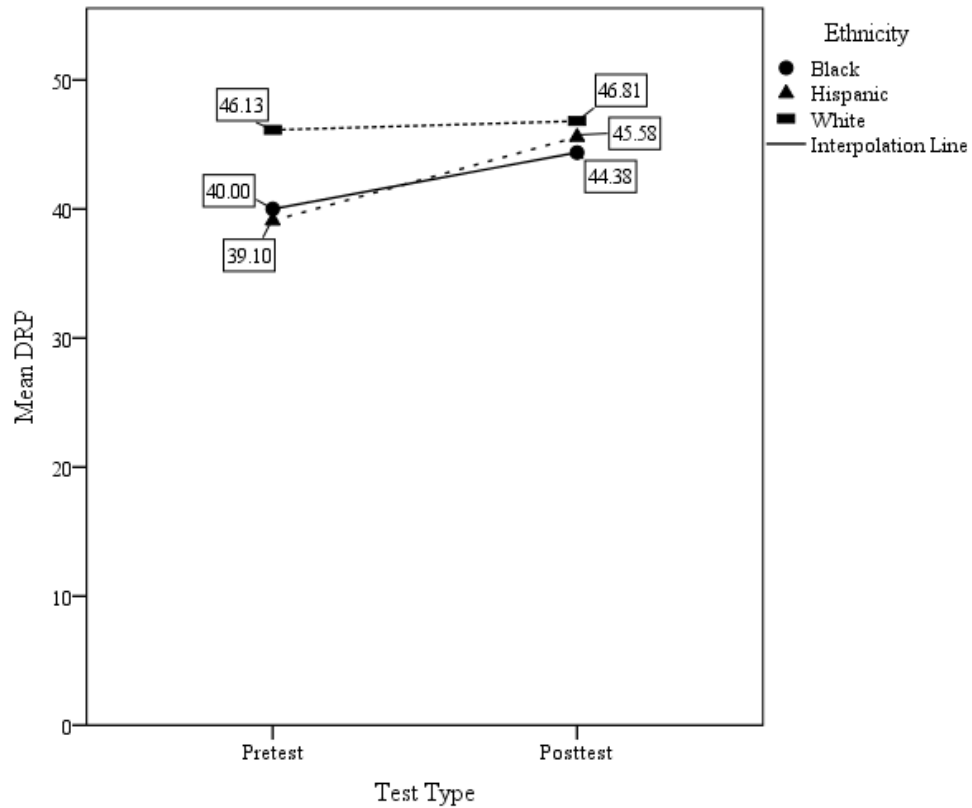


Figure 4.6. Means plot for Black/African American, Hispanic, and White students' DRP test scores by test type.

Summary of Results

For decades, researchers have demonstrated that grade retention is ineffective, yet faced with the challenge of having students achieve grade-level skills mastery before progressing to the next grade level, educators continue to use this practice (Jimerson & Renshaw, 2012). In fact, grade-retention research evidences that grade retention can have harmful long-term effects on students (Im et al., 2013). Therefore, this study

attempted to provide educators with data to determine if a grade-retention program utilizing an increased time-on-task teaching strategy would be effective increasing student achievement with regard to New York State English Language Arts and Developmental Reading Program assessment achievement.

The data was analyzed to determine outliers, normality, and kurtosis. After such analyses were run, 129 responses from students were received, and 108 were evaluated in analyses 1-3 (N = 108). Within Chapter 4, findings were presented to analyze the six research questions that guided this study.

The following is a summary of results and is indicated in Table 4.14 below:

1. Results indicated sixth grade students had a significantly larger increase in NYS ELA scores from pre-test to post-test, compared to seventh graders. Thus, the Null Hypothesis was rejected in favor of the Alternative Hypothesis.
2. Male students had statistically similar increases in NYS ELA scores from pre-test to post-test, compared to female students. Thus, Null Hypothesis 2 was retained.
3. Students of all three ethnicities: African America, Hispanic, and White students, had statistically similar increases in NYS ELA scores from pre-test to post-test. Thus, Null Hypothesis 3 was retained.
4. Results indicated sixth grade students had statistically similar increases in DRP scores from pre-test to post-test, compared to seventh graders. Thus, Null Hypothesis 4 was retained.

5. Female students did not have a significantly larger increase in DRP scores from pre-test to post-test, compared to male students. Thus, Null Hypothesis 5 was retained.
6. There were significant differences in students' DRP scores from pre-test to post-test across the three ethnicities. Thus, Null Hypothesis 6 was rejected in favor of the Alternative Hypothesis. That is, Hispanic students had the largest increase in DRP scores from pre-test to post-test; African America students had the second largest increase; and White students' DRP scores increased the least.

Thus, Null Hypothesis 1 and 6 were rejected in favor of the alternative hypotheses. A summary of the results for repeated-measures ANOVA analyses for Hypotheses 1 through 6 are displayed in Table 4.13.

Table 4.13

Summary of Results for Hypotheses 1-6

Hypotheses	Dependent Variable	Independent Variable	Statistical Technique	Sig. (<i>p</i>)
H1	NYS ELA	Grade	Repeated-Measures ANOVA	<.01
H2	NYS ELA	Gender	Repeated-Measures ANOVA	.55
H3	NYS ELA	Ethnicity	Repeated-Measures ANOVA	.54
H4	DRP	Grade	Repeated-Measures ANOVA	.45
H5	DRP	Gender	Repeated-Measures ANOVA	.61
H6	DRP	Ethnicity	Repeated-Measures ANOVA	.03

Chapter 5: Discussion

Introduction

The research suggests that grade retention is a costly intervention with minimal evidence of benefits to the retained student (Cham, Hughes, West, & Im, 2015). In fact, a review of the literature revealed that grade retention has been, in some cases, directly related to having a negative impact on educational outcomes and that it may cause more problems than it solves (García-Pérez, Hidalgo-Hidalgo, & Robles-Zurita, 2014; Stipek & Lombardo, 2014). Yet, with the overwhelming push to adhere to standards and promote College and Career Readiness educators are faced with the charge to design methods to improve student achievement (Rothman, 2012).

Some research concludes that increased time-on-task is one of the most significant factors in improving student achievement (Greenwood et al., 2002; Marks, 2000; Slavin, 2003). Within this quasi-experimental design, a convenience sample of quantitative, archival data was analyzed to determine if an alternative grade-retention program implementing an increased time-on-task teaching strategy was effective in increasing student achievement scores on New York State English Language Arts and Developmental Reading Program tests. Within an alternative grade-retention program, English Language Arts instruction was increased to three 46-minute blocks of instructional time instead of one 46-minute period. This was the treatment variable or intervention. This intervention kept the students in one classroom for longer periods of time, similar to that which they were accustomed to within the elementary school setting.

Implications of Findings

Throughout New York State, schools are being evaluated based on their results on standardized test scores, and districts are looking for ways to improve student scores and moving away from socially promoting students who have not achieved skills mastery at a particular grade level (Anagnostopoulos, 2006; Rust, 2012). Due to the No Child Left Behind Act (2001), schools and teachers are being held accountable based on students' performance on standardized assessments, and alternative programs are being explored. The focus of this study was to explore the efficacy of an alternative grade-retention program implementing an increased time-on-task teaching strategy with regard to sixth and seventh grade students' ELA achievement.

Results of Research Question 1 indicated that sixth grade students had a significantly larger increase in NYS ELA scores from pre-test to post-test, compared to seventh graders, $p < .01$. According to Hunt (1975) and Mitchell (1969), learning is enhanced when there is an optimal match between the skills of the learner and the challenges of the subject matter. This data perhaps suggests that Hunt (1975) and Mitchell's (1969) Pearson-environment fit theory was supported and that the environment provided may have suited sixth grade students more favorably. Considering sixth grade students outperformed seventh grade students' scores, perhaps the *optimal match* between the person and the environment was achieved (Hunt, 1975; Mitchell, 1969).

This data also perhaps supports Eccles et al. (1993) stage-environment fit theory. This may be due to the fact that the environment was perhaps more favorably suited to the stage of development of sixth grade students over seventh grade students. Particularly, stage-environment fit theory indicates that adolescents experience negative

psychological changes when the opportunities afforded by social environments are a mismatch with the needs of adolescents. The sixth grade students just left elementary school, where instruction was conducted in self-contained settings. Such was the case when the retained students were exposed to the intervention, which consisted of three 46-minute blocks of ELA instruction. During the intervention, one block of ELA instruction was 96 minutes long, and it occurred in one room. The other 46-minute period occurred in the same room, although later in the day. Therefore, given that the environment was similar to that which the students experienced in elementary school, the learning environment may have been more suitably matched to the needs of the sixth grade students and thus enabled them to outperform the seventh grade students (Eccles et al., 1993).

Results from Research Question 2 revealed male students had statistically similar increases in ELA scores from pre-test to post-test, compared to female students. These results support research, which reports that both male and female students typically do not benefit from grade retention (Cham et al., 2015; García-Pérez et al., 2014; Holmes & Matthews, 1984; Jimerson & Schuder, 1996, Jimerson et al., 1997; Kline, 1933; Leckrone & Griffith, 2006; Miesels, 1993; Miesels & Liaw, 1993; Stipek & Lombardo, 2014).

Results of Research Question 3 indicated students of all three ethnicities, African American, Hispanic, and White, all had statistically similar increases in ELA scores from pre-test to post-test. Thus this research supports research that concluded that grade retention is ineffective (Kline, 1933; Leckrone & Griffith, 2006; Miesels, 1993; Owings & Magliaro, 1998; Silberglitt et al., 2006; Stearns et al., 2007; Stipek & Lombardo, 2014).

Results of Research Questions 4 and 5 indicated that sixth grade students had statistically similar increases in DRP scores from pre-test to post-test, compared to seventh graders and female students who did not have a significantly larger increase in DRP scores from pre-test to post-test, compared to male students. Thus, these results also supported research that concludes that grade retention is ineffective in improving student achievement and, in some cases, may even be a detriment to future academic success (Alexander et al., 1994; Allen et al., 2009; Bowman, 2005; Lenarduzzi, 1990; Herbers et al., 2009; Keller-Margulis & Gischlar, 2014).

However, with regard to Research Question 6, results indicated there were significant differences in students' DRP scores from pre-test to post-test across the three ethnicities. That is, Hispanic students had the largest increase in DRP scores from pre-test to post-test; African American students had the second largest increase; and White students' DRP scores increased the least. These results were also consistent with the findings of Research Question 3. Although results of Analysis 3 indicated that students of all three ethnicities, African American, Hispanic, and White, had statistically similar increases in ELA scores from pre-test to post-test, review of the plotted data of means indicated that Hispanic students, once again out, performed African American and White students.

This data and the identified trend could perhaps be interpreted to support Vygotsky's (1962) sociocultural theory, Tajfel and Turner's social identity theory (1986), and Steele and Aronson's concept of *stereotype threat* (Steele & Aronson, 1995). Specifically, Vygotsky's sociocultural theory relates to middle school learning environments with regard to the focus on individual development and social interactions.

Because Hispanic students made up 59.2% of the sixth grade student body and 59.3% of the seventh grade student body, they were the majority. Therefore, according to Tajfel and Turner's social identity theory (1986), they would have more in-group associations and greater instances of social interactions. Furthermore, in accordance with Steele and Aronson's concept of stereotype threat (Steele & Aronson, 1995), since more Hispanic students were present and outperforming other ethnic groups, the students felt comfortable to achieve, did not feel like "outcasts," and were doing what other members of their ethnic group were doing. Therefore, within the environment, perhaps there was no anxiety to confirm a negative stereotype and reduce their academic performance (Steele & Aronson, 1995). Within the environment, which the intervention was implemented, perhaps the Hispanic students were not at a threat to achieve, but rather achievement was reinforced by the successes of their peers. Furthermore, this increase in DRP scores by Hispanic students may have also been due in part to an increase in the use and knowledge of the English language within the extra year of instruction and extra blocks of time, time-on-task, dedicated to the ELA instruction.

This data could also be interpreted to support the Hunt (1975) and Mitchell's (1969) person-environment fit theory and the stage-environment fit theory of Eccles et al. (1993). Specifically, since Hispanic students were the majority and they outperformed the other ethnic groups, it could be argued that the optimal match was achieved for them, and the environment fit or was advantageous to the students at that particular stage of their academic development. This was evidenced by the means plot of participants' DRP scores by ethnicity displayed in Figure 4.6. Specifically, Hispanic students had the largest increase in DRP scores from pre-test to post-test ($\Delta M = 6.48$), African America

students had the second largest increase ($\Delta M = 4.37$), whereas White students' DRP scores increased the least ($\Delta M = 0.68$).

This was also evidenced in Figure 4.3 where, once again, Hispanic students had the largest increase in NYS ELA scores from pre-test to post-test. These results demonstrated Hispanic students increased ($\Delta M = 11.14$), African America students had the second largest increase ($\Delta M = 8.12$), and White students' NYS ELA scores increased the least ($\Delta M = 6.22$) once again. Since this data establishes a trend, it can perhaps also be interpreted to support Steele and Aronson's concept of stereotype threat (Steele & Aronson, 1995) in that students of similar ethnic groups performed in accordance with each other with regard to the results of Research Questions 3 and 6. This also could be argued to support the concept of stereotype threat because students, especially middle school students, want to be "one of the crowd." They don't want to stand out. The Hispanic students were achieving the greatest increases from pre- to post-test. Therefore, perhaps it could be argued that achievement was normalized within the alternative grade-retention environment for Hispanic students and thus they felt comfortable to achieve more than the other ethnic groups. The African America students were performing in the middle, so perhaps all of the students followed suit, as well, and did not attempt to over-achieve or lag behind. Finally, the same holds true for the White students who achieved the least gains on both the New York State English Language Arts and Developmental Reading Program assessments.

Limitations

There were five primary limitations to this study that related to the availability of the archival, convenience sample data from the school district under study and its

demographics. Due to the accessibility of data, the sample in this study was taken from one public school district within a small city school district in Orange County, New York. Furthermore, according to 2013 New York State Education Department Data, the population in this school district is 50% Hispanic or Latino, 25% African American, 21% White, and its student enrollment in the free and reduced meals program is 75%. Therefore, the findings of this study are not fully generalizable to other school districts with different demographics.

Second, data was collected from two different Middle Schools within the district. Two different principals and two different dean of students ran these schools. Therefore the leadership, culture, systems, protocols, and practices were not standardized.

Third, different teachers implemented the intervention. Within each middle school, one teacher taught one ELA block and another teacher taught literacy. Therefore, the intervention was implemented by four different sets of teachers, and the mode of implementation was not consistent. Also, classroom management, rapport, teaching strategies, etc., were not standardized.

Fourth, there was no standard protocol or scripted curriculum. Therefore, implementation of the intervention and, specifically, what happened within the three blocks of ELA instruction was not standardized, consistent, and was largely based on teacher experience, engagement, style of teaching, methods employed, etc.

Fifth, the students sat for repeated measures. Specifically, each sixth grade students sat for the NYS ELA and DRP sixth grade tests twice. Additionally, each student sat for the seventh grade NYS ELA and DRP twice. Therefore, perhaps the

reason the students achieved any gains was due to the fact that they had seen the test before. Although the tests were not identical, the format and content were similar.

Recommendations

If this small city school district in Orange County, New York is to significantly address the issue of preparing students with grade-level skills mastery, it must prioritize the implementation of innovative, research-based best instructional practices geared toward improving student outcomes. The results of this study, by and large, indicate that with respect to four out of the six research questions asked, this alternative grade-retention program implementing an increased time-on-task teaching strategy, did not significantly improve student achievement on NYS ELA and DRP assessments. This is consistent with current research that suggests that doing more of the same is not beneficial for students (Romero & Barbera, 2011). Furthermore, along with the amount of time spent learning with time-on-task, educators must examine the quality of learning going on during that time.

According to Romero and Barbera (2011), although the amount of time has an influence on academic performance, the quality of learning depends on students' time availability and their willingness to devote quality cognitive time to learning activities. Thus, the researchers explored the concept of quality of learning time from an online student-centered perspective.

With all stakeholders committed to promoting students' College and Career Readiness (Common Core State Standards, 2010) the following recommendations are worthy of consideration to improve student achievement:

1. Explore research-based best practices and design a scripted, standardized intervention, including a scripted curriculum and protocols to be systematically implemented within the grade-retention program. This could include, but not be limited to:
 - a. using electronic clickers to increase on-task behaviors of middle school students (Xin & Johnson, 2015),
 - b. game-based learning (Romero & Usart 2013),
 - c. quality of learning time and online, which are student-centered teaching strategies (Romero & Barbera, 2011),
 - d. physical activity and student achievement (Macdonald et al., 2014),
 - e. response to intervention and its impact on the academic performance of retained students (Keller-Margulis & Gischlar, 2014), and
 - f. the use of interdisciplinary teaching strategies through learning communities (Abbott, 2012).
2. Expand the alternative grade-retention program and study students younger and older than sixth and seventh grade.
3. Explore reasons and determine the contributing factors that would account for why sixth grade students outperformed seventh grade students on NYS ELA assessments.
4. Explore reasons and determine the contributing factors that would account for why Hispanic students outperformed African American and White students on both NYS ELA and DRP assessments.

5. Explore reasons and determine the contributing factors that would account for why African America students outperformed White students on both NYS ELA and DRP assessments.
6. Explore reasons and determine the contributing factors that would account for why White students underperformed both Hispanic and African America students on both NYS ELA and DRP assessments.

Conclusion

As evidenced by this study and other research, retaining a student within the same grade for more than one year is an intervention with minimal evidence of benefits to the retained student (Cham et al., 2015). In fact, grade retention may have a negative impact on long-term educational outcomes (García-Pérez et al., 2014). Furthermore, researchers have concluded that grade retention may cause more problems than it solves (Stipek & Lombardo 2014).

Additionally, retention rates are highest in grades 1-9. They are also highest among African America boys from economically disadvantaged environments (Warren, Hoffman, & Andrew, 2014). Frequently quoted findings associate and correlate grade retention with dropping out of high school (Eide & Goldhaber, 2005; Frey, 2005; Lamote et al., 2014; Manacorda, 2010; Rumberger, 1987; Rush & Vitale, 1994; Stearns et al., 2007). In addition, students who have been retained in the same grade for more than one year are more likely to be incarcerated, abuse drugs and alcohol, and receive welfare (Royce et al., 1983). Jimerson et al., (2002) warned that when students are retained a negative trajectory of outcomes is set in motion.

Yet, alarmed by the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983), the No Child Left Behind Act (2001), and the Common Core Learning Standards (2010), educators and researchers are left with the challenge of promoting College and Career Readiness and improving student achievement (Common Core Learning Standards: Then and Now, 2010; Powell, 2010). Although there is no loss of research that reports that grade retention is ineffective and may have negative long-term effects, there is a lack of research prescribing useful alternatives.

The significance of this study was to extend the current literature by determining the efficacy of an alternative grade-retention program utilizing an increased time-on-task teaching strategy on increasing students' ELA achievement and extending the current body of research. Based on Vygotsky's (1962) sociocultural theory this study also explored the relationship to Tajfel and Turner's social identity theory (1986); Hunt (1975) and Mitchell's (1969) person-environment fit theory; and the stage-environment fit theory of Eccles et al. (1993). Herein, social identity theory was explored in relation to Steele and Aronson's concept of stereotype threat (Steele & Aronson, 1995).

Within a quasi-experimental design, quantitative, archival data was analyzed. Data included pre- and post-test New York State English Language Arts scores and pre- and post-test Developmental Reading Program scores. The experimental group and convenience sample consisted of 108 sixth and seventh grade students who attended a retention program that offered the treatment variable of extra time-on-task with regard to ELA instruction. Repeated-measures analysis of variance tests, that is, repeated-measures ANOVA, were run to determine if changes in the English Language Arts or Developmental Reading Program scores across testing administrations depended upon

grade level, gender, and ethnicity and were due to the treatment variable of extra time-on-task with regard to ELA instruction.

Results demonstrated statistically significant difference with regard to two of the six research questions explored. Statistically significant increases in student achievement were evidenced with regard to sixth grade NYS ELA scores over seventh grade scores. Statistically significant increases were also found with regard to student achievement of Hispanic students with regard to DRP scores. Hispanic students outperformed African America students, who also outperformed White students with regard to DRP scores. No statistically significant increases were found with regard to NYS ELA scores by gender or ethnicity. However, a trend was determined because, although not statistically significant, Hispanic students, once again, outperformed African America students, who also outperformed White students with regard to NYS ELA achievement.

Recommendations for future study include, but are not limited to, exploring research-based best practices to design a scripted, standardized intervention, curriculum, and/or classroom protocol to be systematically implemented and utilized by practitioners. Such a program would include the use of electronic devices to increase on-task behaviors of middle school students (Xin & Johnson, 2015), game-based learning strategies (Romero & Usart 2013), student-centered teaching strategies (Romero & Barbera, 2011), physical activity (Macdonald et al., 2014), response to intervention (Keller-Margulis & Gischlar, 2014), and interdisciplinary teaching strategies through learning communities (Abbott, 2012).

Further study could also expand the alternative grade-retention program to include younger and older students and determine contributing factors that could be attributed to

the statistically significant increases sixth grade and Hispanic students' achievement.

Future study could also potentially identify contributing factors that would account for the underperformance of African America and White students.

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Appendix A

Table A.1

Descriptive Statistics of Students' ELA Pre-test and Post-test Scores by Grade Level

Variables	<i>n</i>	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
ELA Pre-test							
6th Grade	49	216.00	309.00	257.53	20.65	-0.07	-0.46
7th Grade	59	228.00	308.00	268.86	18.51	-0.20	-0.75
ELA Post-test							
6th Grade	49	233.00	317.00	272.69	21.34	0.00	-0.82
7th Grade	59	209.00	325.00	273.83	23.70	-0.80	1.01

Note. *N* = 108

Table A.2

Descriptive Statistics of Students' ELA Pre-test and Post-test Scores by Gender

Variables	<i>n</i>	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
ELA Pre-test							
Male	29	216.00	308.00	268.14	18.20	-0.89	1.85
Female	79	224.00	309.00	262.10	20.79	0.00	-0.82
ELA Post-test							
Male	29	244.00	310.00	279.48	17.05	-0.51	-0.41
Female	79	209.00	325.00	271.05	23.97	-0.36	0.15

Note. *N* = 108

Table A.3

Descriptive Statistics of Students' ELA Pre-test and Post-test Scores by Ethnicities

Variables	<i>n</i>	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
ELA Pre-test							
African-American	26	230.00	296.00	258.73	17.96	0.39	-0.71
Hispanic	64	216.00	309.00	265.59	21.44	-0.36	-0.35
White	18	224.00	289.00	264.28	18.59	-0.62	-0.35
ELA Post-test							
African-American	26	233.00	310.00	266.85	19.72	0.07	-0.67
Hispanic	64	209.00	325.00	276.73	21.23	-0.60	1.49
White	18	217.00	305.00	270.50	29.08	-0.61	-0.81

Note. *N* = 108

Appendix B

Table B.1

Skewness and Kurtosis Statistics of Students' ELA Pre-test and Post-test Scores by Grade

Level

Variables	<i>n</i>	Skewness	Skew Std. Error	z-skew	Kurtosis	Kurtosis Std. Error	z-kurtosis
ELA Pre-test							
6th Grade	49	-0.07	0.34	-0.21	-0.46	0.67	-0.69
7th Grade	59	-0.20	0.31	-0.65	-0.75	0.61	-1.22
ELA Post-test							
6th Grade	49	0.00	0.34	0.01	-0.82	0.67	-1.23
7th Grade	59	-0.80	0.31	-2.58	1.01	0.61	1.64

Note. *N* = 108

Table B.2

Skewness and Kurtosis Statistics of Students' ELA Pre-test and Post-test Scores by

Gender

Variables	<i>n</i>	Skewness	Skew Std. Error	z-skew	Skew Std. Error	Kurtosis	z-Kurtosis
ELA Pre-test							
Male	29	-0.89	0.43	-2.05	1.85	0.85	2.19
Female	79	0.00	0.27	0.00	-0.82	0.54	-1.53
ELA Post-test							
Male	29	-0.51	0.43	-1.18	-0.41	0.85	-0.49
Female	79	-0.36	0.27	-1.31	0.15	0.54	0.28

Note. *N* = 108

Table B.3

*Skewness and Kurtosis Statistics of Students' ELA Pre-test and Post-test Scores by**Ethnicities*

Variables	<i>n</i>	Skewness	Skew Std. Error	z-skew	Kurtosis	Kurtosis Std. Error	z-kurtosis
ELA Pre-test							
African-American	26	0.39	0.46	0.85	-0.71	0.89	-0.80
Hispanic	64	-0.36	0.30	-1.21	-0.35	0.59	-0.59
White	18	-0.62	0.54	-1.16	-0.35	1.04	-0.33
ELA Post-test							
African-American	26	0.07	0.46	0.16	-0.67	0.89	-0.76
Hispanic	64	-0.60	0.30	-2.00	1.49	0.59	2.52
White	18	-0.61	0.54	-1.14	-0.81	1.04	-0.78

Note. *N* = 108

Appendix C

Table C.1

Descriptive Statistics of Students' DRP Pre-test and Post-test Scores by Grade Level

Variables	<i>n</i>	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
DRP Pre-test							
6th Grade	48	16.00	57.00	35.71	8.39	0.30	0.08
7th Grade	52	24.00	67.00	44.81	10.14	0.20	-0.48
DRP Post-test							
6th Grade	48	18.00	60.00	41.40	8.62	-0.29	0.32
7th Grade	52	20.00	77.00	49.27	10.58	0.10	0.48

Note. *N* = 100

Table C.2

Descriptive Statistics of Students' DRP Pre-test and Post-test Scores by Gender

Variables	<i>n</i>	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
DRP Pre-test							
Male	27	28.00	55.00	39.22	7.09	0.27	-0.64
Female	73	16.00	67.00	40.89	11.34	0.29	-0.50
DRP Post-test							
Male	27	34.00	54.00	43.59	6.44	0.23	-1.37
Female	73	18.00	77.00	46.19	11.51	0.04	0.19

Note. *N* = 100

Table C.3

Descriptive Statistics of Students' DRP Pre-test and Post-test Scores by Ethnicities

Variables	<i>n</i>	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
DRP Pre-test							
African-American	24	16.00	62.00	40.00	10.17	0.08	0.85
Hispanic	60	22.00	67.00	39.10	10.32	0.85	0.41
White	16	24.00	56.00	46.13	9.41	-1.16	0.77
DRP Post-test							
African-American	24	22.00	70.00	44.38	12.07	0.18	-0.45
Hispanic	60	18.00	77.00	45.58	10.11	0.55	1.05
White	16	20.00	61.00	46.81	9.35	-1.49	3.86

Note. *N* = 100

Appendix D

Table D.1

Skewness and Kurtosis Statistics of Students' DRP Pre-test and Post-test Scores by Grade Level

Variables	<i>n</i>	Skewness	Skew Std. Error	z-skew	Kurtosis	Kurtosis Std. Error	z-kurtosis
DRP Pre-test							
6th Grade	48	0.30	0.34	0.87	0.08	0.67	0.12
7th Grade	52	0.20	0.33	0.60	-0.48	0.65	-0.73
DRP Post-test							
6th Grade	48	-0.29	0.34	-0.85	0.32	0.67	0.48
7th Grade	52	0.10	0.33	0.32	0.48	0.65	0.74

Note. *N* = 100

Table D.2

Skewness and Kurtosis Statistics of Students' DRP Pre-test and Post-test Scores by Gender

Variables	<i>n</i>	Skewness	Skew Std. Error	Skewness	Skew Std. Error	Kurtosis	Kurtosis Std. Error
DRP Pre-test							
Male	27	0.27	0.45	0.60	-0.64	0.87	-0.73
Female	73	0.29	0.28	1.01	-0.50	0.56	-0.90
DRP Posttest							
Male	27	0.23	0.45	0.51	-1.37	0.87	-1.57
Female	73	0.04	0.28	0.13	0.19	0.56	0.34

Note. *N* = 100

Table D.3

Skewness and Kurtosis Statistics of Students' DRP Pre-test and Post-test Scores by

Ethnicities

Variables	<i>n</i>	Skewness	Skew Std. Error	z-skew	Kurtosis	Kurtosis Std. Error	z-kurtosis
DRP Pre-test							
African-American	24	0.08	0.47	0.16	0.85	0.92	0.92
Hispanic	60	0.85	0.31	2.74	0.41	0.61	0.67
White	16	-1.16	0.56	-2.06	0.77	1.09	0.71
DRP Post-test							
African-American	24	0.18	0.47	0.39	-0.45	0.92	-0.49
Hispanic	60	0.55	0.31	1.79	1.05	0.61	1.73
White	16	-1.49	0.56	-2.64	3.86	1.09	3.53

Note. *N* = 100