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A Comparative Analysis of Supplemental Education Services on Academic Outcomes in Five Large Washington School Districts

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A COMPARATIVE ANALYSIS OF SUPPLEMENTAL EDUCATION SERVICES ON ACADEMIC OUTCOMES IN FIVE LARGE WASHINGTON SCHOOL DISTRICTS

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Abstract

This study compared two groups of Title I schools to determine the impact on student achievement when given the opportunity to receive supplemental educational services. Two groups of schools from the five school districts were selected for this study. The study employed a causal-comparative design using post hoc data from two administrations of the Washington Measurement of Student Progress assessment in Reading and Mathematics. The selected two groups of Title I schools, consisted of the participating Title I schools (those schools receiving SES support), and the non-participating Title I schools (those schools not receiving SES support). To provide descriptive information on the key variables as well as to determine whether or not the schools were comparable, a series of independent samples t-test and Pearson correlations were conducted. To address the research questions, a series of hierarchical regressions were utilized to analyze the differences in student achievement among Title I schools, including their subgroups. The variables *grade level, gender, ethnicity and socio-economic status* and *SES status* were compared across schools. The independent and dependent variables were measured by using the Grade 3-5 Reading and Mathematics school aggregate data derived from the Measurement of Student Progress (MSP). In terms of supplemental educational services, SES status, the results indicated that the addition of SES status was an influence on school performance on only three of the sixteen hierarchical multiple regression models, consisting of academic outcomes: 2011 Grade 5 female math scores, 2011 Grade 3 low income math scores, and 2011 Grade 5 low income reading scores. Each of the three were negative predictors where the betas were negative, meaning that the Title I schools that did not receive supplemental educational services outperformed the Title I Schools that did receive supplemental educational services.

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Dedication

To Jennifer--Words cannot express my gratitude for the support that you have provided during this process and, for that matter, any and every endeavor I have taken on. Know that without you, none of this would have been possible.

To Alyvia and Quincy--Your hopes and dreams continue to fuel my fire and drive me to be the best Dad I can be. Thank you for always being patient and understanding.

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CHAPTER 1

INTRODUCTION

Background

As early 1778, Adam Smith argued that parents are in the best position to decide how their children should be educated. He championed that states should give parents money to hire suitable teachers. In 1798, Thomas Paine voiced a view similar to Smith's, suggesting that the states provide poor families with the money needed to secure a basic education for their children. In 1954, in the landmark court case *Brown v. Board of Education of Topeka,* the Court declared state laws establishing separate public schools for Black and White students to be unconstitutional. This was one of the first opportunities that by law Black families were given equal choice in their child's educational decisions. As the genesis of the struggle for an equal education for all students, *Brown v. Board of Education of Topeka* paved the way for the federal Elementary and Secondary Education Act of 1965 (ESEA). ESEA was developed by President Lyndon Johnson as a central component of the Great Society and committed the national government to the defense of civil rights and the promotion of equal opportunity in education (McGuinn, 2010). As part of ESEA, President Johnson put into place the concept that ESEA would be reauthorized minimally every seven years. Within one of these reauthorization periods, No Child Left Behind (NCLB) was developed by President Bush as a way to close the achievement gap. It also provided parents of struggling students the opportunity to use federal dollars to enhance their children's educational experience in the form of supplemental educational services.

NCLB has impacted schools and school districts that have failed to meet the standards of Adequate Yearly Progress (AYP) for three or more consecutive years by requiring the provision of supplemental educational services to eligible students attending Title 1 schools (Burch, 2007).

As a result of the failure to meet AYP, Washington State school districts had to provide funds for eligible students attending Title 1 schools to enroll into supplemental educational services programs. However, minimal research has been conducted to determine if, or to what extent, supplemental educational services affect student achievement. This lack of research impacts both parents and school districts, as their supplemental educational service choices are not data driven. Burch (2007) stated that research has failed to conclusively show what has worked within SES programs and as such has failed to show which services would lead to positive outcomes. Today, minimal evidence exists pertaining to the content of SES programs and student achievement. Current information pertaining to student learning is described in broad terms by the SES providers on their websites and in marketing materials. It is unclear if the use of supplemental services is helping to close the achievement gap or if it even ensures that student achievement will improve (Hursh, 2007).

According to the Office of Superintendent of Public Instruction (2010), 78% percent of Washington school districts and 85% of its schools met the Adequate Yearly Progress (AYP) standards required by the annual federal evaluation system. Of the 265 school districts in 2010, 78%, or 62 districts, met AYP standards compared to 81%, or 100 districts, the previous year. The cause for this decline was apparently due to the substantial increase in AYP standards. The 2010 ratings placed a 73% passing standard on total students and student groups for reading on the Measurement of Student Progress tests (MSP). The MSP is taken by Grades 3-8 in order to fulfill AYP requirements as outlined in the NCLB law. A 67% passing standard was placed on the mathematics MSP in order to receive the meets-AYP rating. The 2008-2009 academic year was assigned a passing standard of 58% for mathematics and 67% for reading.

Table 1

2010 Grade 4 and 10 Reading and Mathematics Scores

				Achievement Gap	
	White	Black	Hispanic	White-Black	White-Hispanic
Grade 4 Reading	74	51	46	23	28
Grade 4 Mathematics	60	32	33	28	27
Grade 10 Reading	84	66	63	18	21
Grade 10 Math	47	19	20	28	27

Additionally, Washington's achievement gap has continued to widen. Table 1 contains the 2010 MSP 4th and 10th grade MSP scores for Reading and Mathematics along with the score differences between Black and White and Hispanic and White subgroups. According to the Achievement Gap Oversight and Accountability Committee Report published in 2010, it is estimated that Washington would close its achievement gap by the following years:

Table 2

N*umber of Years to Close the Achievement Gap as of 2010*

	Black		Hispanic	
	Year	# Yrs.	Year	# Yrs.
Grade 4 Reading	2022	12	46	23
Grade 4 Mathematics	2042	32	33	28
Grade 10 Reading	2017	7	63	18
Grade 10 Mathematics	2064	54	20	28

To date, it is not clearly discernible how participation in supplemental educational services impacts the achievement of students attending schools in Washington State. A study by Saifer and Speth (2007) found that there is room for improvement when it comes to tracking, evaluating and monitoring SES in the State of Washington. The researcher

attempted to provide answers for the problems addressed here by answering the overarching question: Does providing Title I schools with supplemental educational services affect student achievement when compared to Title I schools that are not offered supplemental educational services?

Statement of the Problem

Saifer and Speth (2007) described the initial efforts related to the implementation of SES programs. They identified information gaps and areas of further inquiry as well as delineating concerns and challenges for the state of Washington. Even though NCLB regulations clearly state that SES providers should be removed from the list if they have not (1) increased students' achievement for two consecutive years or (2) provided services consistent with applicable federal, state, and local health, safety, and civil rights requirements (Ross and Potter 2006), a review of the literature has shown that in the state of Washington, not one provider has been removed to date for not increasing student achievement (Saifer & Speth, 2007). Programmatic noncompliance has been the only reason that a provider was removed in the state of Washington thus far.

Since current research leaves many questions about SES unanswered, we are unable to shed light on how SES might affect student achievement.

Purpose of the Study

The purpose of this non-experimental causal-comparative study was to compare two groups of Title I schools in five diverse school districts in Washington State to determine the impact that supplemental educational services had on student achievement. The study helped to determine the impact of the independent variable, school participation in supplemental educational services, on the dependent variable, academic outcomes. Student achievement was analyzed using ex post facto school aggregate data derived from the Mastery of Student

Performance (MSP) test, the Washington State Grades 3-5 state assessment, from two consecutive years (2010 and 2011). The population of this study consisted of approximately 478 Title I elementary public schools in Washington State with 205,599 students. The sample for this study consisted of 67 Title I elementary schools in five diverse school districts in Washington State: Seattle, Spokane, Tacoma, Vancouver, and Yakima. Each of the school districts was selected as the result of its level of supplemental educational services participation as determined by the percentage of students eligible versus the actual number of students that participated.

Research Questions

Overarching Research Question

To what extent, if any, do Title I schools benefit from supplemental educational services as determined by the Washington State Measurement of Student Progress scale score means (Grade 3, 4, and 5) in both Reading and Mathematics when controlling for past performance?

Subsidiary Research Question 1

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with grade levels?

Subsidiary Research Question 2

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with gender?

Subsidiary Question 3

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with income levels?

Significance of the Study

The gap in the knowledge in terms of supplemental educational services consists of studies that have truly examined the academic impact of supplemental educational services in the state of Washington (Saifer & Speth, 2007). At the time of this study, Washington State was one of two states (Oklahoma was the other) that must obey the laws of NCLB (Center on Education Policy, 2015). Broadly, this study contributed to the emphasis on providing additional support to improve student achievement. The results of this study can be particularly useful to district administrators and principals who are investigating the effects and cost benefits of providing additional support. Parents can benefit from this study, as it may help them make educated decision in regards to SES. Specifically, the results from this study could inform Washington administrators and educators regarding the efficacy of the strategy of providing supplemental educational services. These results will hold implications for future reform efforts that the district or state may pursue.

Conceptual Framework

In 2014 Lauer et al. showed that out-of-school time (OST) tutoring has been a staple intervention for K-12 students in need of extra academic assistance. Lauer et al. (2006) conducted a meta-analysis of 35 peer-reviewed, published studies to estimate effect sizes (e.g., gain scores) of OST tutoring programs. They concluded that OST tutoring can have positive effects on student achievement (in relation to at-risk students who do not participate), and the

effect sizes are larger for programs delivering more than 45 hours of tutoring (but smaller for those longest in duration). It was the researcher's intent to test Lauer's findings that OST tutoring has a positive effect on student achievement by conducting this study in order to see if supplemental educational services, an OST tutoring program, yields similar results.

Summary of Methodology

The objective of this study was to compare two groups of Title I schools to determine the impact on student achievement when given the opportunity to receive supplemental educational services. Two groups of schools from the five school districts were selected for this study. The study employed a causal-comparative design using post hoc data from two administrations of Washington Measurement of Student Progress assessment in Reading and Mathematics. The selected two groups of Title I schools consisted of the participating Title I schools (those schools receiving SES support), and the non-participating Title I schools (those schools not receiving SES support). To provide descriptive information on the key variables as well as to determine whether or not the schools were comparable, a series of independent samples *t*-test and Pearson correlations were conducted. To address the research questions, a series of hierarchical regressions were utilized to analyze the differences in student achievement among Title I schools including their subgroups. The variables *grade level, gender, ethnicity and socioeconomic status,* and *SES status* were compared across schools. The independent and dependent variables were measured by using the Grades 3-5 Reading and Math school aggregate data derived from the Measurement of Student Progress (MSP).

Limitations

The researcher chose to use a causal-comparative design versus an experimental design in this study. In a causal-comparative design, individuals are already (ex post facto) in groups before the study begins, whereas in an experimental design, individuals are randomly assigned to groups (e.g., SES status) (Gay et al., 2009). As a result of using a causal-comparative design in this study, there was a lack of randomization of subjects, thus restricting the generalizability of the study's findings. The researcher wanted to use student level supplemental educational services data from MSP scores. Unfortunately, the schools and the districts were not required by law to track individual student progress; as a result, the researcher chose to use school aggregate data.

Definition of Terms

The following definitions were used throughout this study:

Adequate Yearly Progress (AYP): the measure by which schools, districts, and states are held accountable for student performance under Title I of the No Child Left Behind Act of 2001 (NCLB), the current version of the Elementary and Secondary Education Act.

Low-income Students: students who qualify for free/reduced lunch status.

Measurement of Student Progress (MSP): a criterion-referenced test given to students in Grades 3-5 to measure student progress in reading, writing, mathematics, and science. The assessments were designed to measure proficiency in the state learning goals.

No Child Left Behind (NCLB): federal legislation that enacts the theories of standards-based education reform. NCLB ensures that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic

assessments.

Race to the Top (RTT): is a $4.35 billion United States Department of Education grant created to spur innovation and reforms in state and local district K-12 education.

Supplemental Educational Services (SES): tutoring and other supplemental academic enrichment services that are, in addition to instruction, provided during the school day and are of high quality, research-based, and specifically designed to increase a student's academic achievement on the state's academic assessments and attain proficiency in meeting the state's learning standards.

Title I: provides funding for high-poverty schools to help students who are behind academically or at risk of falling behind.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

The purpose of this non-experimental causal-comparative study is to compare two groups of Title I schools from five diverse school districts in Washington State to determine the impact on student achievement when given the opportunity to receive supplemental educational services. The study helped to determine the impact of the independent variable, school participation in supplemental educational services on the dependent variable, student achievement. Student achievement was analyzed by using ex post facto data derived from the Measurement of Student Progress (MSP), the Washington State Grade 3-8 state assessment tests. The population of this study consisted of approximately 478 Title I elementary public schools in Washington State with 205,599 students. The sample of this study consisted of 67 Title I elementary schools in five diverse school districts in Washington State: Seattle, Spokane, Tacoma, Vancouver, and Yakima. Each of the schools districts was selected as the result of its level of supplemental educational services participation.

The review of the literature is divided into the following sections: (1) history of supplemental educational services, (2) history of federal policy impacting supplemental education services, (3) effects of supplemental educational services, (4) theoretical framework and (5) synthesis of research.

The search for literature related to the focus of this study was completed by using Google Scholar, Educational Resource Information Center (ERIC) databases, the EBSCO database, ED.gov, and OSPI databases. The literature research was refined using key terms such as *RTT, Race to the Top, NCLB, supplemental education services, SES implementation and*

monitoring, SEAs, LEAs, and *student achievement, Elementary and Secondary Education Act, ESEA flexibility, ESEA,* and *NCLB waiver.*

History of Supplemental Educational Services

Supplemental educational services was created in 2002 as a result of the Republican Party continually pushing for school vouchers. Advocating for school vouchers has been a key piece of the Republican platform in education since 1954 (Cross, 2004, Peterson, 2005, DeBray-Pelot & McGuinn 2009). Republicans believed that with school vouchers, the private market would be the solution to the ills that plagued the public education system. (DeBray-Pelot & McGuinn 2009) The idea was that market competition would create a dynamic where educational enterprises would produce programs that would ensure student achievement. While the Republicans were touting the benefits of the private market, the Democratic Party's stance was the opposite. Democrats did not want school vouchers because they viewed it as educational dollars being pulled from the public schools. While NCLB was being crafted, the Republicans tried unsuccessfully to have school vouchers become a sanction for schools not meeting AYP for three consecutive years (Cross 2004, Peterson 2005). In the end, the Democrats worried that the Republican-led house and senate would possibly push for vouchers; therefore, they compromised, agreeing to provide public school choice and supplemental educational services.

If a school does not make AYP for three consecutive years, it remains in school-improvement status, and the district then has to offer all low-income families in Title I schools supplemental educational services, such as tutoring or remedial classes. These services can be provided through a state-approved provider, either public or private.

In the infancy stages of SES, schools, districts, and states were slow in their implementation (Burch, 2007, Ascher, 2006, Heinrich et al., 2010). District- and state-level

administrators viewed SES as taking away 20% of their federal dollars that had been allotted for previously established programs and staff (Saifer & Speth, 2007). They were not against providing students additional assistance, but they were against the federal government taking dollars away instead of providing additional dollars to support students (Burch et al., 2007). District and state officials also were not pleased with the fact that teachers had to be highly qualified under NCLB, but tutors did not have to go through a qualification process in order to become an SES tutor.

The funds for SES were generated from the Title I funds that the school districts received from the federal government (USDOE, 2014). The districts were required to hold back 20% of their funds for either school choice or supplemental services. Specifically, 5% was to be initially held back for transportation for school choice, and 5% was to be allocated for SES. The remaining 10% could have been used for either transportation and/or SES. In a case when there were not enough funds to meet the needs of all the low income, low performing students, the districts were able to prioritize which school of lowest-achieving children would receive services. Then, based on the numbers of students and the amount of dollars generated from the 20%, the allocation of dollars per student for tutoring was determined, and the number of tutoring hours each student could receive was finally determined by the amount that the SES providers charged per hour. NCLB gave the SES providers the right to determine the rate that was charged per hour of tutoring. This was done without any regulations in terms of how much one provider could charge. This led to providers charging higher rates, which in turn lowered the potential number of hours that a student could use.

The states' role in the implementation of SES consisted of (1) approving potential SES providers and (2) evaluating and monitoring those approved providers (USDOE, 2014).

According to NCLB, states were to approve and provide the school districts and parents with an approved provider list from which the parents could select for services. The parents were not required to pay anything for the services provided and the services were to be high quality, research-based, and consistent with the state's academic content standards. States were also to monitor each approved provider. States were required to evaluate provider effectiveness after at least two years, but they could choose to monitor providers more frequently (Saifer & Speth, 2007). NCLB states that schools must remove providers from the approved list if they fail to (1) increase students' achievement for two consecutive years or (2) fail to provide services consistent with applicable federal, state, and local health, safety, and civil rights requirements (Ross & Potter, 2006). According to NCLB regulations, states were to monitor and evaluate each provider to ensure that tutoring led to improvements in academic achievement, but this also added an entirely new aspect to educational systems in terms of the actual monitoring which schools would not only have to provide but also fund.

The Saifer and Speth (2007) study found that there was room for improvement when it came to the evaluating and monitoring SES. Even though NCLB regulations clearly state that providers should be removed from the list if they have not (1) increased students' achievement for two consecutive years or (2) provided services consistent with applicable federal, state, and local health, safety, and civil rights requirements (Ross and Potter 2006), a review of the literature has shown that in the state of Washington, not one provider has been removed to date for not increasing student achievement. Programmatic noncompliance is the only reason that a provider was removed in the state of Washington. Washington State started their SES during the 2002-2003 school year. The number of students receiving services remained relatively low until 2005-2006, which is also the year that state assigned a Title I person to oversee the program

(Saifer & Speth, 2007). From that year on, the state saw its numbers doubled or even tripled until the 2011-2012 school years; 2012 was the last year before Washington State received a waiver from NCLB.

Table 3

Washington Students Receiving Services 2004-2012

Academic Year	Total State Enrollment	Number of Title I Students Eligible for SES	Number of Students Receiving SES	Percent of Eligible Students Receiving SES	Dollar amount spent on SES by WA State
2002-03	1,015,986	15,401	252	1.6	-
2003-04	1,021,497	15,401	252	1.6	-
2004-05	1,021,502	10,529	136	1.3	-
2005-06	1,013,189	21,825	363	1.7	-
2006-07	1,026,682	30,340	348	1.1	-
2007-08	1,031,846	36,729	940	2.6	$878,105
2008-09	1,038,620	49,573	2,258	4.6	$3,224,721
2009-10	1,029,284	79,626	7,905	9.9	$10,685,779
2010-11	1,029,284	111,436	12,817	11.5	$15,196,176
2011-12	1,043,536	134,311	16,972	24.4	$18,217,882

Note: A dash (-) indicates that the data are not available.

History of Federal Policy Impacting Supplemental Education Services

Federal legislation in dealing with education provided funding or land for schools and special programs (Standerfer, 2006). It was careful, however, not to intrude on states' rights to make decisions on curriculum as well as on the general operations of schools, adhering to the 10th amendment (Barolsky, 2007). In order to fully understand just how long this has affected the educational system in its attempt to see all children given the education that they need and desire, we need to take a look at *Plessy v. Ferguson* (1892). The Plessy decision set the precedent that "separate" facilities for Blacks and Whites were constitutional as long as they were "equal." The "separate but equal" doctrine quickly extended covering many other areas of public life, including restaurants, theaters, and restrooms. The judge ruled that as long as Blacks were given

the same as Whites, everything was all right per the law; this provided the illusion of equal. History has proven that it was definitely separate, but not equal. Blacks were subjected to this law until the next landmark ruling from *Brown v. Board of Education*.

In 1954, in the *Brown v. Board of Education of Topeka* decision, the concept of "separate but equal" would be struck down. *Brown v. Board of Education of Topeka* was a landmark decision. "In *Brown v. Board of Education*, the Supreme Court finally addressed the 'separate' prong of Plessy head on, unanimously ruling that 'separate educational facilities are inherently unequal'" (Mercian, 2010). As we have seen, the Court arrived at this conclusion only after firmly establishing that states could not force Black students to endure unequal conditions. Noting that education is perhaps the most important function of state and local governments, the Court reiterated that public education should be provided to all on equal terms.

Coming off the heels of the *Brown v. Board of Education* ruling and the Civil Rights Act, President Johnson put into place a set of initiatives to "not only relieve the symptoms of poverty, but to cure it and, above all, to prevent it." President Johnson's administration passed four pieces of legislation; (1) The Social Security Amendments of 1965, (2) The Food Stamp Act of 1964, (3) The Economic Opportunity Act of 1964, which created the Head Start program, and (4) The Elementary and Secondary Education Act of 1965.

The ESEA allowed for federal funds to be provided to those schools that had extra needs because of the socioeconomic status of their students. There appeared to be the promise that the federal role in education would lessen the achievement gap between students of different backgrounds without intruding on those schools that were doing well without federal mandates. The increased federal funding, however, birthed a desire for accountability. As a proposed tool for defining success during the late 1960s, the National Assessment of Educational Progress

(NAEP) test was introduced. NAEP was designed to assess student progress. Scores were reported by region with the intent only of gauging how schools were doing in general without making comparisons between specific states or schools. A decade of school reform followed during the 1970s that included the passage of special education legislation; however, ESEA did not deliver the anticipated corrections to the achievement gap. While it was ambitious at best, it failed to take into consideration the true socioeconomics of overall communities. At this point in the process, the testing was based on basic learning and retention without any regard to parental or community support systems. The flaw was that it was too broad.

The 1980s were marked by the National Commission on Excellence in Educations report. *A Nation at Risk* painted a picture of U.S. schools that assumed they were failing and that if corrective measures were not implemented into the educational system, the nation would not remain economically competitive in the global market. This report was held up as an example that money was not the answer to improving schools, and federal funding for elementary and secondary education declined. Between 1980 and 1985 educational funding dropped by 21% according to the National Center for Education Statistics.

The then U.S. Secretary of Education, William J. Bennett, commissioned the Alexander-James study group in the mid-1980s. This group was tasked with making suggestions on how NAEP testing could be expanded. His intent was to allow comparison between states' results in order to increase accountability for schools. This concept was also flawed due to the fact that, once again, the testing would not take into account parental and community support as well as the socioeconomic challenges of some states.

The 1989 education summit held by the National Governors' Association during the term of President George H. W. Bush led to a commitment to develop content standards at the

national level for each core subject area. President Bill Clinton continued this in the 1990s with the Goals 2000 legislation and the reauthorization of ESEA as the Improving America's Schools Act. This mandated that states create academic standards in core areas that would be assessed.

The No Child Left Behind Act (NCLB) is the latest reauthorization of ESEA. States were required to have students demonstrate proficiency in state academic standards through a state assessment. Each state was also required to have a system by which their progress can be measured. All public schools were assessed and expected to make progress in having all their students meet proficiency by the state academic standards by the 2013-2014 school year. Teacher quality standards have now also been added to the legislation. Educators did not respond well to this addition since, in the past, these standards have been handled on the state level and through accreditation agencies. Currently, states must report to the general public the progress their schools are making toward meeting federal mandates for adequate yearly progress and employing highly qualified teachers. It is important to note that these are unfunded mandates which affect the educational system across the board since severe consequences result for schools that are not meeting standards.

In 2009, President Barack Obama ushered in a new era, going from a period of sanctions with NCLB to a period of incentives with Race to the Top (RTT) grants in order to drive reform. According to McGuinn (2010), there appears to be three central elements to the philosophy behind RTT: shifting the federal role from a focus on means to a focus on ends ("tight on the goals but loose on the means"), shifting from sanctions (sticks) to incentives (carrots) as a way of motivating state reform, and shifting the Department of Education away from being a compliance-monitoring organization to being one focused on capacity building and innovation.

Illustrating the information below in Figure 1, one can see that there has been a progression from the federal government not requiring standards, assessments, or sanctions in the Reagan era to mandating standards, assessments, and sanctions with the Bush's NCLB, then Obama potentially providing relief from NCLB with RTT.

Source: (Redalevige, 2003 & Patrick McGuinn, 2010)									
	STANDARDS			ASSESSMENT			SANCTIONS		
	Established?	Deadline for proficiency?	Subgroups tracked?	State Testing?	High-Stakes National?	Adequate Yearly Progress?	School Improvement plans	Restructuring of Schools?	Public school choice?
Reagan & Bush (1981-1992)	Yes; voluntary standards: math (1989, Cross, 103)	No	No	No	Proposed NAEP as benchmark (not passed)	No	No	No	Proposed tuition tax credits and Title I vouchers (not passed)
103rd Congress (1993-94)	Yes, for Title I students	No	No	Yes; 3 tests between grades 3-12	No	Yes, but vague	Yes	No	No
106th Congress (1999-2000)	Proposed for all students (only passed the House)	Proposed 10 years (only passed the House)	Proposed (only passed the House)	Yes; 3 tests	Proposed voluntary (implementation banned)	Proposed (only passed House)	Proposed (only passed House)	Proposed (only passed House)	Proposed (not passed)
GW Bush campaign (2000)	Yes	No	Partial	Yes; annual tests for grades 3-8	Yes, NAEP as benchmark	Yes	Yes	Yes	Yes
NCLB (2001)	Yes; mandatory for all students	Yes, 12 years	Yes; race, LEP, disability, Title I	Yes; annual tests for grades 3-8 and on in 10 - 12	Partial; NAEP required but not linked to funding	Yes	Yes	Yes	Partial, plus supplemental services vouchers
RTTT (2012)	Yes;Voluntary	yes	yes	yes	Partial; NAEP required but not linked to funding	No*	yes	yes	No

Figure 1. *Progression of federal governments of standards, assessments, and sanctions.*

In March 2010, the Obama Administration was unsuccessful in his attempt to reauthorize ESEA. Because Congress would not act to reauthorize ESEA, the administration moved forward to offer states flexibility within the law—as authorized by provisions in the law itself—to pursue comprehensive plans to improve educational outcomes for all students, close achievement gaps, and improve the quality of teaching. This ESEA flexibility waivers allows states, schools, and teachers the opportunity to develop and implement effective ways to give children the skills they need to compete for the jobs of the future, while maintaining a high bar for the success of all students (USDOE, 2014).

Washington submitted its waiver request on February 28, 2012 (USDOE, 2012). The U.S. Department of Education approved Washington's waiver request on July 6, 2012 (USDOE,

2012). Approximately a year later, the U.S. Department of Education issued a letter to Washington indicating that the state's waiver from the No Child Left Behind Act was on "high-risk status" and might not be renewed in the 2014-2015 school year (OSPI, 2014). Washington was placed on “high-risk status” due to the fact that their teacher evaluation system did not tie student state assessment scores to teacher evaluation (*Education Week*, 2013). On December 2, 2014, the Washington State Legislature announced it would address issues regarding the state’s evaluation system to prevent the loss of its wavier (*News Tribune*, 2013). Secretary Arne Duncan revoked Washington’s waiver on April 24, 2014, due to the state not addressing the state’s teacher evaluation system (USDOE, 2014). As a result, Washington State had to return to the laws of NCLB. With this said, the researcher reviewed the literature of NCLB with more rigor.

NCLB was originally created in an effort to close the achievement gap. Whereas President Johnson’s intent with the implementation of ESEA was to end the “War on Poverty” by providing schools with additional funding to support low SES students, NCLB could be viewed as the teeth of the reauthorization. NCLB was also created in order to provide accountability. This approach put all states on notice that if their students did not make “adequate yearly progress” (AYP), they would be subject to sanctions. Although many politicians believed that NCLB would be beneficial, most educators saw it as a way to widen the gap even more.

The NCLB sanctions for schools that do not meet their state-defined AYP included a significant loss in funding. A Title I school that has not achieved AYP for two consecutive school years would be identified by the district (before the beginning of the next school year) as needing improvement. School officials would then have to develop a two-year plan to turn the

results around. The local education agency was then responsible for ensuring that the school received needed technical assistance as it developed and implemented its improvement plan. It is important to note that this process was, for all intents and purposes, an unfunded mandate. Education systems would have to find the funding to implement these changes without further federal assistance.

The effects of NCLB vary depending on which report and/or studies one chooses to research. One of those studies by Jennings and Rentner (2006) paint an optimistic picture.

Effects of NCLB (Jennings & Rentner, 2006)

1. State and district officials reported that student achievement on state tests was rising.
2. Schools spent more time on reading and math but at the expense of other subjects.
3. Schools paid much more attention to the alignment of curriculum and instruction.
4. Low-performing schools were undergoing makeovers rather than radical restructuring.
5. Schools and teachers made considerable progress in demonstrating that teachers meet the law's academic qualifications.
6. Students took a lot more tests.
7. Schools paid more attention to achievement gaps and learning of students.
8. The percentage of schools on state "needs improvement" lists had been steady yet not growing.
9. The federal government played a bigger role in education
10. NCLB requirements meant that state governments and school districts expanded roles in school operations.

In the Key Findings NCLB Study by Lee and Orfield (2006), however, the findings are less

optimistic:

- NCLB did not have a significant impact on improving reading and math achievement.
- Continuation of the current trend left the nation far behind the NCLB target of 100% proficiency by 2014.
- Only 24% to 34% of students will meet the NAEP proficiency target in reading and 29% to 64% meeting that math proficiency target by 2014.
- NCLB has not helped the nation and states significantly narrow the achievement gap.
- The racial and socioeconomic achievement gap in the NAEP reading and math achievement persists after NCLB.
- The study predicts that by 2014, less than 25% of poor and Black students will achieve NAEP proficiency in reading, and less than 50% will achieve proficiency in math.
- NCLB's attempt to scale up the alleged success of states that adopted test-driven accountability policy prior to NCLB, so-called "first generation accountability states" did not work.
- NCLB's reliance on state assessment as the basis of school accountability is misleading since state-administered tests tend to significantly inflate proficiency levels and proficiency gains as well as deflate racial and social achievement gaps in the states.
- The higher the stakes of state assessments, the greater the discrepancies between NAEP and state assessment results.

As is evident through the findings of these two studies, the NCLB was optimistic in ambition but fell short upon implementation. The flaws were apparent to educators, but the

politics of NCLB did not allow for the proper vetting of the program's effectiveness by those who were expected to oversee it: the school districts.

After all of the studies and further consideration by educators, it would appear that the NCLB program was not as effective as many had hoped. The issues that were being discovered ranged from the program having no impact to the program sending mixed messages about how well U.S. students were faring. Unfortunately, as of December 2014, Washington State educators, parents, and students must try to function as best they can under the NCLB laws while still not digressing from the progress made under RTT.

Effects of Supplemental Educational Services

According to Burch (2007), it is unclear how SES might affect academic achievement because existing research leaves many questions unanswered. Years later there are still several states that have spent many federal dollars on SES, while others have not. According to the U.S. Department of Education, the following was spent by the nation and Washington State on SES:

Table 4

Federal Dollars Spent on SES by Nation and State

School Year	National	Washington
2009 – 2010	908.6	10.7
2010 – 2011	965.9	15.2
2011 – 2012	2307.5	18.2

In millions

The U.S. Department of Education has not yet been able to determine if the efforts of those states paying out more per student are making a difference in academic achievement. The following studies provide the key findings from relevant studies in this area.

One study of the Minneapolis Public Schools (Heistad, 2007) used the data from students (1) who were from Grades 3-7 in 2006- 2007, (2) who were eligible for SES, and (3) with test scores on both the Northwest Achievement Level Test (NALT) or Computerized Achievement

Level Test (CALT) in Fall 2006. The Spring Minnesota Comprehensive Assessments – Series II (MCA-II) or Mathematics Test for English Language Learners (MTELL) in Spring 2007 were also utilized. Based on the selection criteria, 3,688 students were included in the sample for the reading analyses, and 3,647 students were included in the sample for the math analyses.

The findings showed that there were no significant differences on both reading and math achievement between students who received SES and those who were eligible in SES but did not receive the services. In addition, results of the value-added analyses showed that SES in the Minnesota Public Schools (MPS) did not significantly improve reading and math achievement for students who received the services. In addition, there was a great variation in the amount charged by individual SES providers, ranging from $15 to $70 an hour. This study showed that there was no indication that a higher hourly cost charged by SES providers resulted in greater academic achievement. The only group of students who made significant improvement were students in the highest achievement category (i.e., students whose prior achievement level was above the 75th percentile) who participated in SES math programs (Heistad, 2007).

In 2008 Ross et al. conducted a statewide evaluation study in Tennessee to determine SES impact on student achievement. The study examined how students served by SES providers performed compared to other students in their schools and grade levels. This study took into consideration Reading/Language Arts and mathematics, using value-added methodology, and statistical analyses of achievement data controlled for both student ability and teacher effects in two alternative models. The researchers used the Tennessee Comprehensive Assessment Program (TCAP), a criterion-referenced multiple-choice test (CRT) that was administered each spring. A total of 248 students who received tutoring in math and 335 who received tutoring in

Reading/Language Arts (R/LA) in Tennessee were included in the analyses. Achievement results from both analytical models yielded mostly small and non-significant provider effects.

A third study by Munoz et al. (2008) evaluated a large urban district in Kentucky to determine SES impact on student achievement. The design consisted of a descriptive study of SES provider perceptions from involved stakeholders and a quasi-experimental design in which each SES participant was matched to a highly similar control student. The SES provider data were combined with databases containing student demographics, formative assessment results, and state assessment results for students in Grades 2–11. Of the 4,515 students who were eligible to receive SES services, 3,208 had valid state assessment data in reading or mathematics. Of the 2,006 students that actually received services, 1,202 had applied for, but did not participate in, SES. The achievement measure employed was the Kentucky Core Content Test (KCCT) in Reading and Mathematics, with each subtest consisting of 24 multiple choice and six constructed response items. The diagnostic test used for matching SES and control students on prior achievement and as the pretest covariate was the Predictive Assessment Series (PAS), which consisted of 24 multiple-choice items. The findings showed non-significant effects in outcomes, as well as quality concerns in processes that are claimed as a core provision within the NCLB legislation. Results indicated that achievement results on the Kentucky Core Content Test in Reading and Mathematics were not significantly superior for the SES participants relative to matched control students.

In 2008 a Springer et al. study examined the effect of SES on student test score gains and whether particular subgroups of students benefit more from NCLB tutoring services. The sample included information on students enrolled in Grades 3-8 in 121 elementary and middle schools over a five-year period, the 2003-2004 to 2007-2008 school years. A total of 17 elementary and

middle schools were required to offer SES at some point during the period under study, and 9,861 student-year pairings in the sample were eligible to receive SES. They found significant and positive average effects of SES on test score gains in mathematics. The results in reading tended to be insignificant. The SES tutoring did not appear to disproportionately benefit a particular racial/ethnic group or ability level. They found that female students and students with disabilities appeared to benefit more from participating in SES.

In one of the largest SES studies commissioned by United States Department of Education, Stullich et al. (2009), the study examined student-level assessment data in seven large urban school districts in order to examine the relationship between participation in the Title I and supplemental educational services and student achievement. The analysis used a quasi-experimental fixed-effects model that compared the achievement trajectories of individual students before and after participating with those of nonparticipating students. Across the sample of seven districts, student participants in supplemental educational services experienced gains in achievement in both reading and mathematics that were greater than the gains for nonparticipating students. Black students, Hispanic students, and students with disabilities all showed positive achievement effects from participating in supplemental educational services. Looking at the districts individually, positive effects were found in five of the seven districts; the remaining two districts had relatively small sample sizes.

The study also interpreted the magnitude of the achievement gains, using three potential benchmarks: the gain in student achievement of an additional year of learning, the size of the achievement gap between minority and White students, and the gains obtained by other education interventions such as class size reduction or comprehensive school reform. Compared with the benchmarks, the reading and math gains from participating in Title I supplemental

educational services during one school year was interpreted as (a) approximately equivalent to 1.7 to 2.4 months of additional classroom instruction for a fourth-grade student and 2.5 to 2.7 months of additional classroom instruction for a seventh-grade student, (b) a one-tenth to one-seventh decrease in the gap between minority and White students, and (c) a small effect relative to class size reduction but equivalent to the lower-bound of effects of comprehensive school reform or of out-of-school programs.

As part of a pilot in 2005 the U.S. Department of Education granted five districts identified for improvement or corrective action permission to serve as SES providers. Boston and Chicago received waivers starting in the 2005-2006 school year. Anchorage and Hillsborough received waivers starting in the 2006-2007 school year, and Charlotte-Mecklenburg received a waiver starting in the 2008-2009 school year. A study (Berger et al., 2011) was conducted to determine whether SES participation for students served by the district providers was associated with achievement gains that were at least comparable with those of students served by non-district providers. Each district provided student-level data on SES: whether the student was eligible and whether the student participated, and with which providers, in what subjects, and for how many hours they participated. Districts also supplied data on student achievement and student characteristics (e.g., race/ethnicity, disability status, and grade level). All the data were provided for multiple academic years. There were few demographic or academic differences between students served by district providers and students served by non-district providers. Students in three of the five districts demonstrated statistically significantly larger mathematics achievement gains during periods of SES participation than during periods of nonparticipation. In addition, in two districts, SES participation was associated with statistically significant reading gains. Averaged across the five districts, the overall association between SES

participation and achievement gains was statistically significant in both mathematics and reading, relative to nonparticipation. Across the five districts, the achievement gains associated with SES participation relative to non-participation did not differ for district and non-district providers for either mathematics or reading.

Another study (Deke et al., 2012) sponsored by the Institute of Education Sciences (IES) at the U.S. Department of Education and conducted by Mathematica Policy Research (Mathematica) that used a regression discontinuity (RD) design to assess the potential benefits of offering SES in districts that have unmet needs. Specifically, the study focused on six school districts in which more eligible students applied for SES than could be served with available funds (i.e., oversubscribed districts) and which therefore allocated scarce SES spaces by giving priority to lower-achieving students among the eligible applicants. The key question addressed in the study was "What is the average impact of offering SES to eligible applicants who are on the cusp of having access to services, in school districts where services are oversubscribed?" Across six oversubscribed districts, the authors found no evidence of impacts of offering SES to students near the cut point for an offer. For students in the oversubscribed districts in Grades 3-8 at the cusp of receiving an offer of services, they found no statistically significant impact of offering SES on student achievement in reading or in mathematics. There was no evidence of potential benefits for at-risk subgroups of students. Similarly, they found no statistically significant impact of participating in SES on student achievement in reading or mathematics.

The last study examined in terms of SES effectiveness for Title I students was conducted by Harding et al. in 2012. They utilized a quasi-experimental research design in the study to compare SES participants and non-participants. The database was drawn from Title I schools in Baltimore City Public Schools (BCPS) identified as "in need of improvement" and eligible for

supplemental educational services for the 2005-2007 academic years. The researchers used a data set composed of all 39,655 students in BCPS enrolled in Title I schools that were in some phase of school improvement. Results showed that, compared to students who did not participate, those who did participate showed greater improvement in math scores and reading scores.

While many of the studies appeared to show that there were not significant changes among students who had access to SES services, at least two of the studies show the opposite. The Minneapolis Public Schools (Heistad, 2007) appeared to show that there were no significant differences on both reading and math achievement between students who received SES and those who were eligible for SES but did not receive the services as did the 2008 Ross study and the 2008 Munoz study. The results of the Munoz study even went so far as to report that achievement results on the Kentucky Core Content Test in Reading and Mathematics were not significantly superior for the SES participants relative to matched control students.

The 2008 Springer study found that although the SES tutoring did not appear to disproportionately benefit a particular racial/ethnic group or ability level, it did discover that female students and students with disabilities appeared to benefit more from participating in SES. The Deke study, conducted in 2012, reported that there was no evidence of potential benefits for at-risk subgroups of students. Similarly, they found no statistically significant impact of participating in SES on student achievement in reading or mathematics.

The largest of the studies, the 2009 Stullich study which was commissioned by the Department of Education, had different results. This particular study showed that Black students, Hispanic students, and students with disabilities all showed positive achievement effects from participating in supplemental educational services. Five of the seven district studies showed

significant improvement. The Harding study of 2012 also showed that, compared to students who did not participate, those who did participate showed greater improvement in math scores and reading scores.

As is indicated by this sample of studies into the effectiveness of the SES program the results are mixed at best. Currently, studies that show a lack of effectiveness in the SES in its current state outweigh those who tout its effectiveness.

Synthesis of Research

In summary, as of 2014, Washington was one of a handful of states that was mandated to provide the option of SES for failing to meet adequate yearly progress despite the fact that the government has not proven that it can effectively mandate programs either through incentives or sanctions to increase student performance when it comes to low-performing students of poverty. Even though the intent of providing SES was not originally to assist low-performing students at poverty level, from the review of the literature there have been organizations that have taken advantage of the tutoring-like opportunity for their students. On the heels of the 50th anniversary of the ESEA of 1965, when Lyndon Johnson officially started his fight on the "War on Poverty," the research has shown that educational organizations continue to struggle with ESEA implementation and evaluation. With each reauthorization to the original plan, well-meaning politicians have implemented their own changes, hoping to either rein in the program or make it more effective; instead, studies appear to show that with each new addition to ESEA, problems have followed.

CHAPTER 3

METHODOLOGY

Introduction

On March 12, 2014, Washington State's NCLB waiver was revoked by the same person who once said, "NCLB is six years overdue for an update, and nearly all agree that it should be replaced with a law that gives systems and educators greater freedom while continuing to fulfill the law's original promise" because of failing to meet the requirements laid out by Secretary of Education Arne Duncan. As a result, Washington would now have to fully implement all the laws required from the NCLB law of 2002 that requires 100% of students will have to be proficient. In the fall of 2014, no school in Washington had met the 100% level; therefore, all schools in Washington were deemed failing, according to NCLB.

Depending on the number of consecutive years that a school may have failed, such school would receive sanctions. The researcher looked at one specific sanction as a result of a school deemed failing three or more consecutive years, supplemental educational services. Washington first implemented supplemental educational services in fall of 2003. The number of students taking advantage of "free tutoring" increased steadily from its inception until it reached 16,972 students in the fall of 2012, the year that Washington received a waiver from NCLB laws. Although there was evidence of numbers of students taking advantage of the "free tutoring," there were no evaluations of the programs to determine if there were any benefits in terms of student achievement. This was a lapse in judgment considering the numbers of dollars and the amount of time spent to implement SES. To the contrary, if it was a successful program, there is not any evidence to show that, leaving thousands of struggling students without the opportunity to partake.

This chapter presents population, samples/subjects, instrumentation, data collection procedures, and data analysis used in the quantitative study. The study was conducted within the state of Washington. The purpose of this non-experimental causal-comparative study was to compare two groups of Title I schools from five diverse school districts in Washington to determine the impact on student achievement when given the opportunity to receive supplemental educational services. The questions speak to the extent to which the SES status of supplemental educational services in Washington State had an academic effect on the populations that participated. This question was addressed by a quantitative analysis of the MSP exam in Reading and Mathematics on students in Grades 3 through 5.

Setting for the Study

This study took place in the state of Washington, specifically within Title I schools derived from five districts—Seattle, Spokane, Tacoma, Vancouver and Yakima—during the 2010 and 2011 school years. The schools were categorized as schools in need of improvement and as a result were eligible to receive supplemental educational services. The five school districts served an estimated 145,111 students during that time period.

The Seattle Public Schools had a total student enrollment of 49,266. The number of students who received free/reduced lunch was 21,271, or 43.2% of the student population. The ethnic makeup of the student population districtwide was comprised of 12.3% Hispanic, 18.5% Black, 43.3% White, 18.4% Asian, 19.0% Asian/Pacific Islander, and 7.5% other, which includes Native American and all other multiracial subgroups. The four-year graduation rate in this district for 2010 was 74.3%).

The Spokane School District had a total student enrollment of 29,021. The number of students who received free/reduced lunch was 16,272, or 56.7% of the student population.

The ethnic makeup of the student population districtwide was comprised of 7.4% Hispanic, 2.8% Black, 73.9% White, 2.7% Asian 1.4% Asian/Pacific Islander, and 2.3% other, which includes Native American and all other multiracial subgroups. The four-year graduation rate in this district was 76.7%.

The Tacoma School District had a total student enrollment of 28,988. The number of students who receive free/reduced lunch is 18,223, or 63.9% of the student population. The ethnic makeup of the student population districtwide is comprised of 15.7% Hispanic, 17.1% Black, 44.4% White, 9.9% Asian , 11.7% Asian/Pacific Islander, and 12.8% other, which includes Native American and all other multiracial subgroups. The four-year graduation rate in this district for 2010 was 74.6%.

The Vancouver School District had a total student enrollment of 22,744. The number of students who receive free/reduced lunch is 11,798, or 52.7% of the student population. The ethnic makeup of the student population districtwide is comprised of 19.3% Hispanic, 3.5% Black, 65.6% White, 3.6% Asian, 1.8% Asian/Pacific Islander, and 0.8% other, which includes Native American and all other multiracial subgroups. The four-year graduation rate in this district for 2010 was 72.1%.

The Yakima School District has a total student enrollment of 15,092. The number of students who receive free/reduced lunch is 12,261, or 82.5% of the student population. The ethnic makeup of the student population districtwide is comprised of 74.0% Hispanic, 1.0% Black, 20.7% White, 0.5% Asian, 0.6% Asian/Pacific Islander, and 3.8% other, which includes Native American and all other multiracial subgroups. The four-year graduation rate in this district for 2010 was 78.6% (71.5% Black, n/a% Asian, 72.9% Hispanic, and 89.8% White).

Table 5

2011 Seattle-Spokane-Tacoma-Yakima-Vancouver School Districts – Demographic Data

	Seattle		Spokane		Tacoma		Vancouver		Yakima	
	N	%	N	%	N	%	N	%	N	%
Total Students	49,266	…	29,021	…	28,988	…	22,744	…	15,092	…
Male	25,323	51.4	14,870	51.2	14,766	50.9	11,636	51.2	14,853	51
Female	23,943	48.6	14,151	48.8	14,222	49.1	11,108	48.8	7,389	49
Asian	9,070	18.4	796	2.7	2,864	9.9	827	3.6	7,703	0.5
Asian Pacific	9,349	19	415	1.4	3,398	11.7	405	1.8	86	0.6
Black	9,131	18.5	803	2.8	4,970	17.1	793	3.5	150	1
Hispanic	6,077	12.3	2,157	7.4	4,555	15.7	4390	19.3	11,165	74
White	21,325	43.3	21,458	73.9	12,883	44.4	14,929	65.6	3,117	20.7
Special Education	7,104	14.4	4,338	15.1	4,079	14.3	2,854	12.7	2,052	13.8
Limited English	4,924	10	1,265	4.4	1,118	3.9	1,928	8.6	4,032	27.1
Low Income	21,271	43.2	16,272	56.7	18,223	63.9	11,798	52.7	12,261	82.5

Population

The population of this study consisted of approximately 478 Title I elementary public schools in Washington State with 205,599 students. The Title I elementary schools' demographics had the approximate values of 51.7% male, 48.3% female, 53.8% White, 6.3% Black, and 25.5% Hispanic. The free/reduced lunch percentage of the Title I elementary schools in Washington State was approximately 59.5%. The schools in this study each have similar demographics, which approximate the Title I elementary schools' demographics of the state of Washington.

Sample

For each of the years of the study, 2010 and 2011, the sample was drawn from the population of Title I elementary schools in Washington State. The researcher's sample population criteria consisted of the following:

1. Being a school in at least Step 3 of school improvement, therefore making it eligible to receive supplemental educational services per the sanction of NCLB
2. Being one of the top users of SES in the state of Washington as measured by their

district's percentage of eligible students taking part in the SES programs provided.

Tables 6-8 contain the grade level and demographic data of the five districts that met the criteria established by the researcher.

Table 6

Seattle-Spokane-Tacoma-Vancouver-Yakima School Districts' Title I Elementary Schools – Grade Level

	2010 - 2011		2011 - 2012	
Grade	SES	Non-SES	SES	Non-SES
3	3094	2271	3382	2167
4	3111	2277	3327	2119
5	3052	2215	3328	2095
Total Student	9257	6763	10037	6381

Table 7

2010-2011 Seattle-Spokane-Tacoma-Vancouver-Yakima School Districts' Title I Elementary Schools – Demographic Data

	SES - 30 Schools		Non-SES - 37 Schools	
	N	%	*N*	%
Total Enrollment	14373		15445	
Males	7387	51.4	7988	51.7
Females	6986	48.6	7457	48.3
Asian Pacific Islander	1662	11.6	1316	8.5
Black	2185	15.2	1349	8.7
Hispanic	6120	42.6	2911	18.8
White	3551	24.7	8393	54.3
Limited English	4384	30.5	2072	13.4
Special Education	2083	14.5	2468	16
Low Income	12021	83.6	11347	73.5

Table 8

2011 – 2012 Seattle-Spokane-Tacoma-Vancouver-Yakima School Districts' Title I Elementary Schools – Demographic Data

	SES - 30 Schools		Non-SES - 37 Schools	
	N	%	*N*	%
Total Enrollment	14590		15635	
Males	7448	51	8118	51.9
Females	7142	49	7517	48.1
Asian Pacific Islander	1602	11	1302	8.3
Black	2122	14.5	1228	7.9
Hispanic	6345	43.5	3195	20.4
White	3495	24	8213	52.5
Limited English	4042	27.7	1976	12.6
Special Education	2176	14.9	2504	16
Low Income	12504	85.7	11631	74.4

Supplemental Educational Services Status

All students who attended schools that operated a Title I, Part A program and were in Step Improvement 3 through 5 were eligible for the remediation available through SES. Seattle, Spokane, Tacoma, Vancouver, and Yakima school districts gave priority to the children whose families qualified as low-income and who ranked as lowest-achieving. In the ESEA, Section 1116 (b)(10)(C) outlined an option for districts that needed to decide which students were in the greatest need of SES.

Supplemental education services were just that—an extra layer of teaching and learning support that complemented and augmented the instruction and curricular resources already present in the classroom. SES could have included tutoring through remediation and other academic support services, supplemental to the core programming schools. These services are district-funded through the state's basic education allocation.

State Role and Responsibilities

The law directed OSPI to identify a list of qualified SES providers able to offer remediation in reading, language arts, and mathematics, and instruction able to improve the language proficiency of English language learners (ELLs). Parents and guardians selected the service they felt was right for their child. The U.S. Department of Education granted OSPI a waiver, which permitted all districts and schools in Washington state the right to apply for approval to become a provider of supplemental education services (SES).

District Role and Responsibilities

The delivery of supplemental education services (SES) made specific demands on Seattle, Spokane, Tacoma, Vancouver, and Yakima school districts as the point-of-contact and communication channel for parents and guardians who had to select an SES provider for their student. Each district was responsible for the following:

- Notified parents/guardians about the availability of SES at least once a year.
- Published the following prominently on their website: (1) how many students are eligible in your district for the upcoming school year, and in the following school year, how many received SES and (2) for the current school year, the SES providers, approved by OSPI that were able to work in their district and where they delivered services.
- Established provider agreements that met the obligations of federal law.
- Worked closely with parents and guardians to develop achievement goals for the student that detailed how they would measure achievement and built a timetable with milestones that marked progress.

- Made sure that plans for students with disabilities were consistent with their individualized education programs

Provider Role and Responsibilities

All providers were required by OSPI to deliver services that met these criteria. SES instruction must be as follows:

- Consistent with the content and instruction used by the district
- Aligned with the state's academic standards
- Designed to increase student achievement
- High-quality and research-based

OSPI developed the state requirements for SES providers by working with districts, parents, teachers, and members of the public who were interested in public education and its capacity to support schools and help students reach their full potential. The goal was to offer families a robust set of choices for academic remediation.

Seattle, Spokane, Tacoma, Vancouver, and Yakima School districts and schools could have become SES providers. All Washington State districts and schools were able to apply as SES providers as a result of the U.S. Department of Education granting OSPI a waiver, which permitted all districts and schools in Washington State the right to apply for approval to become a provider of SES**.** However, laws and regulations were clear that all potential providers must have been evaluated by the same criteria and held to the same standards.

OSPI opened the application window for potential SES providers every June and published the list of approved providers in early August. The list was organized by school district, which made it easy for parents/guardians to find and select the provider and service they

felt would help their child. The ESEA placed the choice with parents in the opening section of Section 116 (e) SUPPLEMENTAL EDUCATION SERVICES:

> (1) In the case of any school described in paragraph (5), (7), or (8) of subsection (b), the local educational agency serving such school shall, subject to this subsection, arrange for the provision of supplemental educational services to eligible children in the school from a provider with a demonstrated record of effectiveness, that is selected by the parents and approved for that purpose by the State educational agency in accordance with reasonable criteria, consistent with paragraph (5), that the State educational agency shall adopt.

Research Questions

This study utilized causal-comparative (ex post facto) research. Assessment results measured by the spring 2010 and 2011 MSP Reading and Mathematics scores for students in Grades 3 through 5 were used to govern student eligibility for the study and were used to produce evaluation groups.

To what extent, if any, do Title I schools benefit from supplemental educational services as determined by Washington State Measurement of Student Progress scale score means (Grades 3, 4, and 5) in both Reading and Mathematics when controlling for past performance?

Subsidiary Question 1

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with grade levels?

Subsidiary Question 2

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with gender?

Subsidiary Question 3

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with income levels?

Instrumentation/Data Collection

In 1993, Washington State embarked on the development of a comprehensive school change effort with the primary goal to improve teaching and learning. Created by the state legislature in 1993, the Commission on Student Learning was charged with three important tasks to support this school change effort.

- Establish essential academic learning requirements (EALRs) that describe what all students should know and be able to do in eight content areas—reading, writing, communication, mathematics, science, health/fitness, social studies, and the arts.
- Develop an assessment system to measure student progress at three grade levels towards achieving the EALRs.
- Recommend an accountability system that recognizes and rewards successful schools and provides support and assistance to less successful schools.

The Essential Academic Learning Requirements (EALRs) and Learning Standards in Reading, Writing, Communications, and Mathematics were adopted in 1995 and revised in 1997

Performance "benchmarks" were established at three grade levels – elementary (Grade 4), middle (Grade 7), and high school (Grade 10). The assessments for Reading, Writing, and Mathematics were developed at Grades 4 and 7 and were operationalized in spring 1998. Participation in the Grade 4 assessment became mandatory for all public schools in spring 1998. Participation in the Grades 3 and 5 Reading and Mathematics assessments was voluntary in 2004 and 2005 and became mandatory for the first operational administration in spring 2006.

The Measurement of Student Progress (MSP) assessment was developed specifically to measure Grades 3-5 students' progress toward meeting the EALRs, grade level expectations (GLEs), and performance expectations (PEs). According to the *Washington State Assessment Coordinator's Manual (2012*), the MSP is a standards-based student assessment designed to do the following:

- Assist schools, districts, and the state in improving student learning
- Report students' level of proficiency relative to the Essential Academic Learning requirements (EALRs) in reading, writing, mathematics, and science
- Measure progress toward district and school improvement targets
- Serve as Washington's accountability measure to meet federal requirements under the No Child Left Behind Act
- Be used as one of the state's requirements for a standard high school diploma, beginning with the graduating class of 2008 (p. 1).

The MSP assessments require students to select and to construct responses to demonstrate their knowledge, skills, and understanding in each of the EALRs or Learning Standards. Item types include multiple-choice, completion, and short-answer items to essays and problem-solving tasks. Student-, school-, district-, and state-level scores are reported for the operational

assessments. The MSP test forms are standardized and "on demand," meaning students are expected to respond to the same items, under the same conditions, and at the same time during the school year.

The MSP assessment is untimed; that is, students may have as much time as they reasonably need to complete their work. Guidelines for providing accommodations to students with special needs have been developed to encourage the inclusion of as many students as possible. Special needs students include those in special education programs, English language learners (ELL/bilingual), migrant students, and highly capable students. A broad range of accommodations allows nearly all students access to some or all parts of the assessment.

The 2010, 2011, and 2012 MSP tests measured students' achievement of the Learning Standards in Reading and Mathematics. Tables 9 and 10 indicate the Learning Standards measured by the tests for each of the grades and content areas, the test "strands," and the number of items per strand in the 2010, 2011, and 2012 tests.

Table 9

Grade 3-5 Reading Items Content Classification

Type of Reading Passage	Test Strand	Number of Items											
		2010 Form A			2010 Form AA			2011			2012		
		Gr. 3	Gr. 4	Gr. 5	Gr. 3	Gr. 4	Gr. 5	Gr. 3	Gr. 4	Gr. 5	Gr. 3	Gr. 4	Gr. 5
Literacy	Comprehension	7	7	9	7	7	9	6	7	7	8	6	8
	Analysis	7	9	7	7	9	7	7	7	7	6	9	6
Informational	Comprehension	8	8	8	9	8	8	9	8	8	7	7	8
	Analysis	8	6	6	7	6	6	8	8	8	9	8	8
Total Number of Items		30	30	30	30	30	30	30	30	30	30	30	30

Notes: Reading learning standards:

1. The student understands and uses different skills and strategies to read.
2. The student understands the meaning of what is read.
3. The student reads different materials for a variety of purposes.

Table 10

Grade 3-5 Mathematics Items Content Classification

		Number of Items								
		2010			2011			2012		
		Gr. 3	Gr. 4	Gr. 5	Gr. 3	Gr. 4	Gr. 5	Gr. 3	Gr. 4	Gr. 5
Problem Solving &	Number Sense & Algebraic Sense	6	4	6	6	4	6	7	6	6
Reasoning Skills	Measurement & Geometric Sense	2	4	1	2	4	1	2	4	2
	Probability & Statistics	1	1	0	1	1	0	1	0	1
Content Skills	Number Sense & Algebraic Sense	14	11	16	14	11	16	13	11	13
	Measurement & Geometric Sense	6	7	5	6	7	5	7	5	7
	Probability & Statistics	1	3	2	1	3	2	0	4	1
Total Number of Items		30	30	30	30	30	30	30	30	30

Notes: Mathematics learning standards:

1. The student understands and applies the concepts and procedures of mathematics.
2. The student uses mathematics to define and solve problems.
3. The student uses mathematical reasoning.
4. The student communicates knowledge and understanding in mathematical and everyday language.
5. The student makes mathematical connections.

Scale Scores Ranges for All Levels of the Measurements of Student Progress

Level 1 Below Basic	**Level 2** Basic	**Level 3** Proficient	**Level 4** Advanced
This level denotes little or no demonstration of the prerequisite knowledge and skills that are fundamental for meeting the standard.	This level denotes partial accomplishment of the knowledge and skills that are fundamental for meeting the standard.	This level represents solid academic performance. Students reaching this level have demonstrated proficiency over challenging content, including subject-matter knowledge, application of such knowledge to real world situations, and analytical skills appropriate for the content and grade level.	Student performance is judged superior, which is notably above that required for meeting the standard.

Figure 2. Scale scores ranges for all levels of the measurements of student progress.

Statistical analyses based on classical test theory and modern item response theory were done to evaluate item effectiveness and to empirically examine the presence of differential item functioning or item bias. The MSP reports results on a 4-point scale: Level 4 (advanced), Level 3 (proficient), Level 2 (basic) and Level 1 (below basic). It is scaled so that a scaled score of 400 is the benchmark for being proficient, or Level 3. Students must be either Level 3 or Level 4 to be judged as meeting standard. Table 11 contains the scale score ranges for all levels on the Grades

3-5 Measurements of Student Progress (MSP). The scale score ranges include the lowest and highest attainable score on each test (Reading and Mathematics).

Table 11

Measurements of Student Progress (MSP) Reading & Mathematics Scale Score Range

	Reading Levels				Mathemactics Levels			
Grade	1	2	3	4	1	2	3	4
3	275-374	375-399	400-425	426-500	200-374	375-399	400-435	436-575
4	275-374	375-399	400-423	424-475	200-374	375-399	400-446	447-575
5	275-374	375-399	400-421	422-475	200-374	375-399	400-439	440-575

This quantitative study examined the relationship of student achievement, ethnicity, grade level, and gender. Archival data were obtained for the 2010 and 2011 school years from the OSPI database. OSPI had aggregate school data for the entire state that was easily accessible to the public. All schools were required to report data to the OSPI system during these years. Data examined were from Title I schools from Seattle, Spokane, Tacoma, Vancouver, and Yakima school districts that either used SES or not. Data were analyzed for statistically significant differences among Black, Hispanic, and White students related to student achievement (MSP scores) as a function of having the opportunity to participate in an SES program.

Reliability

There are many definitions of reliability (Feldt & Brennan, 1989; Haertel, 2006) that have their genesis in classical test theory. The components of reliability examined here are internal consistency, standard error of measurement, interrater agreement, and decision consistency and accuracy. Reliability is enhanced when the component is maximized (e.g., internal consistency) or in other cases when it is minimized (errors).

Internal Consistency

Internal consistency reliability is an indicator of how similarly students perform across items measuring similar knowledge and skills; that is, how consistently does each examinee perform on all of the items within a test. Internal consistency can be estimated by Cronbach's coefficient alpha. There are two requirements to estimate score reliability:

1. The number of items should be sufficient to obtain stable estimates of students' achievement
2. All test items should be homogeneous (similar in format and measure very similar knowledge and skills).

The MSP assessment is a complex measure that combines multiple-choice, short-answer, and completion (requiring one or two word responses) items. The Reading and Mathematics tests measure different strands that are components of the Reading and Mathematics content domains. Examinee performance may differ markedly from one item to another due to interactions with prior knowledge, educational experiences, and exposure to similar content or item format. The heterogeneity of items in the Reading, Mathematics, and Science tests may result in an underestimate of the reliability of test scores as estimated by Cronbach's coefficient alpha. The test scores from Reading and Mathematics all exhibit relatively high coefficient alphas, suggesting the construct is being measured consistently.

The 2010 Reading and Mathematics tests had internal consistency (reliabilities) ranging from 0.81 to 0.91. The 2011 Reading and Mathematics tests had internal consistency (reliabilities) ranging from 0.83 to 0.90. The 2012 Reading and Mathematics tests had internal consistency (reliabilities) ranging from 0.84 to 0.91. Table 12 presents a summary of the internal consistency for all spring 2010, 2011, and 2012 MSP tests.

Table 12

Internal Consistency (Reliabilities) for the MSP

Grade/Content	Reading			Mathematics		
Area	2010	2011	2012	2010	2011	2012
3	0.86/0.86	0.84	0.84	0.87	0.88	0.87
4	0.86/0.83	0.87	0.84	0.88	0.9	0.89
5	0.85/0.84	0.85	0.85	0.89	0.89	0.91

Note: Grade 3 to 5 2010 Reading test have two base forms (A and AA).

Reliability is a prerequisite for validity. The finding of reliability in student scores supported the validity of the inference that the scores reflected a stable construct. The results indicated that the reliabilities for all grade-level tests for Reading and Mathematics were high, ranging from 0.84 to 0.91. The reliabilities of the MSP assessment were also examined for various subgroups of the examinee population that differed in their demographic characteristics. The characteristics considered were gender, ethnicity, economic status, provision of special services, language proficiency, and test administration mode. The reliabilities range from 0.71 to 0.92 for gender groups, from 0.69 to 0.94 for ethnic groups, and from 0.47 to 0.92 for other special program groups.

The number-correct scores are computed for the strands for each assessment. The reliabilities of these strand scores range from 0.61 to 0.82 for Reading and from 0.44 to 0.88 for Mathematics. According to ETS, the reliabilities of reporting strands are lower than those for the total tests because they are based on very few items. Consistent with the findings of previous years, the strand reliabilities also are affected by the number of items in each strand, with strand scores based on fewer items having somewhat lower reliabilities than strand scores based on more items. Because the reliabilities of scores at the strand level are lower, schools should supplement the score results with other information when interpreting the results.

In terms of estimating the reliability of classification, when the decisions are collapsed to below proficient versus proficient and above, which are the critical categories for AYP analyses, the proportion of students that were estimated to be classified accurately ranged from 0.84 to 0.93. Similarly, the proportion of students that were estimated to be classified consistently ranged from 0.79 to 0.90 for students classified into below proficient versus proficient and advanced. The decision accuracy and consistency analyses for the overall tests at the proficient cut score showed that the inferences made about whether the students meet the standards from the test scores are valid and defendable. Tables 13 and 14 are summaries of decision accuracy and consistency for all 2010, 2011, and 2012 MSP tests.

Table 13

Overall Decision Accuracy of the 2010, 2011, and 2012 MSP Tests

Grade/Content	Reading			Mathematics		
Area	2010	2011	2012	2010	2011	2012
3	0.90/0.91	0.90	0.90	0.89	0.90	0.90
4	0.90/0.89	0.90	0.90	0.90	0.91	0.90
5	0.89/0.89	0.91	0.89	0.90	0.90	0.91

Note: Grade 3 to 5 2010 Reading test have two base forms (A and AA).

Table 14

Overall Decision Consistency of the 2010, 2011, and 2012 MSP Tests

Grade/Content	Reading			Mathematics		
Area	2010	2011	2012	2010	2011	2012
3	0.87/0.88	0.87	0.86	0.86	0.86	0.87
4	0.86/0.84	0.86	0.86	0.84	0.87	0.87
5	0.85/0.85	0.85	0.86	0.85	0.85	0.88

Note: Grade 3 to 5 2010 Reading test have two base forms (A and AA).

The tests and content strands were reliable measures of the constructs with reasonable measurement error. The alpha coefficients for overall tests and by content strands revealed acceptable levels of internal consistency, and the standard errors of measurement were sufficiently large to warrant judicious interpretation for some groups or score types when evaluating test scores and making decisions about individual student scores. The scoring of constructed-response items by raters was sufficiently reliable. Inter-rater data indicated that scorers applied consistent scoring standards defined by the scoring rubrics. The decisions and inferences made about the students were defendable with decision accuracy indices around the critical cut point for all tests ranging from 0.84 to 0.93 and corresponding decision consistency indices in the 0.79 to 0.90 range.

Validity

Validity refers to the degree to which each interpretation or use of a test score is supported by evidence that is gathered (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 1999; ETS, 2002). It is a central concern underlying the development, administration, and scoring of a test and the uses and interpretations of test scores.

Messick (1989) identified three strategies to establish the validity of the MSP for Grades 3-5:

- Examine the content of the test in relation to the content of the domain of reference.
- Examine and probe the ways in which individuals respond to the items or tasks.
- Examine the relationships among responses to the tasks, items, or parts of the test; that is, the internal structure of test responses.

Content Validity

The relationship between a test's content and the construct that the test was designed to measure can provide important evidence of validity. The construct of interest is operationally defined by state content standards and the test blueprints. The standards and test design specify the content, format, and scoring of items that are adequate measures of the knowledge and skills described in the content standards. Evidence that the items meet these specifications and represent the desired complement of knowledge and skills, referenced by the standards, supports the inference that students' scores on these items can appropriately be regarded as measures of the intended construct.

Logical analyses of test content in which experts judge the adequacy with which the test content conforms to the test specifications and represents the intended domain of content is evidence of validity. These reviews by experts can also be used to determine whether the test content contains material that is not relevant to the construct of interest. It was regular practice to have committees of teachers, content area experts, and professional test developers provide ongoing review, verification, and confirmation to ensure that the test content was aligned with the state standards (ETS, 2010). Intercorrelational analysis of the reading strands showed correlations between 0.62 and 0.74

Construct Validity

The MSP was examined for evidence based on test content, which includes a description of the Washington State standards, specifications and blueprints, item development process, item review process, the form construction process, and an alignment study. Relations to other variables also were examined to determine the relationships between test scores and measures of other variables external to the test. Correlations were examined between the Iowa Test of

Educational Development (ITED) and other content areas (i.e., math and science). The degree to which the content area strand scores correlate provides evidence of validity. In addition, evidence based on internal structure was considered. According to the 2011 OSPI report, "Evidence of validity can be obtained from studies of the properties of the item scores and the relationship between these scores and scores on components of the test." To the extent that the score properties and relationships found are consistent with the definition of the construct measured by the test, support is gained for interpreting these scores as measures of the construct" (p. 115). Other validity measures such as classical statistics (i.e., point-biserial correlations) and the IRT model-data fit analyses can be found in the 2009 OSPI technical report. A confirmatory factor analysis was done to examine construct validity. Also employed were the comparative fit index (CFI), root mean square error of approximation (RMSEA), chi-square, and the chi-square statistic divided by its associated degrees of freedom (*df*). The results of these analyses provide evidence of validity based on test content and content area constructs.

Internal Validity

According to Jimenez-Buedo and Miller (2010), internal validity is ensuring "that the SES status is isolated from potential confounds in order to make certain that the observed effect is attributable to the SES status" (p. 302). Gay et al. (2009) referred to internal validity as "the degree to which experimental results are attributable to the independent variable and not to another rival explanation" (p. 242). Internal validity is threatened when any event or condition unrelated to the SES status occurs during the study, which may affect the dependent variable (Campbell & Stanley, 1963; Gay et al., 2009).

Research Design

The purpose of this non-experimental causal-comparative study is to compare two groups of Title I schools in five diverse school districts in Washington State to determine the impact that supplemental educational services has on student achievement. The study will help to determine the impact of the independent variables, supplemental educational services (SES status) and grade level, on the dependent variables, academic outcomes. Academic outcomes will be analyzed using ex post facto school aggregate data derived from the Mastery of Student Performance (MSP) test, the Washington State Grade 3-5 state assessment, from two consecutive years (2010 and 2011). The school aggregate data was used to determine which group made significant achievement gains. According to Creswell (2007), this approach is appropriate because two groups are studied and an intervention is provided during the study. After the intervention, analysis is conducted comparing the two groups' data to determine the intervention's effect on each group.

Procedures

The researcher analyzed archival quantitative data from the OSPI database. The number of districts used in the study was created by the initial analysis of Title I elementary schools in Washington State based upon their level of participation in supplemental educational services programs. This study examined the differences in academic outcomes among two groups of Title I schools in Seattle, Spokane, Tacoma, Vancouver, and Yakima School districts using a causal-comparative research design (Creswell, 2008). In order to determine if the two groups, defined by their participation status, were comparable, the researcher conducted independent samples *t*-tests and correlation tests.

A causal-comparative design was utilized because the independent variables were not manipulated for this study. In this type of design, archival data are analyzed to determine differences among the groups. An advantage of causal-comparative design is that existing data

can be used to determine differences in combined variables (Creswell, 2008). However, caution should be used when interpreting results of a causal-comparative study because the independent variables have already occurred (Creswell, 2008).

Data Analysis

Assumptions

Prior to conducting a hierarchical multiple regression, the relevant assumptions of this statistical analysis were tested. First, a sample size of 67 was deemed adequate given four independent variables were to be included in the analysis (Hair et al., 2010). According to Hair et al., the minimum ratio of observations to variables is 5:1, but the preferred ratio is 20:1. The assumption of singularity was also met, as the independent variables (percent free/reduced lunch, percent special education, 2010 test scores and SES status) were not a combination of other independent variables. An examination of correlations (see Appendix A) revealed that no independent variables were highly correlated. The collinearity statistics (i.e., tolerance and VIF) were all within accepted limits, and the assumption of multicollinearity was deemed to have been met (Coakes, 2005; Hair et al., 1998). An examination of the Mahalanobis distance scores indicated no multivariate outliers. Residual and scatter plots indicated the assumptions of normality, linearity, and homoscedasticity were all satisfied (Hair et al., 1998; Pallant, 2001).

Preliminary Analyses

The researcher conducted two sets of analyses in order to provide descriptive information on the key variables as well as whether or not the schools were comparable using mean percentages of students in each category. The first set consisted of calculating the mean and standard deviation for each of the SES and non-SES schools for each of the academic outcomes variable, comparing the actual mean percentages of the performance by the given subgroups.

The second set consisted of running independent samples *t*-tests assuming unequal variances, using the demographic characteristics, and comparing the mean percentages of the make-up or characteristics of the schools.

Primary Analyses

To address the research questions, a series of hierarchical regressions were utilized to analyze the differences in student achievement among Title I schools including their subgroups. The independent variables for this research study were SES status and grade level. The dependent variables for this study were academic outcomes for the Title I elementary schools. Both the dependent and independent variables were measured with 2010 and 2011, Grade 3-5 Measurement of Student Progress (MSP) in Reading and Mathematics school aggregate data. SPSS, Version 22, was used to conduct all statistical tests with the significance set at the 0.05 probability level.

Summary

The objective of this study was to compare two groups of Title I schools to determine the impact on student achievement when given the opportunity to receive supplemental educational services. Two groups of schools from five school districts were selected for this study. The study employed a causal-comparative design. The selected two groups of Title I schools consisted of the participating Title I schools and the non-participating Title I schools, with the difference being whether they were provided the opportunity to receive supplemental educational services via their district's permission. To determine if the two groups are comparable, independent samples *t*-tests and correlations were completed. Student traits of gender, ethnicity, and socio-economic status were compared across schools. The independent and dependent variables were measured by using the Grade 3-5 Washington Assessment Measure of Student Progress (MSP) in Reading and

Mathematics school aggregate data. Data, therefore, were analyzed utilizing independent samples *t*-tests, correlations, and hierarchical regressions using SPSS, Version 22, with significance set at the 0.05 probability level or higher.

CHAPTER 4

ANALYSIS OF STUDY

Introduction

The purpose of this study was to determine if there was a measurable academic benefit to providing supplemental educational services to Title I schools in five diverse school districts in Washington State. The study hoped to determine the impact of the independent variables (percent free/reduced lunch, percent special education, 2010 test scores and SES status) on the dependent variables (academic outcomes). School achievement was analyzed using ex post facto school aggregate data derived from the Mastery of Student Performance (MSP) test, the Washington State Grade 3-5 state assessment, from two consecutive years (2010 and 2011). The population of this study consisted of approximately 478 Title I elementary public schools in Washington State with 205,599 students. The sample of this study consisted of 67 Title I elementary schools in five diverse schools districts in Washington State: Seattle, Spokane, Tacoma, Vancouver, and Yakima. Each of the school districts was selected as the result of its level of supplemental educational services participation as determined by the percent of students eligible versus the actual number of students that enrolled.

A series of preliminary analyses, independent samples *t*-tests and Pearson correlations, were employed in the study to determine comparability of the groups. The primary analyses, hierarchical regressions, were employed to determine the effect of the independent variables (percent free/reduced lunch, percent special education, 2010 test scores and SES status) on the dependent variables, (academic outcomes). One research question and three subsidiary questions were analyzed and are discussed in this chapter. The potential implications for theory, knowledge, practice, policy, and future research are discussed in Chapter 5.

Research Questions

Overarching Research Question

To what extent, if any, do Title I schools benefit from supplemental educational services as determined by Washington State Measurement of Student Progress scale score means (Grades 3, 4, and 5) in both Reading and Mathematics when controlling for past performance?

Subsidiary Question 1

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with grade levels?

Subsidiary Question 2

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with gender?

Subsidiary Question 3

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with income levels?

Descriptive Statistics

The researcher conducted two sets of analyses in order to provide descriptive information on the key variables as well as whether or not the schools were comparable, using mean percentages of students in each category. The first set consisted of calculating the mean and standard deviation

for each of the SES and non-SES schools' academic outcomes variable (Table 15 and Table 16); comparing the actual mean percentages of the performance by the given subgroups. The second set consisted of running independent samples *t*-tests, assuming unequal variances, using the demographic characteristics (Table 17 and Table 18), comparing the mean percentages of the make-up or characteristics of the schools.

Table 15

2010 and 2011 MSP Math Performance Data by Subgroup

	School Year 2010				School Year 2011			
	SES		Non-SES		SES		Non-SES	
Academic Outcomes	Mean	STD	Mean	STD	Mean	STD	Mean	STD
Grade 3 Female	49.4	17.1	51.9	15.5	46.4	19.7	59.0	14.8
Grade 4 Female	39.0	15.2	48.6	12.4	42.5	16.3	49.3	15.9
Grade 5 Female	42.5	16.0	50.9	15.4	44.6	18.2	52.7	13.3
Grade 3 Male	43.8	14.6	70.4	17.1	47.1	15.6	74.1	12.3
Grade 4 Male	36.9	15.2	69.4	13.1	41.5	13.5	68.9	14.0
Grade 5 Male	39.0	15.0	67.8	15.8	46.1	15.8	79.1	12.1
Grade 3 Low Income	43.5	13.2	53.3	13.7	44.0	16.1	59.2	13.9
Grade 4 Low Income	34.9	13.3	49.3	11.5	38.2	12.7	50.8	13.3
Grade 5 Low Income	37.6	13.8	51.7	13.4	42.2	16.9	55.1	12.1

Table 16

2010 and 2011MSP Reading Performance Data by Subgroup

	School Year 2010				School Year 2011			
	SES		NON		SES		NON	
Academic Outcomes	Mean	STD	Mean	STD	Mean	STD	Mean	STD
Grade 3 Female	65.4	12.7	68.2	11.4	54.8	14.6	64.0	12.6
Grade 4 Female	50.5	14.2	58.0	12.9	59.6	12.8	66.1	13.9
Grade 5 Female	47.3	14.3	60.3	15.0	52.7	13.9	63.4	10.1
Grade 3 Male	54.9	12.8	60.4	12.3	47.4	13.5	53.2	12.2
Grade 4 Male	40.2	14.8	48.1	14.0	48.7	16.2	56.7	12.6
Grade 5 Male	43.1	16.3	51.4	14.2	48.7	15.2	60.5	11.8
Grade 3 Low Income	57.1	11.3	59.6	9.6	48.4	11.8	53.8	11.2
Grade 4 Low Income	42.0	11.9	47.9	13.9	51.4	12.8	56.0	11.4
Grade 5 Low Income	41.9	13.4	50.0	12.5	47.0	12.9	57.5	8.9

Table 17

Independent Samples t-test Assuming Unequal Variances – School Year 2010

Characteristics	Mean_NON	SD_NON	Mean_SES	SD_SES	t	df	Sig. (2-tailed)
Asian	4.461	3.9070	6.691	6.3871	-1.521	35.050	.137
AsianPacificIslander	6.684	4.2595	10.407	6.1672	-2.182	21.987	.040
Black	5.806	5.4212	8.304	8.1527	-1.012	16.784	.326
Hispanic	19.167	13.665	38.908	29.944	-3.340	38.731	0.002
White	52.536	21.212	23.909	19.524	5.741	63.913	0.000
Females	48.217	2.334	48.343	2.128	-0.230	64.065	0.819
Males	51.783	2.334	51.657	2.128	0.230	64.065	0.819
Limited English	13.673	9.950	28.732	17.879	-4.124	43.199	0.000
Special Education	16.452	5.957	14.865	5.513	1.131	63.822	0.262
Low Income	73.632	11.596	83.718	9.009	-4.006	64.901	0.000

Table 18

Independent Samples t-test Assuming Unequal Variances – School Year 2011

Characteristics	Mean_NON	SD_NON	Mean_SES	SD_SES	t	df	Sig. (2-tailed)
Asian	4.384	3.9054	7.126	6.2995	-1.822	31.772	.078
Asian Pacific Islander	6.421	4.1898	8.322	6.3776	-1.166	26.877	.254
Black	5.027	4.2773	10.292	7.6339	-2.333	15.369	.034
Hispanic	20.442	13.782	39.320	29.960	-3.188	38.883	0.003
White	51.150	20.342	23.286	17.761	5.982	64.614	0.000
Males	52.044	2.280	51.193	1.842	1.690	65.000	0.096
Females	47.956	2.280	48.807	1.842	-1.690	65.000	0.096
Limited English	12.603	8.938	26.022	19.358	-3.506	38.954	0.001
Special Education	16.736	5.857	15.177	5.917	1.077	61.907	0.285
Low Income	74.947	11.097	85.613	8.967	-4.351	65.000	0.000

The independent samples *t*-test compared the mean percentages of the SES schools and non-SES schools. The following characteristics were found to have a significant difference between the mean percentages of the two groups in School Years (SY) 2010 and 2011: Hispanic, White, limited English, and low income. Additionally, in SY 2010 the mean percentage of Asian/ Pacific Islander and in SY 2011 the mean percentage of Black were found to have a significant difference between the two groups. For example, in terms of SY 2011 characteristic Black, the mean percentage of the non-SES schools was significantly lower ($m = 5.027$, $sd = 4.277$) than the mean percentage of the SES schools ($m = 10.292$, $sd = 7.634$) where $t(-2.333) = 15.369$, $p <$

0.05, basically meaning that the SES schools had twice as many Black students compared to the non-SES schools.

In terms of the remaining characteristics, they were no significant difference between the mean percentages of the two groups in SY 2010 and 2011. Those characteristics were Asian, female, male and special education. Also, in SY 2010 the mean percentage of Black and in SY 2011 the mean percentage of Asian/Pacific Islander were found to have no significant difference between the two groups. Again, when looking at the characteristic of Black, in SY 2010 the mean percentage of the non-SES schools (m = 5.806, sd = 5.421) was not significantly different from the mean percentage of the SES school (m = 8.304, sd = 8.152) where t(-1.012) = 16.784, $p > 0.05$.

Grade 3 Hierarchical Multiple Regression Analyses

Mathematics

A three-stage hierarchical multiple regression was conducted with 2011 Math Scores as the dependent variables. Free/reduced lunch and special education were entered at Model 1 one of the regression. The independent variable, 2010 test scores was entered at Model 2 to account for past performance. SES status was entered at Model 3 with the primary goal to determine whether knowing the SES status is significant in predicting a school's overall performance. Tables 19-21 outlined the hierarchical multiple regression analysis results for Grade 3 female, male and low-income math scores as the dependent variables.

Table 19

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 3 Female Math Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.68	0.19	-0.42*	-0.47	0.20	-0.29*	-0.27	0.22	-0.17
Special Education	-0.24	0.36	-0.08	-0.24	0.35	-0.08	-0.38	0.35	-0.12
2010 Test Score				0.33	0.15	0.27*	0.34	0.15	0.29*
SES status							-8.72	4.62	-0.24
R^2	0.19			0.25			0.29		
F	7.35*			6.83*			6.22*		
ΔR^2	0.19			0.06			0.04		
ΔF	7.35*			4.89*			3.56		

*Note: N=67 *p* < .05.*

Table 20

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 3 Male Math Scores (N = 67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch		0.16	-0.39*	-0.27	0.16	-0.19	-0.13	0.18	-0.09
Special Education	-0.15	0.32	-0.06	-0.05	0.29	-0.02	-0.17	0.29	-0.06
2010 Test Score				0.47	0.12	0.45*	0.45	0.12	0.43*
SES status							-7.11	3.83	-0.22
R^2	0.16			0.32			0.36		
F	6.11*			9.96*			8.62*		
ΔR^2	0.16			0.16			0.04		
ΔF	6.11*			15.00*			3.45		

*Note: N=67 *p* < .05.*

Table 21

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 3 Low-Income Math Scores (N = 67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.35	0.17	-0.25*	-0.13	0.16	-0.09	0.06	0.17	0.05
Special Education	-0.22	0.33	-0.08	-0.21	0.30	-0.08	-0.36	0.29	-0.13
2010 Test Score				0.59	0.14	0.49*	0.58	0.13	0.48*
SES status							-9.35	3.84	-0.29*
R^2	0.07			0.29			0.35		
F	2.47			8.45*			8.32*		
ΔR^2	0.07			0.22			0.06		
ΔF	2.47			19.03*			5.94*		

*Note: N=67 *p* < .05.*

An examination of Tables 18-21 to determine whether SES status was a significant predictor of a school's overall performance shows Table 21 with SES status as being significant. The full model of percent free/reduced lunch, special education, 2010 test scores, and SES status to predict 2011 Grade 3 low-income MSP math score (Model 1) was statistically significant, R^2 = .349, $F(4, 62) = 8.317$, $p < .05$; adjusted R^2 = .307. The addition of 2010 test scores to the prediction of the 2011 Grade 3 low-income MSP math score (Model 2) led to a statistically significant increase in R^2 of .215, $F(1, 63) = 19.025$, $p < .05$. The addition of SES status to the prediction of the 2011 Grade 3 low-income MSP math score (Model 3) also led to a statistically significant increase in R^2 of .062, $F(1, 62) = 5.935$, $p < .05$. For this research question, SES status was a negative predictor (beta = -0.29) of the outcome variable; as the number of SES schools increased, the Grade 3 low-income math scores decreased.

Reading

A three-stage hierarchical multiple regression was conducted with 2011 reading scores as the dependent variables. Free/reduced lunch and special education were entered at stage one of the regression. The independent variable, 2010 test scores was entered at stage two to

account for past performance. SES status was entered at stage three with the primary goal to determine whether knowing the SES status is significant in predicting a school's overall performance. Tables 22-24 outlined the hierarchical multiple regression analysis results for Grade 3 female, male and low-income reading scores as the dependent variables.

Table 22

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 3 Female Reading Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.56	0.14	-0.45*	-0.41	0.14	-0.33*	-0.30	0.16	-0.24
Special Education	0.07	0.27	0.03	0.09	0.26	0.04	0.01	0.26	0.003
2010 Test Score				0.36	0.14	0.31*	0.38	0.14	0.32*
SES status							-4.94	3.49	-0.18
R^2	0.20			0.28			0.30		
F	7.99*			8.14*			6.71*		
ΔR^2	0.20			0.08			0.02		
ΔF	7.99*			6.96*			2.01		

*Note: N=67 *p* < .05.*

Table 23

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 3 Male Reading Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.43	0.13	-0.37*	-0.17	0.14	-0.15	-0.13	0.15	-0.12
Special Education	0.29	0.26	0.13	0.21	0.23	0.10	0.19	0.24	0.09
2010 Test Score				0.49	0.12	0.48*	0.49	0.12	0.48*
SES status							-1.50	3.15	-0.06
R^2	0.15			0.32			0.32		
F	5.42*			9.85*			7.35*		
ΔR^2	0.15			0.18			0.002		
ΔF	5.42*			16.15*			0.23		

*Note: N=67 *p* < .05.*

Table 24

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 3 Low-income Reading Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.20	0.13	-0.20	-0.08	0.12	-0.08	0.01	0.14	0.01
Special Education	0.26	0.24	0.13	0.23	0.23	0.12	0.17	0.23	0.08
2010 Test Score				0.43	0.14	0.38*	0.44	0.13	0.39*
SES status							-4.14	3.07	-0.18
R^2	0.05			0.18			0.21		
F	1.67			4.66*			4.00*		
ΔR^2	0.05			0.13			0.02		
ΔF	1.67			10.17*			1.82		

*Note: N=67 *p* < .05.*

An examination of Tables 22-24 to determine whether SES status was a significant predictor of a school's overall performance shows that none of the models has SES status as being significant. SES status is not a significant predictor of Grade 3 reading scores.

Grade 4 Hierarchical Multiple Regression Analyses

Mathematics

A three-stage hierarchical multiple regression was conducted with 2011 math scores as the dependent variables. Free/reduced lunch and special education was entered at stage one of the regression. The independent variable, 2010 test scores, was entered at stage two to account for past performance. SES status was entered at stage three with the primary goal to determine whether knowing the SES status is significant in predicting a school's overall performance. Tables 25-27 outlined the hierarchical multiple regression analysis results for Grade 3 female, male, and low-income math scores as the dependent variables.

Table 25

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 4 Female Math Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.34	0.17	-0.24	-0.02	0.17	-0.01	0.08	0.19	0.06
Special Education	-0.02	0.34	-0.01	0.18	0.30	0.07	0.07	0.31	0.03
2010 Test Score				0.54*	0.13	0.51	0.50	0.13	0.48*
SES status							-5.59	4.12	-0.17
R^2	0.06			0.26			0.28		
F	1.99			7.41*			6.09*		
ΔR^2	0.06			0.20			0.02		
ΔF	1.99			17.24*			1.84		

*Note: N=67 *p* < .05.*

Table 26

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 4 Male Math Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.31	0.16	-0.23	-0.07	0.16	-0.05	-0.03	0.18	-0.02
Special Education	-0.03	0.32	-0.01	0.06	0.29	0.02	0.02	0.30	0.01
2010 Test Score				0.47	0.13	0.46*	0.45	0.13	0.44*
SES status							-2.18	4.10	-0.07
R^2	0.05			0.23			0.23		
F	1.80			6.15*			4.63*		
ΔR^2	0.05			0.17			0.00		
ΔF	1.80			14.12*			0.28		

*Note: N=67 *p* < .05.*

Table 27

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 4 Low-income Math Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	0.05	0.16	0.04	0.22	0.12	0.18	0.26	0.14	0.21
Special Education	0.07	0.31	0.03	0.16	0.23	0.06	0.12	0.24	0.05
2010 Test Score				0.72	0.10	0.67*	0.70	0.11	0.65*
SES status							-1.98	3.31	-0.07
R^2	0.003			0.43			0.43		
F	0.09			15.87*			11.87*		
ΔR^2	0.003			0.43			0.003		
ΔF	0.09			47.30*			0.36		

*Note: N=67 *p* < .05.*

An examination of the Tables 25-27 to determine whether SES status was a significant predictor of a school's overall performance shows that none of the models has SES status as being significant. SES status is not a significant predictor of Grade 4 math scores.

Reading

A three-stage hierarchical multiple regression was conducted with 2011 Reading scores as the dependent variables. Free/reduced lunch and special education were entered at stage one of the regression. The independent variable, 2010 test scores was entered at stage two to account for past performance. SES status was entered at stage three with the primary goal to determine whether knowing the SES status is significant in predicting a school's overall performance. Tables 28-30 outlined the hierarchical multiple regression analysis results for Grade 4 male, female, and low-income reading scores as the dependent variables.

Table 28

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 4 Female Reading Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.43	0.14	-0.36*	-0.19	0.15	-0.16	-0.16	0.16	-0.14
Special Education	0.11	0.28	0.05	0.08	0.25	0.04	0.06	0.26	0.03
2010 Test Score				0.43	0.12	0.43*	0.42	0.12	0.43*
SES status							-1.56	3.44	-0.06
R^2	0.13			0.27			0.28		
F	4.62*			7.92*			5.91*		
ΔR^2	0.13			0.15			0.002		
ΔF	4.62*			12.81*			0.20		

*Note: N=67 *p* < .05.*

Table 29

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 4 Male Reading Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.46	0.15	-0.36*	-0.33	0.15	-0.26	-0.27	0.17	-0.21
Special Education	-0.12	0.29	-0.05	-0.15	0.28	-0.06	-0.20	0.29	-0.08
2010 Test Score				0.31	0.12	0.31*	0.29	0.12	0.29*
SES status							-3.08	3.85	-0.11
R^2	0.13			0.22			0.23		
F	4.95*			5.86*			4.53*		
ΔR^2	0.13			0.08			0.01		
ΔF	4.95*			6.78*			0.64		

*Note: N=67 *p* < .05.*

Table 30

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 4 Low-income Reading Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.18	0.13	-0.17	-0.08	0.12	-0.07	-0.05	0.13	-0.05
Special Education	0.14	0.26	0.07	0.05	0.22	0.03	0.04	0.23	0.02
2010 Test Score				0.49	0.10	0.53*	0.48	0.10	0.52*
SES status							-1.19	3.01	-0.05
R^2	0.03			0.30			0.30		
F	1.03			9.07*			6.75*		
ΔR^2	0.03			0.27			0.002		
ΔF	1.03			24.42*			0.16		

*Note: N=67 *p* < .05.*

An examination of Tables 29-30 to determine whether SES status was a significant predictor of a school's overall performance shows that none of the models has SES status as being significant. SES status is not a significant predictor of Grade 4 math scores.

Grade 5 Hierarchical Multiple Regression Analyses:

Mathematics

A three-stage hierarchical multiple regression was conducted with 2011 Math scores as the dependent variables. Free/reduced lunch and special education was entered at stage one of the regression. The independent variable, 2010 test scores was entered at stage two to account for past performance. SES status was entered at stage three with the primary goal to determine whether knowing the SES status is significant in predicting a school's overall performance. Tables 31-32 outlined the hierarchical multiple regression analysis results for Grade 5 female and low-income math scores as the dependent variables.

Table 31

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 5 Female Math Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.54	0.17	-0.37*	-0.06	0.16	-0.04	0.08	0.17	0.06
Special Education	0.075	0.33	0.03	0.12	0.27	0.04	0.00	0.27	0.00
2010 Test Score				0.67	0.11	0.66*	0.65	0.11	0.64*
SES status							-7.37	3.52	-0.22
R^2	0.14			0.46			0.50		
F	4.92*			17.58*			15.00*		
ΔR^2	0.14			0.32			0.04		
ΔF	4.92*			37.23*			4.38*		

*Note: N=67 *p* < .05.*

Table 32

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 5 Low-income Math Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.23	0.16	-0.17	0.10	0.14	0.08	0.14	0.16	0.11
Special Education	0.23	0.32	0.09	0.28	0.25	0.11	0.24	0.26	0.09
2010 Test Score				0.70	0.12	0.65*	0.68	0.12	0.63*
SES status							-2.28	3.50	-0.08
R^2	0.03			0.39			0.39		
F	1.13			13.30*			9.99*		
ΔR^2	0.03			0.35			0.004		
ΔF	1.13			36.38*			0.43		

*Note: N=67 *p* < .05.*

An examination of Tables 31-32 to determine whether SES status was a significant predictor of a school's overall performance shows Table 31 with SES status as significant and Table 32 SES status in Model 3 as not significant. The full model of percent free/reduced lunch, percent special education, 2010 test scores, and SES status to predict 2011 Grade 5 female MSP math score (Model 3) was statistically significant, $R^2 = .496$, $F(4, 61) = 14.998$, $p < .05$; adjusted $R^2 = .463$. The addition of 2010 test scores to the prediction of the 2011 Grade 5 female MSP

math score (Model 2) led to a statistically significant increase in R^2 of .324, $F(1, 62) = 37.23$, $p < .05$. The addition of SES status to the prediction of the 2011 Grade 5 female MSP math score (Model 3) also led to a statistically significant increase in R^2 of .036, $F(1, 61) = 4.383$, $p < .05$. For this research question, SES status was a negative predictor (beta = -0.22) of the outcome variable; as the number of SES schools increased, the Grade 5 female math scores decreased.

Reading

A three-stage hierarchical multiple regression was conducted with 2011 Reading scores as the dependent variables. Free/reduced lunch and special education was entered at stage one of the regression. The independent variable, 2010 test scores, was entered at stage two to account for past performance. SES status was entered at stage three with the primary goal to determine whether knowing the SES status is significant in predicting a school's overall performance. Tables 33-34 outlined the hierarchical multiple regression analysis results for Grade 5 male, female, and low-income reading scores as the dependent variables.

Table 33

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 5 Female Reading Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.52	0.13	-0.46*	-0.28	0.14	-0.24	-0.20	0.15	-0.17
Special Education	0.12	0.25	0.05	0.14	0.24	0.06	0.05	0.24	0.02
2010 Test Score				0.32	0.10	0.39*	0.28	0.11	0.34
SES status							-4.88	3.22	-0.19
R^2	0.20			0.31			0.33		
F	8.09*			9.21*			7.63*		
ΔR^2	0.20			0.10			0.03		
ΔF	8.09*			9.32*			2.30		

*Note: N=67 *p < .05.*

Table 34

Summary of Hierarchical Regression Analysis for Variables Predicting Grade 5 Low-income Reading Scores (N =67)

	Model 1			Model 2			Model 3		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Free/Reduced Lunch	-0.38	0.12	-0.36*	-0.22	0.13	-0.21	-0.09	0.14	-0.09
Special Education	0.22	0.24	0.11	0.26	0.23	0.13	0.14	0.23	0.07
2010 Test Score				0.30	0.11	0.33*	0.26	0.11	0.29
SES status							-7.19	3.00	-0.30*
R^2	0.13			0.22			0.29		
F	4.82*			5.93*			6.22*		
ΔR^2	0.13			0.09			0.07		
ΔF	4.82*			7.22*			5.75*		

*Note: N=67 *p* < .05.*

An examination of Tables 33-34 to determine whether SES status was a significant predictor of a school's overall performance shows Table 34 with SES status as significant and Table 34 SES status in Model 3 as not significant. The full model of percent free/reduced lunch, percent special education, 2010 test scores and SES status to predict 2011 Grade 5 low-income MSP reading score (Model 3) was statistically significant, $R^2 = .286$, $F(4, 62) = 6{,}221$, $p < .05$; adjusted $R^2 = .24$. The addition of 2010 test scores to the prediction of the 2011 Grade 5 low-income MSP reading score (Model 2) led to a statistically significant increase in R^2 of .089, $F(1, 63) = 7.222$, $p < .05$. The addition of SES status to the prediction of the 2011 Grade 5 low-income MSP reading score (Model 3) also led to a statistically significant increase in R^2 of .066, $F(1, 62) = 5.748$, $p < .05$. For this research question, SES status was a negative predictor (beta = -0.30) of the outcome variable; as the number of SES schools increased, the Grade 5 low-income reading scores decreased.

Summary

Finally, in terms of supplemental educational services (SES status), the results indicate that the addition of SES status was an influence on school performance on only three of the sixteen hierarchical multiple regression models, consisting of academic outcomes: 2011 Grade 5 female math scores, 2011 Grade 3 low-income math scores and 2011 Grade 5 low-income reading scores. Each of the three was a negative predictor where the beta was negative, meaning that the Title I schools that did not receive supplemental educational services outperformed the Title 1 schools that did receive supplemental educational services.

As previously mentioned, the results of the 2011 independent samples *t*-tests showed that there were significant differences between the SES and non-SES schools for the following characteristics: Black, Hispanic, White, and Limited English. Therefore, in order to ensure that the differences did not impact the results of the three significant hierarchical multiple regression models, the researcher ran sensitivity analyses (see Appendix B) where each characteristic was added to the models as a covariate. The results of the Sensitivity Analyses showed when controlling for the four characteristics that the significance of the three significant hierarchical multiple regression models was unchanged.

CHAPTER 5

FINDINGS, CONCLUSIONS AND IMPLICATIONS

Introduction

NCLB has impacted schools and school districts that have failed to meet the standards of Adequate Yearly Progress (AYP) for three or more consecutive years by requiring the provision of supplemental educational services to eligible students attending Title 1 schools (Burch, 2007). As a result of the failure to meet AYP, Washington State school districts had to provide funds for eligible students attending Title 1 schools to enroll into supplemental educational services programs. However, minimal research had been conducted to determine if, or to what extent, supplemental educational services affect student achievement. This lack of research impacted both parents and school districts, as their supplemental educational service choices were not data driven. Burch (2007) stated that research has failed to conclusively show what worked within SES programs and as such failed to show which services would lead to positive outcomes. At the time of the study, minimal evidence existed pertaining to the content of SES programs and student achievement. Current information pertaining to student learning was described in broad terms by the SES providers on their websites and in marketing materials. It was unclear if the use of supplemental services was helping to close the achievement gap or if it even ensured that student achievement would improve (Hursh, 2007).

Saifer and Speth (2007) described the initial efforts related to the implementation of SES programs. They identified information gaps and areas of further inquiry as well as delineating concerns and challenges for the state of Washington. Even though NCLB regulations clearly stated that SES providers should be removed from the list if they have not (1) increased students' achievement for two consecutive years or (2) provided services

consistent with applicable federal, state, and local health, safety, and civil rights requirements (Ross & Potter 2006), a review of the literature has shown that in the state of Washington, only one provider had been removed to date for not increasing student achievement (Saifer 7 Speth, 2007). Programmatic noncompliance had been the only reason that a provider was removed in the state of Washington.

Summary of the Study

The purpose of this study was to determine if there is a measurable academic benefit to providing supplemental educational services to Title I schools in five diverse school districts in Washington State. The study helped to determine the impact of the independent variables (percent free/reduced lunch, percent special education, 2010 test scores and treatment) on the dependent variables (academic outcomes). School achievement was analyzed using ex post facto school aggregate data derived from the Mastery of Student Performance (MSP) test, the Washington State Grade 3-5 state assessment, from two consecutive years (2010 and 2011). The population of this study consisted of approximately 478 Title I elementary public schools in Washington State with 205,599 students. The sample of this study consisted of 67 Title I elementary schools in five diverse schools districts in Washington State: Seattle, Spokane, Tacoma, Vancouver, and Yakima. Each of the schools districts was selected as the result of their level of supplemental educational services participation.

The gap in the knowledge in terms of supplemental educational services consists of the lack of studies that have truly examined the academic impact of supplemental educational services in the state of Washington (Saifer & Speth, 2007). At the time of this study, Washington State was the only state that had to obey the laws of NCLB (Center on Education Policy, 2015). Broadly, this study contributed to the current emphasis on providing additional support to improve student achievement. The results of this study can

be particularly useful to district administrators and principals who are investigating the effects and cost benefits of providing additional support. Parents will benefit from this study, as it may help them make educated decision in regards to SES. Specifically, the results from this study could inform Washington administrators and educators regarding the efficacy of the strategy of providing supplemental educational services.

There was one overarching research question and three subsidiary questions that guided the study. The overarching research question was the benefit of supplemental educational services to Title I schools that were provided the opportunity to receive those services. The three subsidiary questions drilled down and explored three academic outcomes: grade level, gender, and income. The research questions were as follows:

To what extent, if any, do Title I schools benefit from supplemental educational services as determined by Washington State Measurement of Student Progress scale score means (Grades 3, 4, and 5) in both Reading and Mathematics when controlling for past performance?

Research Questions

Subsidiary Question 1

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with grade levels?

Subsidiary Question 2

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education,

and past academic performance are treated as covariates; and are there differences in outcomes associated with gender?

Subsidiary Question 3

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with income levels?

A three-stage hierarchical multiple regression was conducted with reading and math scores as the dependent variables. Free/reduced lunch and special education were entered at stage one of the regression. The independent variable, 2010 test scores, was entered at stage two to account for past performance. SES status was entered at stage three with the primary goal to determine whether knowing the SES status is significant in predicting a school's overall performance. The results of this study did not show Title I schools benefited from supplemental educational services as determined by Washington State Measurement of Student Progress scale score means (Grade 3, 4, and 5) in both Reading and Mathematics when controlling for past performance.

The researcher sought to compare the Title I schools that received supplemental educational services to the Title I schools that did not receive supplemental educational services, taking into consideration the impact that percentage of students receiving free/reduced lunch, the percentage of special education students, and the percentage of students passing the state assessment the previous year. Even though there had been a limited number of studies in regard to the effectiveness of supplemental educational services, there were studies that did find that when services were provided, there were gains achieved in both reading and math on state

assessments (Stullich, 2009; Harding, 2012). Because Washington State had increasingly devoted a significant amount of Title I dollars to supplemental educational services and the seemingly never-ending search for a solution to underperforming students, this researcher was particularly interested in seeing the benefit of supplemental educational services on academic outcomes.

Findings

Subsidiary Question 1 - Comparison by Grade Level

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with grade levels?

For this research question, the researcher sought to determine if there was a difference with Grade levels 3, 4 or 5 when comparing schools that received supplemental services versus those schools that did not receive supplemental educational services, taking into consideration the percentage of students that were classified as special education students, the percentage who received free/reduced lunch, and the percentage of students that passed the state assessment the previous year. In terms of grade level there were only two grades of academic outcomes that were found to be significant, Grade 3 and Grade 5. Unfortunately, they were not within the same academic outcome; therefore, the researcher was unable to make a determination of which grade level benefited the most.

Subsidiary Question 2 - Comparison by Gender

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education,

and past academic performance are treated as covariates; and are there differences in outcomes associated with gender?

For this research question, the researcher sought to determine if there was a difference with male and female students when comparing schools that received Supplemental services versus those schools that did not receive supplemental educational services, taking into consideration the percentage of students that were classified as special education students, the percentage who received free/reduced lunch, and the percentage of students that passed the state assessment the previous year. In terms of gender, the only results that were found to be significant were the Grade 5 math scores. For Grade 5, when examining the female students' math scores, the beta coefficient for supplemental educational services status (-0.22) showed the non-SES Title I schools outperformed the Title I schools that received supplemental educational services. This concurred with Springer 2008, who found similar results when examining the effect of SES on student test score gains and whether particular subgroups of students benefit more from NCLB tutoring services.

Subsidiary Question 3 - Comparison by Income

To what extent is the school level academic performance explained by whether or not a school provides supplemental educational services when free/reduced lunch, special education, and past academic performance are treated as covariates; and are there differences in outcomes associated with income levels?

For this research question, the researcher sought to determine if there was a difference with the students that received free/reduced lunch when comparing the schools that received supplemental educational services versus those schools that did not receive supplemental educational services, taking into consideration the percentage of students that were classified as

special education students, the percentage of students who received free/reduced lunch, and the percentage of students that passed the state assessment the previous year. In terms of income, the only results that were found to be significant were the Grade 3 math scores and Grade 5 reading scores. For Grade 3, when examining the low-income math scores, the beta coefficient for supplemental educational services status (-0.29) showed the Non-SES Title I schools outperformed the Title I schools that received supplemental educational services. For Grade 5, when examining low income reading scores, the beta coefficient for supplemental educational services status (-0.30) showed the non-SES Title 1 schools outperformed the Title I schools that received supplemental educational services. This aligned with Heistad (2007), Ross (2008) and Munoz (2008), who found that it appeared that there were no significant differences on both reading and math achievement between students who received SES and those who were eligible in SES but did not receive the services.

The only significant findings in the study conducted showed the non-SES Title I schools outperformed the SES Title I schools. This aligned with much of the research reviewed within this study but counter to what research has proved in terms of afterschool programs. Research has shown that tutoring opportunities outside of the normal school day can help students academically (SES Quality Control Center, 2005). This study did not show this to be true. Instead it showed that the students in Title I schools that did not receive SES performed better than their peers that received SES.

Conclusion

With Washington State having spent millions of dollars on supplemental educational services and the achievement gap getting wider and wider between Black/Hispanic students and their White counterparts, it seems odd that since 2002, the year Washington began supplemental

educational services, there has been only one study conducted on the effectiveness of supplemental educational services (Saifer & Speth, 2007). As a result of this clear lack of research and body of knowledge, the researcher conducted this study to examine the effectiveness of supplemental educational services by comparing Title I schools in five school districts that provided supplemental educational services to Title I schools to those schools that were not provided supplemental educational services.

As previously stated in the literature review, the sample of studies into the effectiveness of the supplemental educational services program results were mixed at best. The current study, relative to the five school districts in Washington State, did not concur with the findings of the majority of the research literature reviews. As mentioned, only three academic outcomes were determined to be significant, and all three of those resulted in a negative beta, meaning that those particular subgroups within those Title I schools outperformed similar subgroups at the Title I schools that did receive supplemental educational services. Thus, considering the amount of dollars that the state had allocated for those services, it may be time to thoroughly examine the data on the services provided to determine the best course of action.

NCLB regulations state that supplemental educational services providers should be removed from the list if they have not (1) increased students' achievement for two consecutive years or (2) provided services consistent with applicable federal, state, and local health, safety, and civil rights requirements (Ross & Potter, 2006). A review of the literature has shown that in the state of Washington only one provider has been removed to date for not increasing student achievement (Saifer & Speth, 2007). Programmatic noncompliance has been the only reason that a provider was removed in the state of Washington thus far. At the beginning of this research study, the researcher contacted the state officials who were in

charge of or had a connection to supplemental educational services. After those discussions, for reason beyond the officials' control, there was not an accountability system in place that would facilitate dealing with providers that were not performing up to standard. According to the state officials, there were attempts to seek guidance regarding the removal of supplemental educational providers that did not demonstrate progress, but the U.S. Department of Education left that completely to the discretion of the individual states.

Even if the states wanted to remove a provider, they could not because of the lack of student achievement data. In the Saifer and Speth (2007) study, they found that the only data that were collected at the state level was the number of eligible students, the number of students served, the costs associated with the services, and the providers that were contracted by the districts. That was the conclusion in 2007; eight years later in 2015, according to state officials, nothing had changed. The state had the same reporting requirements.

Washington State approved the providers for supplemental educational services. According to the State's website, every provider, at the highest level, must deliver services that meet the following criteria:

- Consistency with the content and instruction used by the district
- Alignment with the state's academic standards
- Services designed to increase student achievement
- High-quality, research-based instructional strategies

Since Title I schools that received supplemental educational services did not seem to improve in comparison to the schools that did not receive supplemental educational services, the programs offered by the providers may not have met the state's criteria.

This study seemed to determine that supplemental educational services may not benefit students academically. For schools to benefit, supplemental educational service providers need to consistently meet the four criteria laid out by the state, namely providing services that increase student achievement that is of high quality and research-based. Up to this point in time, supplemental educational services appears to be vastly different depending in which part of the state one is receiving services. Until the state and districts are able to hold the providers accountable, there is minimal chance that supplemental educational services will be able to be the remedy that it was once billed to be.

The researcher would like to stress that the findings within the study do not say that SES schools are not doing well. Considering the fact that the researcher was able to use only school-level data versus student-level data, there could have been groups of students that were doing better although the results may have shown otherwise. Without using student-level data, we are not allowed to make such inferences.

Implications

From the inception of supplemental educational services in 2002 to 2012, over $50 million dollars had been available for supplemental educational services in the state of Washington from Title I dollars; and yet, to date there is little evidence demonstrating its effectiveness in assisting the most underprivileged students at Title I schools trying to achieve minimum standards set forth by the federal government. The implications for not acquiring this evidence can be delineated at three levels: federal, state, and local. The researcher attempted to provide such evidence but unfortunately was limited in scope by a lack of a monitoring and evaluation system, a centralized data collection repository, and finally a true sense of purpose other than being used as a political bargaining chip.

Without clear evidence of the effectiveness of supplement educational services, the federal implications in the state of Washington have been far reaching. As of 2015, Washington State is the only state that has to abide by the law of NCLB after failing to obtain a waiver as the other 49 states in the union have done. In an excerpt from a letter in April 2014 from Secretary of Education Arne Duncan to the Superintendent of Public Instruction, Randy Dorn, Duncan wrote the following:

> One of the commitments that Washington—and every State that received ESEA flexibility made was to put in place teacher and principal evaluation and support systems that take into account information on student learning growth based on high-quality college- and career-ready (CCR) State assessments as a significant factor in determining teacher and principal performance levels, along with other measures of professional practice such as classroom observations . . . .
>
> However, because those efforts were unsuccessful, and your legislature is not scheduled to reconvene until January 2015, I cannot extend Washington's authority to implement ESEA flexibility, and Washington and its LEAs must resume implementing the requirements of Title I of the ESEA, as amended by the No Child Left Behind Act of 2001 (NCLB), as well as all other ESEA requirements that were waived under ESEA flexibility, for the 2014–2015 school year. This means that, among other actions that the State and LEAs will have to resume, LEAs in Washington must once again set aside 20 percent of their Title I funds for public school choice and supplemental educational services rather than having the flexibility to use those funds for other activities to improve student achievement in low-achieving schools (see Appendix C).

Basically, what Washington failed to do in order to meet the requirements to gain the waiver was not having their students' state test scores tied to their evaluations. The Washington law says statewide test scores can be a factor in teacher evaluations. According to Superintendent of Public Instruction Randy Dorn, the federal government wanted the word *can* to be changed to *must* or Washington would not meet its requirement for a waiver from the federal education law. As a result of the language not being changed, Washington must meet the deadlines of NCLB, mainly that 100% of students would be reading and doing math at grade level. Washington has not meet the 100% requirement; therefore, each district has to weigh the pros and cons of either fulfilling the requirements of NCLB or not receiving federal dollars. In this case, supplemental educational services is not being viewed as a potential solution to boost the education of struggling students in lieu of effectiveness studies, but as a part of the punishment from the federal government to the state of Washington for not following their "recommendations"; and without clear evidence of the impact of supplemental educational services, Washington cannot argue one way or the other whether being essentially forced to implement supplemental educational services was an effective remedy or not for struggling students.

The implication at the state level of not having clear evidence of the effectiveness of supplemental educational services is primarily one of accountability. As mentioned several times, Washington State does not possess the necessary evidence to monitor and evaluate providers. If supplemental educational services is going to be a successful boost to the education of struggling students, it must have providers that are deemed effective. Saifer and Speth (2007) recommended in their study that Washington State develop such systems, but to date no such system has been developed.

The implications at the local level consist of the impact of not having clear evidence of the effectiveness of supplemental educational services on school districts, parents, and students. With the school districts as the conduit between the providers and the parents/students, research has shown that if supplemental educational services is going to be successful in its purpose, it starts with the school districts being mindful stewards of the resources being provided to them. In terms of parents and students, the lack of clear evidence leads to decisions based upon "slick marketing pitches" versus having decisions based upon concrete data.

As an unfunded mandate, the government placed the bulk of the responsibility of the implementation of supplemental educational services in the hands of the school districts. Ironically, requiring the entity to be punished for not having their students meeting established standards be the ones that properly and effectively implement a program that takes 20% of their Title I dollars to provide additional support for such students, even in an ideal world, does not seem like and has been proven not to be an effective system. One solution to this dilemma is to take some of the monitoring responsibilities of the school districts and give it to the state officials so that a non-conflicting party is doing the evaluation of the programs.

Last, the implication in terms of parents and students, not having clear evidence of the effectiveness of supplemental educational services is the fact that instead of parents making data-driven decisions, they are making decisions based upon "slick marketing pitches." According to the State of Washington, districts are only required to do the following:

1. Let parents/guardians know about the availability of SES at least once a year.
2. Publish the following prominently on the school website:
    a. How many students are eligible in the district for the upcoming school year; and in the following school year, how many received SES

b. For the current school year, the SES providers–approved by OSPI–able to work in the district and where they deliver services.

Nowhere is it mentioned where parents can find information regarding the quality or history of achievement data of the supplemental educational services so that they can make an informed decision. This is exactly what parents need, to know that the providers provided are of high quality and that the quality of the providers is determined by the collection of achievement data gathered by the supplemental educational services providers.

Future Research

Future research in the area of supplemental educational services could prove to be a worthwhile endeavor considering that there continues to be a large segment of the population of students that are not meeting state and federal government standards. Recommendations for future research are as follows:

1. Replicate this study with a large sample of districts to include urban, suburban, or rural districts.
2. As the researcher was able to obtain only school-level data to evaluate the effectiveness of supplemental educational services, it would be beneficial for a study to be conducted with the data at the student level, where there are pretests and posttests given to the students.
3. Evaluate the providers in the state to determine which are the most effective and then take that knowledge to use throughout the state.
4. Do a comparison of supplemental educational services and other after-school tutoring programs—i.e., the 2lst Century program—to determine which programs yield the best results in terms of student

achievement; and if there is overlap, determine how that information can be used in order to get the "biggest bang for the governmental buck."

5. Conduct a qualitative study to survey every level involved with supplemental educational services. This includes the state level office that has the oversight in terms of the providers; the district, which is the liaison between the schools and parents/students; the schools so that one can get a true sense of what is real and what is just perception that is biased as a result of the notion that SES is a takeaway program due to the 20% set-aside requirement; and the parents/students, to get a sense of how the end users view the tutoring/system that is being provided.
6. Conduct an evaluation of the providers' curriculum to determine if it is meeting the expectations that were set forth by NCLB.
7. Conduct an evaluation of the supplemental educational services implementation at every level to determine if there are areas that could be improved upon.

Summary

The purpose of this study was to determine if there was a measurable academic benefit to providing supplemental educational services to Title I schools in five diverse school districts in Washington State. In the literature review, the sample of studies conducted on the effectiveness of the supplemental educational services program results showed mixed results. Although mixed, they did demonstrate the potential of the benefits of supplemental education services.

Unfortunately, in the school districts studied, when the Title I schools that were provided supplemental educational services were compared to the Title I schools that were not provided the services, they did not show a significant increase in academic outcomes. The original goal of supplemental educational services was to provide tutoring to low-income students in failing Title I schools in order to boost their academic achievement. As of 2015, that goal has not been reached; and unless more time and effort are put into supplemental educational services, it will be more of a hindrance than a remedy.

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APPENDIX A

Correlations Analyses

Table 35

Pearson Correlations for Main Study Variables – Math Outcomes

Correlations

		FemaleMathProf_2011_G3	FemaleMathProf_2011_G4	FemaleMathProf_2011_G5	MaleMathProf_2011_G3	MaleMathProf_2011_G4	LowIncomeMathProf_2011_G3	LowIncomeMathProf_2011_G4	LowIncomeMathProf_2011_G5	PercentFreeorReducedPricedMeals_2011
FemaleMathProf_2011_G3	Pearson Correlation	1	.367**	.491**	.693**	.403**	.877**	.319**	.459**	-.425**
	Sig. (2-tailed)		0.002	0	0	0.001	0	0.008	0	0
	N	67	67	67	67	67	67	67	67	67
FemaleMathProf_2011_G4	Pearson Correlation	.367**	1	.554**	.332**	.621**	.339**	.835**	.501**	-.242*
	Sig. (2-tailed)	0.002		0	0.006	0	0.005	0	0	0.049
	N	67	67	67	67	67	67	67	67	67
FemaleMathProf_2011_G5	Pearson Correlation	.491**	.554**	1	.471**	.508**	.489**	.527**	.891**	-.367**
	Sig. (2-tailed)	0	0		0	0	0	0	0	0.002
	N	67	67	67	67	67	67	67	67	67
MaleMathProf_2011_G3	Pearson Correlation	.693**	.332**	.471**	1	.372**	.896**	.277*	.481**	-.397**
	Sig. (2-tailed)	0	0.006	0		0.002	0	0.023	0	0.001
	N	67	67	67	67	67	67	67	67	67
MaleMathProf_2011_G4	Pearson Correlation	.403**	.621**	.508**	.372**	1	.385**	.832**	.420**	-0.23
	Sig. (2-tailed)	0.001	0	0	0.002		0.001	0	0	0.061
	N	67	67	67	67	67	67	67	67	67
LowIncomeMathProf_2011_G3	Pearson Correlation	.877**	.339**	.489**	.896**	.385**	1	.351**	.524**	-.256*
	Sig. (2-tailed)	0	0.005	0	0	0.001		0.004	0	0.037
	N	67	67	67	67	67	67	67	67	67
LowIncomeMathProf_2011_G4	Pearson Correlation	.319**	.835**	.527**	.277*	.832**	.351**	1	.518**	0.045
	Sig. (2-tailed)	0.008	0	0	0.023	0	0.004		0	0.719
	N	67	67	67	67	67	67	67	67	67
LowIncomeMathProf_2011_G5	Pearson Correlation	.459**	.501**	.891**	.481**	.420**	.524**	.518**	1	-0.162
	Sig. (2-tailed)	0	0	0	0	0	0	0		0.19
	N	67	67	67	67	67	67	67	67	67
PercentFreeorReducedPricedMeals_2011	Pearson Correlation	-.425**	-.242*	-.367**	-.397**	-0.23	-.256*	0.045	-0.162	1
	Sig. (2-tailed)	0	0.049	0.002	0.001	0.061	0.037	0.719	0.19	
	N	67	67	67	67	67	67	67	67	67

**. Correlation is significant at the 0.01 level (2-tailed).

Table 36

Pearson Correlations for Main Study Variables – Reading Outcomes

Correlations

		FemaleRdgProf_2011_G3	FemaleRdgProf_2011_G4	FemaleRdgProf_2011_G5	MaleRdgProf_2011_G3	MaleRdgProf_2011_G4	LowIncomeRdgProf_2011_G3	LowIncomeRdgProf_2011_G4	LowIncomeRdgProf_2011_G5	PercentFreeorReducedPricedMeals_2011
FemaleRdgProf_2011_G3	Pearson Correlation	1	.352**	.514**	.619**	.337**	.804**	.340**	.503**	-.446**
	Sig. (2-tailed)		0.003	0	0	0.005	0	0.005	0	0
	N	67	67	67	67	67	67	67	67	67
FemaleRdgProf_2011_G4	Pearson Correlation	.352**	1	.441**	.305*	.424**	.288*	.728**	.408**	-.352**
	Sig. (2-tailed)	0.003		0	0.012	0	0.018	0	0.001	0.003
	N	67	67	67	67	67	67	67	67	67
FemaleRdgProf_2011_G5	Pearson Correlation	.514**	.441**	1	.393**	.272*	.376**	.326**	.842**	-.449**
	Sig. (2-tailed)	0	0		0.001	0.026	0.002	0.007	0	0
	N	67	67	67	67	67	67	67	67	67
MaleRdgProf_2011_G3	Pearson Correlation	.619**	.305*	.393**	1	.337**	.842**	.313**	.461**	-.358**
	Sig. (2-tailed)	0	0.012	0.001		0.005	0	0.01	0	0.003
	N	67	67	67	67	67	67	67	67	67
MaleRdgProf_2011_G4	Pearson Correlation	.337**	.424**	.272*	.337**	1	.251*	.807**	0.218	-.363**
	Sig. (2-tailed)	0.005	0	0.026	0.005		0.04	0	0.077	0.003
	N	67	67	67	67	67	67	67	67	67
LowIncomeRdgProf_2011_G3	Pearson Correlation	.804**	.288*	.376**	.842**	.251*	1	.315**	.438**	-0.182
	Sig. (2-tailed)	0	0.018	0.002	0	0.04		0.009	0	0.14
	N	67	67	67	67	67	67	67	67	67
LowIncomeRdgProf_2011_G4	Pearson Correlation	.340**	.728**	.326**	.313**	.807**	.315**	1	.342**	-0.163
	Sig. (2-tailed)	0.005	0	0.007	0.01	0	0.009		0.005	0.187
	N	67	67	67	67	67	67	67	67	67
LowIncomeRdgProf_2011_G5	Pearson Correlation	.503**	.408**	.842**	.461**	0.218	.438**	.342**	1	-.346**
	Sig. (2-tailed)	0	0.001	0	0	0.077	0	0.005		0.004
	N	67	67	67	67	67	67	67	67	67
PercentFreeorReducedPricedMeals_2011	Pearson Correlation	-.446**	-.352**	-.449**	-.358**	-.363**	-0.182	-0.163	-.346**	1
	Sig. (2-tailed)	0	0.003	0	0.003	0.003	0.14	0.187	0.004	
	N	67	67	67	67	67	67	67	67	67

**. Correlation is significant at the 0.01 level (2-tailed).

APPENDIX B

Grade 3 Low Income Math

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.267[a]	.072	.043	15.8585	.072	2.466	2	64	.093
2	.554[b]	.307	.262	13.9245	.235	10.507	2	62	.000
3	.596[c]	.355	.302	13.5422	.048	4.549	1	61	.037

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, PercentBlack_2011, LowIncomeMathProf_2010_G3

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, PercentBlack_2011, LowIncomeMathProf_2010_G3, SES status

d. Dependent Variable: LowIncomeMathProf_2011_G3

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.267[a]	.072	.043	15.8585	.072	2.466	2	64	.093
2	.543[b]	.295	.249	14.0431	.223	9.809	2	62	.000
3	.592[c]	.350	.297	13.5869	.056	5.233	1	61	.026

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeMathProf_2010_G3, PercentHispanic_2011

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeMathProf_2010_G3, PercentHispanic_2011, SES status

d. Dependent Variable: LowIncomeMathProf_2011_G3

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.267[a]	.072	.043	15.8585	.072	2.466	2	64	.093
2	.544[b]	.296	.250	14.0324	.224	9.871	2	62	.000
3	.591[c]	.349	.296	13.5988	.054	5.017	1	61	.029

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeMathProf_2010_G3, PercentWhite_2011

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeMathProf_2010_G3, PercentWhite_2011, SES status

d. Dependent Variable: LowIncomeMathProf_2011_G3

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.362[a]	.131	.104	11.3408	.131	4.818	2	64	.011
2	.470[b]	.221	.171	10.9089	.090	3.584	2	62	.034
3	.542[c]	.293	.235	10.4749	.072	6.244	1	61	.015

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeMathProf_2010_G3, PercentTransitionalBilingual_2011

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeMathProf_2010_G3, PercentTransitionalBilingual_2011, Treatment

d. Dependent Variable: LowIncomeMathProf_2011_G3

Grade 5 Low Income Reading

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.362[a]	.131	.104	11.3408	.131	4.818	2	64	.011
2	.491[b]	.241	.192	10.7692	.110	4.487	2	62	.015
3	.542[c]	.294	.236	10.4728	.053	4.560	1	61	.037

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeRdgProf_2010_G5, PercentTransitionalBilingual_2011

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeRdgProf_2010_G5, PercentTransitionalBilingual_2011, SES status

d. Dependent Variable: LowIncomeRdgProf_2011_G5

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.362[a]	.131	.104	11.3408	.131	4.818	2	64	.011
2	.472[b]	.222	.172	10.8980	.092	3.653	2	62	.032
3	.547[c]	.299	.242	10.4289	.077	6.703	1	61	.012

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, PercentBlack_2011, LowIncomeRdgProf_2010_G5

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, PercentBlack_2011, LowIncomeRdgProf_2010_G5, SES status

d. Dependent Variable: LowIncomeRdgProf_2011_G5

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.362[a]	.131	.104	11.3408	.131	4.818	2	64	.011
2	.524[b]	.274	.228	10.5273	.144	6.137	2	62	.004
3	.567[c]	.322	.266	10.2630	.047	4.235	1	61	.044

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeRdgProf_2010_G5, PercentHispanic_2011

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeRdgProf_2010_G5, PercentHispanic_2011, SES status

d. Dependent Variable: LowIncomeRdgProf_2011_G5

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.362[a]	.131	.104	11.3408	.131	4.818	2	64	.011
2	.470[b]	.221	.171	10.9089	.090	3.584	2	62	.034
3	.542[c]	.293	.235	10.4749	.072	6.244	1	61	.015

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeRdgProf_2010_G5, PercentWhite_2011

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, LowIncomeRdgProf_2010_G5, PercentWhite_2011, SES status

d. Dependent Variable: LowIncomeRdgProf_2011_G5

Grade 5 Female Math

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.362[a]	.131	.103	15.7865	.131	4.743	2	63	.012
2	.678[b]	.460	.424	12.6491	.329	18.564	2	61	.000
3	.714[c]	.509	.468	12.1570	.049	6.038	1	60	.017

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, PercentBlack_2011, FemaleMathProf_2010_G5

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, PercentBlack_2011, FemaleMathProf_2010_G5, SES status

d. Dependent Variable: FemaleMathProf_2011_G5

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.362[a]	.131	.103	15.7865	.131	4.743	2	63	.012
2	.703[b]	.494	.461	12.2378	.363	21.917	2	61	.000
3	.727[c]	.528	.489	11.9226	.034	4.268	1	60	.043

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, PercentHispanic_2011, FemaleMathProf_2010_G5

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, PercentHispanic_2011, FemaleMathProf_2010_G5, SES status

d. Dependent Variable: FemaleMathProf_2011_G5

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.362[a]	.131	.103	15.7865	.131	4.743	2	63	.012
2	.683[b]	.466	.431	12.5715	.335	19.172	2	61	.000
3	.711[c]	.506	.465	12.1934	.040	4.842	1	60	.032

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, FemaleMathProf_2010_G5, PercentWhite_2011

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, FemaleMathProf_2010_G5, PercentWhite_2011, SES status

d. Dependent Variable: FemaleMathProf_2011_G5

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.362[a]	.131	.103	15.7865	.131	4.743	2	63	.012
2	.684[b]	.468	.433	12.5555	.337	19.298	2	61	.000
3	.713[c]	.508	.467	12.1718	.040	4.907	1	60	.031

a. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011

b. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, FemaleMathProf_2010_G5, PercentTransitionalBilingual_2011

c. Predictors: (Constant), PercentFreeorReducedPricedMeals_2011, PercentSpecialEducation_2011, FemaleMathProf_2010_G5, PercentTransitionalBilingual_2011, SES status

d. Dependent Variable: FemaleMathProf_2011_G5

APPENDIX C

Washington Extension Determination Letter

April 24, 2014

Honorable Randy Dorn
Superintendent of Public Instruction
State Department of Public Instruction
P.O. Box 47200
Olympia, WA 98504

Dear Superintendent Dorn:

This letter responds to your letter of March 27, 2014, in which you formally requested a one-year extension of the flexibility I granted to Washington under the Elementary and Secondary Education Act of 1965 (ESEA). I appreciate your continuing interest in ESEA flexibility and was pleased to hear that, as a State leader, you believe it has enabled school improvement efforts in Washington to significantly increase student achievement.

As you know, Washington's request for ESEA flexibility was approved based on Washington's commitments to carry out certain actions in support of key education reforms. In return for those commitments, we granted your State and your local school districts significant flexibility. However, Washington has not been able to keep all of its commitments. Thus, although Washington has benefitted from ESEA flexibility, I regret that Washington's flexibility will end with the 2013–2014 school year.

One of the commitments that Washington — and every State that received ESEA flexibility — made was to put in place teacher and principal evaluation and support systems that take into account information on student learning growth based on high-quality college- and career-ready (CCR) State assessments as a significant factor in determining teacher and principal performance levels, along with other measures of professional practice such as classroom observations. These systems also require that all teachers and principals receive robust, timely, and meaningful feedback on their performance and support in order to inform and improve instruction so that all students meet the expectations of new CCR standards. Including student learning growth as a significant factor among the multiple measures used to determine performance levels is important as an objective measure to differentiate among teachers and principals who have made significantly different contributions to student learning growth and closing achievement gaps.

Because Washington first made that commitment in its waiver application of February 27, 2012, and Washington was unable to take the steps necessary to fulfill that commitment even after having been given an additional school year (2012–2013) to do so, it was placed on high-risk status on August 14, 2013. Washington's high-risk designation specified that the State must submit, by May 1, 2014, final guidelines for teacher and principal evaluation and support systems that meet the requirements of ESEA flexibility, including requiring local educational agencies (LEAs) to use student achievement on CCR State assessments to measure student learning growth in those systems for teachers of tested grades and subjects. Your March 27, 2014, letter indicates that the State will be unable to provide such guidelines. I recognize that requiring the use of statewide assessments to measure student learning growth requires a legislative change, and that Governor Inslee and your office worked diligently to obtain that change. I thank you for your leadership and courage in those efforts.

However, because those efforts were unsuccessful, and your legislature is not scheduled to reconvene until January 2015, I cannot extend Washington's authority to implement ESEA flexibility, and Washington and its LEAs must resume implementing the requirements of Title I of the ESEA, as

amended by the No Child Left Behind Act of 2001 (NCLB), as well as all other ESEA requirements that were waived under ESEA flexibility, for the 2014–2015 school year. This means that, among other actions that the State and LEAs will have to resume, LEAs in Washington must once again set aside 20 percent of their Title I funds for public school choice and supplemental educational services rather than having the flexibility to use those funds for other activities to improve student achievement in low-achieving schools. Should Washington obtain the requisite authority to resolve its condition, I would be pleased to reconsider Washington's request to implement ESEA flexibility at any time.

I appreciate that transitioning back to NCLB is not desirable, and will not be simple. Attached for your reference is a list of NCLB requirements with which the State and its LEAs must resume complying starting with the 2014–2015 school year. Assistant Secretary for Elementary and Secondary Education Deborah Delisle will follow up with you to discuss the transition and help you think about ways to preserve the gains Washington has made under ESEA flexibility.

Thank you again for your leadership and your efforts to keep the commitments Washington made in its ESEA flexibility request. Thank you, as well, for your continued focus on enhancing education for all of Washington's children.

Sincerely,

/s/

Arne Duncan