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Making a Difference: Measuring the Effectiveness of Mississippi Teacher Corps Teachers as Compared to Non-Mississippi Teacher Corps Teachers

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MAKING A DIFFERENCE: MEASURING THE EFFECTIVENESS OF MISSISSIPPI TEACHER CORPS TEACHERS AS COMPARED TO NON-MISSISSIPPI TEACHER CORPS TEACHERS

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ABSTRACT

The Mississippi Teacher Corps (MTC) was founded in 1989. Over the past 23 years more than 500 MTC participants have taught in critical-needs schools in Mississippi. The purpose of this study was to examine the effectiveness of Mississippi Teacher Corps teachers as compared to non-Mississippi Teacher Corps teachers.

The method of research was a quantitative analysis of standardized test scores from the "Rural County School District" for school year 2009-2010. The analysis showed that there is no significant difference in mean test scores of students who are taught by MTC teachers as compared to non-MTC teachers but that, in both the fall and spring, student test scores are significantly higher in MTC classrooms.

DEDICATION

To the students of Mississippi.

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CHAPTER 1

INTRODUCTION

Each fall, across the United States, students return to school. Most students attend public school and the majority of public school teachers receive their training and certification as undergraduate majors at an accredited School of Education. This training and certification process usually takes four years and is called traditional-route certification (Constantine, 2009).

In the early 1980s several states eased certification standards to allow non-education majors to enter the teaching profession and help alleviate the nationwide teacher shortage. The easing of certification standards paved the way for different types of certification programs that did not include the training standards of traditional Schools of Education. These types of certification programs are called alternate-route certification. Alternate-route certification programs offer an abbreviated teacher-training component that allows non-education majors to become certified. Alternate-route certification programs vary but most do not include student teaching and most do not include more than 10 weeks of training (McConnell, 2005).

The National Center for Alternative Certification states that, as of 2010, 48 states and the District of Columbia offer an alternate-route certification program. Many states offer more than one type of alternate-route certification. Mississippi, for example, offers four different alternate-route certification programs.

Statement of the Problem

Over the past 20 years two similar alternate-route certification programs, Teach For America (TFA) and the Mississippi Teacher Corps (MTC), have trained and certified non-education majors for placement in high-poverty school districts. As part of participation in the respective programs TFA and MTC participants are required to teach for two years. The initial summer training for each program lasts between five and eight weeks (Thompson, 1997).

TFA is a national program with more than 7,000 first and second-year teachers spread over 35 rural and urban regions, including the state of Mississippi, for school year 2008 - 2009. TFA is funded through a combination of private donations, grants, and federal money (TFA Annual Report, 2009).

MTC is a state-funded program based solely in Mississippi. In school year 2009 - 2010, 53 first and second-year MTC teachers taught in eight school districts in Mississippi (MTC Annual Report, 2010). Seven of the eight school districts in which MTC teachers were placed were classified by the state of Mississippi as critical-shortage school districts. In Mississippi a school district is designated as critical-shortage if the district has 60 or more teaching positions and 10% or more of those positions are filled by an uncertified teacher or the district has less than 60 teaching positions and 15% or more of those teaching positions are filled by an uncertified teacher (J. Cooper, personal communication, March 30, 2011).

In 2001, the implementation of No Child Left Behind (NCLB) mandated standardized testing across multiple grades and multiple subject-areas. Over the past decade researchers have attempted to measure the effectiveness of teachers by examining the impact that teachers have on students' standardized test scores. Several of these studies have compared TFA teachers to non-TFA teachers. The research is mixed "with results affected by the experience level of the TFA teachers and the group of teachers with whom they are compared" (Helig, 2010, p. 2).

A study by Darling-Hammond, Holtzman, Gatlin, and Helig (2005, p. 1) concluded, "uncertified TFA recruits are less effective than certified teachers, and perform about as well as other uncertified teachers." A study by the Urban Institute "suggested that the TFA effect, at least in the grades and subjects investigated, exceeds the impact of additional years of experience, implying that TFA teachers are more effective than experienced secondary school teachers" (Xu, Hanneway, & Taylor, 2009, p. 3). There has been no corresponding research examining the impact of MTC teachers on student achievement using standardized test data.

To comply with NCLB the state of Mississippi requires all public school students to take the Mississippi Curriculum Test Second Edition (MCT2). Students take these exams once a year in various grades and in various subjects. In addition to the MCT2 several school districts contract with independent companies to test students at regular intervals throughout the school year. One company is the Northwest Evaluation Association (NWEA), a non-profit organization, based in Portland, OR. NWEA uses a standardized test called the Measures of Academic Progress (MAP). There is a .78 correlation coefficient between MAP and the MCT2 8th Grade Math test and .74 correlation coefficient between MAP and the MCT2 8th Grade Reading test. This indicates a high degree of linear correlation between MAP and MCT2 (Northwest Evaluation Association, 2011). The Rural County School District (RCSD), a name the author has given a district in north Mississippi, contracts with the NWEA to assess students during the school year. RCSD students are given the MAP assessment at the beginning and end of each school year.

Purpose Statement

The purpose of this multivariable study is to determine the relationship between MAP scores of students taught by non-Mississippi Teacher Corps teachers and MAP scores of students

taught by Mississippi Teacher Corps teachers. The population will be all students attending the RCSD and given the MAP assessment during the school year 2009-2010.

Hypothesis

Ho: There is no significant difference in mean students' Measures of Academic Progress scores when taught by Mississippi Teacher Corps teachers or non-Mississippi Teacher Corps teachers when controlling for pre-test scores.

Statistical Tests and Data Analysis

An analysis of covariance (ANCOVA) will be used to analyze the data. The type of teacher (MTC or non-MTC) is the independent variable, the mean MAP test scores from May are the dependent variable, and the mean MAP test scores from September are the covariate.

Limitations of the Study

There are several limitations of the study. First, the MAP test data has already been collected by the RCSD. The researcher had no involvement in the data collection. Second, the sample size is small as the researcher is only examining one school district over the course of one school year. Third, the sample size includes only students taking MAP. Fourth, the data is only available at the classroom level, not at the individual student level. Fifth, the study only differentiates between MTC teachers and non-MTC teachers. The study does not address the training of the non-MTC teachers. Non-MTC teachers may have been: traditionally trained and certified; trained through an alternate-route program; or certified through some other method. Non-MTC teachers may have received years of teacher training or, if certified as an expert citizen, no training at all. Sixth, the study relies solely on the MAP assessment as a measurement of teacher effectiveness.

Implications and Purpose of the Study

This research project will contribute to the existing literature of measuring teacher effectiveness through student achievement. This research project will help the state of Mississippi measure the effect that MTC has on student achievement. While the limited data available suggest that TFA teachers are having an impact on student achievement there is no corresponding data for MTC teachers.

Definitions

- Alternate-Route Certification – Alternate-route certification is a type of teacher certification that does not include an undergraduate degree in curriculum and instruction. Alternate-route certification usually involves a compressed teacher-training period. Alternate-route certification usually does not include student teaching.
- Critical-Shortage School Districts – A school district in Mississippi is designated as critical-shortage if (a) the district has 60 or more teaching positions with 10% or more of those positions filled by uncertified teachers or (b) the district has less than 60 teaching positions and 15% or more of those teaching positions were filled by uncertified teachers (J. Cooper, personal communication, March 30, 2011).
- Measures of Academic Progress – The Measures of Academic Progress (MAP) is a series of tests administered by the Northwest Evaluation Association (NWEA). For school year 2009 – 2010, at the RCSD, all students in grades three through ten took the MAP in math, reading, and language usage. The MAP test was administered in both the fall and spring. A student's score on the MAP is given as a Rasch Unit (RIT). According to the "Mississippi Linking Study" (2011) the correlation coefficient between MAP and the Mississippi Curriculum 8th Grade Math test is .78. The correlation coefficient between MAP and the Mississippi Curriculum 8th Grade Reading test is .74.

- Mississippi Curriculum Test - Each school year all Mississippi public school students in grades three through eight take the Mississippi Curriculum Test Second Edition (MCT2). In grades nine through twelve students are assessed once in Algebra I, U.S. History, English, and Biology. In grades three through eight the MCT2 is comprised of two tests: the mathematics MCT2 and the language arts MCT2. According to the MCT2 guide published by the Mississippi State Department of Education (MDE) the MCT2 "contains test items of varying degrees of difficulty that are aligned to the content, skills, and processes represented by Mississippi's academic content standards as specified in the state curriculum frameworks and the academic performance level descriptors" (2010, p. 1).
- Mississippi Teacher Corps – The Mississippi Teacher Corps (MTC) is a two-year alternate-route teaching program based in Mississippi. College graduates from across the country are selected, trained, and placed in critical-needs school districts in Mississippi. Unlike most alternate-route teaching programs MTC does include student teaching before teachers enter the field. MTC was founded in 1989. The first class of teachers started in 1990 (Mississippi Teacher Corps Annual Report, 2010).
- No Child Left Behind – No Child Left Behind (NCLB) is the name given to the 2002 reauthorization of the Elementary and Secondary Education Act of 1965. NCLB mandates that all public schools receiving federal funds must implement standardized testing for reading and math in grades three through eight. NCLB also mandates that students are tested once during their four years in high school. Failure to demonstrate progress could result in the restructuring of the school, including all of the staff being fired (Perlstein, 2007, p. 32).

- Northwest Evaluation Association – The Northwest Evaluation Association (NWEA) is a non-profit organization founded in 1974. Since 1977, the NWEA has offered a student diagnostic, the Measures of Academic Progress (MAP), to help teachers and schools track student performance. Currently, NWEA consults with the RCSD and assesses all students in grades three though eight in the RCSD with three MAP tests: math; reading; and language usage (Parent Toolkit, 2011, p. 3).
- Rasch Unit – The Rasch Unit (RIT) is the measurement scale used to rank a student's MAP test. The NWEA (2011) "Parent Toolkit" defines RIT as:

  > An equal-interval scale, like feet and inches, so scores can be added together to calculate accurate class or school averages. RIT scores range from about 100 to 300. Students typically start at the 180 to 200 level in the third grade and progress to the 220 to 260 level by high school (p. 3).

- Rural County School District – Rural County School District (RCSD) is a school district located in north Mississippi. In school year 2009 – 2010 ninety -four percent of the student population received a free or reduced lunch, which indicates that those students came from households below the poverty line.
- Teach For America – Teach For America (TFA) is a two-year alternate route teaching program that places college graduates in high-poverty school districts across the nation. TFA was founded in 1990 (Thompson, 1997).
- Traditional-Route Certification – Traditional-route certification is a type of teacher certification that includes a four-year undergraduate degree in education and student teaching experience (McConnell, 2005).

- Value-Added Analysis – Value-added analysis estimates the effectiveness of a teacher by measuring a student's test scores over a period of time. From this measurement a projection can be made as to how a student should score in a teacher's classroom. The difference between the projection and the actual score is the value that the teacher has added (or subtracted) to that student's content knowledge (Los Angeles Times, 2010).

Summary

This research study will examine the impact that MTC teachers has had on student achievement as compared to non-MTC teachers. An analysis of MAP scores, by teacher and classroom in the RCSD, will be used to measure student achievement. With the implementation of NCLB there have been several research studies examining the impact of TFA, a program similar to MTC, on student achievement. This impact, and the measurements used, will be examined in the review of literature.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter presents a review of the literature related to the use of standardized testing as a measurement of teacher effectiveness for alternate-route teaching programs like Teach For America. This chapter will review related research by exploring the following topics: the history of alternate-route certification including several of the alternate-route certification programs offered in Mississippi; the impact of No Child Left Behind; the impact of standardized testing; analysis of standardized testing as a measurement of teacher effectiveness; a description of value-added analysis; and a review of the research related to teacher effectiveness for alternate-route teaching programs like Teach For America.

Alternate-Route Certification

In the United States the vast majority of certified teachers are trained through coursework offered by a school of education. This type of training is commonly called "Traditional Certification" or "Traditional-Route Certification." While there are a number of components to traditional-route certification this type of certification includes a four-year undergraduate degree from an accredited school of education. As part of the degree coursework, traditional-route certification includes a student teaching component (Constantine, 2009).

Due to chronic teacher shortages across the country many states have implemented alternate-route certification programs. States began using alternate-route certification in the early 1980s. Alternate-route certification does not usually include undergraduate or graduate degree coursework. Alternate-route certification does not usually include a student teaching

component (McConnell, 2005). The National Center for Alternative Certification notes that, as of 2010, forty-eight states and the District of Columbia offer an alternate-route certification program. Most states offer more than one type of alternate-route certification.

The research on alternate-route teaching programs is limited because there are so many different programs with so many different training components. Research on alternate-route certification does not build on previous research because of the vast number of differences in alternate-route certification programs. Feistritzer (2010) recommends that research must instead focus on similar alternate-route programs rather than alternate-route certification as a whole.

One of the most publicized alternate-route certification programs is Teach For America (TFA). Wendy Kopp, a senior at Princeton University, created TFA in 1989. TFA recruits and selects applicants from outside the traditional ranks of undergraduate and graduate level education coursework (Thompson, 1997). TFA works from a model of recruiting college students from selective undergraduate institutions and placing them in high-poverty school districts. In 2010 twelve percent of all Ivy League seniors applied to TFA (Riley, 2010). TFA, like most alternate-route certification programs, offers an abbreviated training component. Teachers in TFA go through a five-week summer training session before entering the classroom. Unlike many alternate-route certification programs TFA's five-week summer training does include a student teaching component.

Alternate-route certification programs like TFA have come under criticism. In her 1994 Phi Delta Kappan article "Who will speak for the children," Linda Darling-Hammond wrote (p. 22):

> Worse than TFA's organizational shortcomings, however, is the trail of failure with their young students that so many TFA recruits have left behind them. While TFA has some

success stories, which it touts widely, these are far outnumbered by the problems. Such failures are especially pronounced among recruits who are placed in elementary and middle schools but have not had training in child development, learning theory, or such essential skills as how to teach reading.

Mississippi has a similar program to TFA: the Mississippi Teacher Corps (MTC). MTC was created in 1989, but the seeds of the program were planted during the state's 1982 legislative session.

Brief History of the Mississippi Teacher Corps

In December of 1982 the Mississippi Legislature passed the Education Reform Act of 1982 (ERA). The ERA contained a number of significant changes, including mandatory kindergarten and a compulsory attendance law. Less publicized at the time was a provision that included an alternate-route certification process for college graduates who did not major in education. For several years this provision sat dormant (Mullins, 1992).

In 1989, at roughly the same time Kopp was writing her proposal for TFA, Amy Gutman, Project Coordinator for Mississippi's Institutions of Higher Learning Board came up with the idea of a "domestic Peace Corps" (Thompson, 1997, p. 46) wherein college seniors from across the country would come and teach in public schools in the Mississippi Delta, one of the poorest regions in the country. In a 2010 Oral History, MTC-Co Founder Amy Gutman (2010) states:

> Now, the idea had actually come to me [*pause*] when I was still a reporter, as I recall, and I was in Andy Mullins office talking about some programs. He was then working for the um...[*pause*] the State Department of Education K through twelve part as some sort of an assistant to the then commissioner. And I don't know his--don't recall his title. And um...he was talking about how they were having trouble recruiting teachers to these, you

know, really tough areas in Mississippi, some of the rural areas. And they were, [*deep breath*] trying to offer various incentives or housing. I don't really recall all but just, you know, it was just a very, very tough, tough thing to do. And I was, I was sitting there thinking, I just knew so [*with emphasis*] many of my classmates from Harvard and other schools would just love to come down and spend time in the south. It was just a little bit of a throwback to the sixties when um, but in a way that was very collaborative as opposed to trying to come down, and you know, change things. I mean change things, but--but this idea would be in concert with, you know, the same direct that the state leaders were working. So I said, well you know it's really--um, it's really ridiculous that all these people you guys can't find anyone, but there are all these people from the East Coast and, you know I'm sure other parts of the country too, whom I'm sure would love [*with emphasis*] to come down. But you know they can't teach because they don't have an education degree. And Andy said to me, "Well that's just, that's actually not true. When I had worked for Governor Winter..." he had been on Governor Winter's staff, "when we passed the big Education Reform Act, we, part of that is an alternative certification provision." And through that provision you can um, you know, get a fast track into the teaching force. And that was where, that sort of planted the seed.

A year later, in 1990, the Mississippi Teacher Corps (MTC) was born (Wilkens, 1999). From 1990 to 1993 MTC was a privately funded one-year program. After a series of fund raising challenges the program secured funding from the state legislature in 1993. Since 1990 more than 400 participants, teaching an estimated 80,000 students, have completed MTC (Annual Report, 2010).

Alternate-Route Teaching Certification Routes in Mississippi

Many states have a number of different alternate-route teaching certification programs. These programs can vary widely by training and admission criteria. Mississippi has, in addition to MTC, three other alternate-route teaching certification programs. These programs are: Teach Mississippi Institute; Mississippi Alternate Pathway to Quality Teachers; and the Master of Arts in Teaching program. A brief review of the training and admission criteria for all four programs will illustrate the differences.

Teach Mississippi Institute

Teach Mississippi Institute is a ten-week training program where the coursework is completed in a computer lab. The program is open to anyone who meets the admissions criteria. There are three requirements for admission to Teach Mississippi Institute: a) a four-year undergraduate degree; b) a 2.5 undergraduate grade point average (GPA); c) passing scores on the Praxis I and II (Teach Mississippi Institute 2011). There is no student teaching component.

Mississippi Alternate Pathway to Quality Teachers

Mississippi Alternate Pathway to Quality Teachers is a three-week program open to anyone who meets the admissions criteria. There are three requirements for admission to Mississippi Alternate Path to Quality Teachers: a) a four-year undergraduate degree; b) a 2.0 undergraduate GPA; c) and passing scores on the Praxis I and II (Mississippi Alternate Path to Quality Teachers, 2011). There is no student teaching component.

Mississippi Teacher Corps

MTC is a two-year training program. The program is competitive, selecting less than ten percent of all applicants. In addition, applicants must meet three requirements: a) a four-year undergraduate degree; b) a 3.0 undergraduate GPA; c) and passing scores on the Praxis I and II (MTC Annual Report 2009). There is a six-week student teaching component.

Master of Arts in Teaching

In 2011, eleven universities and colleges across Mississippi offer a Master of Arts in Teaching (MAT) program. This graduate level degree is open to students who do not have teacher certification and who did not major in education as an undergraduate. There are two requirements for admission to the MAT program: a) a four-year undergraduate degree; b) passing scores on the Praxis I and II. There is a semester long student teaching component (Master of Arts in Teaching 2012).

Comparisons

Comparisons between alternate-route certification programs are difficult because there is such a wide variety of programs and a wide variety of admission requirements to those programs. Comparing teachers from alternate-route certification programs to traditionally trained teachers is also difficult because of the different lengths and types of preparation of the various programs. As Constantine notes "the findings from prior research may have limited relevance for a broader class of AC [alternative-certification] programs and teacher training strategies" (2009, p. 4).

Constantine (2009) suggests dividing alternate-route programs into two categories: more selective and less selective. Constantine defines "more selective" as programs requiring an undergraduate GPA of at least a 3.0. "Less selective" is defined as programs admitting applicants with a GPA lower than a 3.0. Under these definitions MTC is the only alternate-route certification program based in the state of Mississippi that would be considered "more selective." TFA, which places teachers in Mississippi, would also fit the "more selective" definition.

No Child Left Behind

The Elementary and Secondary Education Act of 1965 (ESEA), passed as part of President Lyndon Johnson's "Great Society" legislation, increased federal funding for public

schools. Title I of the Act distributed money to schools with a percentage of students who come from households living below the poverty line. As of 2005 almost 60 percent of public schools received Title I funding, totaling about thirteen billion dollars a year (Perlstein, 2007, p. 26).

On January 8, 2002 George W. Bush signed the reauthorization of the ESEA. The reauthorization bill, including new amendments and requirements, became popularly known as the "No Child Left Behind Act" (NCLB). Ellis wrote "NCLB is the most recent piece of education legislation to emerge from the ESEA of 1965" (2007, p. 225).

NCLB mandated that all public schools receiving federal funds must implement standardized testing for grades three through eight and once in high school for reading and math. Each individual state's Department of Education would create and administer the exams. Using test results, students in each school must show progress every year until the year 2014 when all students must pass every test. Failure to demonstrate progress could result in the restructuring of the school, including all of the staff being fired (Perlstein, 2007, p. 32).

Ravitch (2010) notes:

> The goal set by Congress of 100 percent proficiency by 2014 is an aspiration; it is akin to a declaration of belief. Yes, we do believe that all children can learn and should learn. But as a goal, it is utterly out of reach. No one truly expects that all students will be proficient by the year 2014, although NCLB's most fervent supporters often claimed that it was feasible. Such a goal has never been reached by any state or nation.

NCLB mandates that all schools provide a highly-qualified teacher. Most states have defined a highly-qualified teacher as a certified teacher. Because each state sets differing certification requirements the definition of highly-qualified varies from state to state. The focus

on creating highly qualified teachers to fill schools and districts that need them has encouraged states to create and/or ramp up alternate-route certification programs (Darling-Hammond, 2006).

Race to the Top

Since taking office in 2009 President Barack Obama has initiated his own plan to reform education in the form of a contest for federal dollars titled, by the federal Department of Education, "Race to the Top." As with NCLB, "Race to the Top" uses the incentive of federal funding to create change in state standards. Weingart (2010) notes that:

> The Obama administration launched the competition last year as a way to motivate states to voluntarily make the kind of education reforms it advocates, including expanding the number and improving the quality of charter schools, overhauling teaching evaluations to include student performance, improving student-data collection, and transforming the lowest performing schools. Longtime education watchers have been astounded over the last year by how quickly and enthusiastically most states have responded to the challenge.

As with NCLB, "Race to the Top," encourages states to ease certification standards to allow more people to enter the teaching profession.

Standardized-Testing

Hunt (2008) argued that NCLB has had a "profound impact" on schools. Smyth (2008) examined the implementation of NCLB and found that state tests are now the primary assessment used to measure teacher performance. Ellis (2007) notes that "valuable class, teaching and learning time is consumed with pretests or drills of test material in order to improve the students' scores on the state mandated skills tests" (p. 225). Because each state sets its own series of standardized tests, which, by 2014, all students must pass, NCLB creates the incentive for states to generate easy tests. Indeed, states that create rigorous tests will be punished and

deemed as failing if fewer students pass their test than states that create an easier test (Darling-Hammond, 2006).

In addition to encouraging states to create easier tests Darling-Hammond (2006) notes that NCLB encourages drop-out and "push-out" rates of low-achieving students. This allows a school to obtain a higher average on standardized test scores because the lowest achieving students are no longer in school. Gains in student learning can be manipulated by expelling students rather than by increasing student learning. Mississippi, for example, ranks third in the country in drop-out rate, with 38.9 percent of ninth graders not completing a high school degree (Sims, 2007). The actual rate of students not graduating high schools is likely higher as this drop-out rate does not include students who dropped out before ninth grade.

High drop-out rates and easier tests are not the only negative impacts of NCLB. Non-academic classes have been sidelined. Ravitch (2010) notes that "One of the unintended consequences of NCLB was the shrinkage of time available to teach anything other than reading and math. Other subjects, including history, science, the arts, geography, even recess were curtailed."

Standardized Testing in Mississippi

Standardized testing of public school elementary and high school students in Mississippi began with the passage of the Educational Reform Act of 1982. The (ERA), which redefined educational policy for Mississippi, included the establishment of a Performance-Based School Accreditation System (PBAS). The PBAS included the creation of a statewide basic skills testing program for third, fifth, eighth, and eleventh grades. PBAS was the first state mandated testing program (Mullins, 2008).

Since the creation of PBAS the statewide basic skills testing program has gone through several iterations. As of 2011, the current assessment is the Mississippi Curriculum Test, Second Edition (MCT2). The MCT2, which meets the NCLB mandates, assesses math and Language Arts in each grade from three through eight. In grades nine through twelve students are assessed once in Algebra I, U.S. History, English, and Biology. Students can score from a 120 to a 180 on each of the MCT2 tests. Scores are then grouped into four levels: advanced; proficient; basic; and minimal (Mississippi Office of Student Assessment [MOSA], 2010).

Analysis of Standardized Testing as a Measure of Teacher Effectiveness

Teacher effectiveness is the key to student achievement. Ripley (2010) describes the "most stunning finding to come out of education research in the past decade" (p. 4) is that teacher quality is more important than the overall quality of the school. Ripley writes "Parents have always worried about where to send their children to school; but the school, statistically speaking, does not matter as much as which adult stands in front of their children" (p. 4).

Corcoran (2010) writes, "Over the past fifteen years, research on teacher quality has adopted a new paradigm: measuring effectiveness on the basis of student out-comes, as opposed to teacher inputs" (p. 2). Constantine (2009) finds that alternate-route certified teachers are neither better nor worse than traditional-route certified when student outcomes are measured by standardized tests.

Although traditional models of teacher quality, and pay scale, have been tied to the number of years a teacher has taught and the number of degrees a teacher has attained there is little correlation between years taught, degrees earned and student performance. Kane (2006) writes that, when reviewing teacher effectiveness, "the literature has consistently failed to find that those holding master's degrees are more effective, despite the fact that most teacher pay

scales reward higher educational attainment." Examining student test data from Texas Rivkin (2005, p. 419) demonstrates that there is no correlation between the number of years taught and student achievement. Nor is there any correlation between the level of degree earned and student achievement.

In addition to years taught and degrees earned teachers are usually assessed by school administrators. In most school districts a principal or assistant principal observes and evaluates each teacher once a year. Weisberg (2009) concluded that, in a binary evaluation form where school principals evaluate and rate teachers as either "satisfactory" or "non satisfactory," school principals rate 99% of teachers as "satisfactory." Glazerman (2010) writes:

> There is an obvious need for teacher evaluation systems that include a spread of verifiable and comparable teacher evaluations that distinguish teacher effectiveness. We know from a large body of empirical research that teachers differ dramatically from one another in effectiveness. Evaluation systems could recognize these differences but they generally don't. (p. 1-2)

As Ripley (2010) and Corcoran (2010) both note research indicates that teacher effectiveness is the most important factor in student achievement. Kane's (2006) research indicates that there is little correlation between the number of years a teacher has taught, the number of degrees a teacher has earned, the evaluation score from a school administrator, and student achievement. Glazerman's (2010) research shows that principal evaluations of teaching are almost always positive. Value-added analysis is a recent type of analysis, using standardized test scores, to measure teacher effectiveness.

Value-Added Analysis

In grades three through eight NCLB mandates standardized testing once a year. Each year a snapshot is taken of the student's achievement level. Most measurements of teacher effectiveness compare student achievement using this snapshot. However, this comparison is unfair (Harris, 2010a). Students come to school from different starting points. For example, eighth grade students at King Middle School start the year averaging 90% on the practice eighth grade math test. At the end of the year, the same students score 95% on the actual state test. Meanwhile, eighth grade students at Little Middle School start the year averaging 40% on the practice eighth grade math test and finish the year at 65%. Under NCLB, King Middle School is a higher performing school. However, the students at Little Middle School have actually advanced further.

Darling-Hammond (2006) notes that the one of the most adverse consequences of NCLB is that it tracks group averages. So, for example, scores of eighth graders in Mississippi in 2009 are compared to scores of a different set of eighth graders in Mississippi in 2008. These are two different sets of students who may, or may not, be at different points in their learning of math. Darling-Hammond suggests that a better comparison would be the progress each student has made compared to his or her own scores a year earlier. This type of analysis, referred to as "value-added," has become more prevalent in research studies and well known to the general public thanks to a series of articles published in the Los Angeles Times.

In 2010 the Los Angeles Times published a series of articles calculating value-added for every teacher in the Los Angeles Unified School District. The Los Angeles Times (How the teachers were evaluated, 2010) wrote:

> Value-added estimates the effectiveness of a teacher by looking at the test scores of his students. Each student's past test performance is used to project his performance in the

future. The difference between the child's actual and projected results is the estimated "value" that the teacher added or subtracted during the year. The teacher's rating reflects his average results after teaching a statistically reliable number of students. (p. 1)

Researchers employing value-added modeling track standardized student test scores over a number of years and analyze the effect of individual teachers. By tracking student test scores proponents of value-added analysis claim that you can determine if a student has progressed more or less than he should in an individual teacher's classroom.

Feistritzer (2010) writes:

Using this value-added approach, researchers now are more likely to make comparisons between the effectiveness of teachers trained through the traditional college- based programs and teachers who are prepared through an alternate route. By eventually isolating the qualities that contribute most to increasing student achievement, such research becomes increasingly valuable to all teacher preparation programs. (p. 1)

A significant limitation of value-added analysis is that the analysis can only be run for the subjects in which students are tested over multiple years. Because NCLB only mandates testing in grades three through eight, and only in math and reading, value-added analysis can only be measured in these subjects and grade levels (Harris, 2010b). If students were given a standardized exam at the beginning and end of each school year value-added analysis could be expanded. The Rural County School District tests all of their students at the beginning and end of each school year using the Northwest Evaluation Association's Measures of Academic Progress.

It is important to note that a limitation of using value-added analysis is that this analysis relies only on test scores. Value-added analysis is attempting to measure what a teacher

contributes to how a student performs on a standardized test. Harris (2010) writes "No state has a test that is so good that we could rely on the test alone. Even if we do eventually develop and use tests that capture higher-order thinking and writing skills, some things we expect from schools cannot be tested this way—creativity, curiosity, working in groups, and love of learning, to name a few" (p. 2).

Analysis of Standardized Testing as Measurement of Teacher Effectiveness for Teach For America Teachers

As Constantine points out "little empirical research exists to provide guidance as to the effectiveness of different teacher training strategies or to describe the characteristics of AC programs and the teachers they certify" (2009, p. 5). For programs like Teach For America the research is sparse. As of 2010 there have been fewer than ten studies examining the impact of Teach For America on student achievement.

Decker

In 2004 Mathematica Policy Research, Inc., a public-policy research group based in Princeton, N.J., released a study, authored by Paul Decker, titled "The Effects of Teach For America on Students: Findings from a National Evaluation." The report attempted to answer the question: "Do TFA teachers improve (or at least not harm) student outcomes relative to what would have happened in their absence" (p. xi). The study was conducted in two phases: a pilot study in Baltimore, MD in 2002 and a full-scale study conducted in six different cities and regions of the country (including the Mississippi Delta) in 2003.

Decker's research compared standardized test scores of students taught by TFA teachers versus students taught by non-TFA teachers, or the control group, in the same school and in the same grade. Decker further refined the study to compare TFA teachers to all non-TFA teachers

and then to compare TFA teachers to only novice non-TFA teachers. Novice teachers were defined as having taught for three or less years.

Decker's research indicated that TFA teachers had a positive impact on math achievement scores. Average math scores of students taught by TFA teachers were significantly higher than the control group. TFA teachers did not have a positive or negative impact on student reading scores. Students in the control group and students taught by TFA teachers achieved at the same growth rate. This held true when comparing TFA teachers against novice teachers and when comparing TFA teachers against all teachers.

One notable aspect of Decker's study is that the school district agreed to randomly allocate students and teachers across classrooms. The random assignment of students and teachers produced equivalent groups.

Linda Darling-Hammond

In 2005 Darling-Hammond used a student-level data set of 271,015 students from the Houston Independent School District to compare the math and reading scores of fourth and fifth graders taught by TFA teachers to traditional-route certified teachers and to other alternate-route certified teachers. Darling-Hammond was critical of Decker's study as Decker did not compare TFA teachers to traditional-route certified teachers. Decker's control group was a mix of traditional-route teachers and alternate-route teachers.

In Darling-Hammond's study students taught by traditional-route non-TFA teachers scored significantly higher on both reading and math standardized tests than students taught by a TFA teacher. Darling-Hammond concluded that a TFA teacher performs about as well as an uncertified teacher.

Kane

In 2006 Kane published "What Does Certification Tell Us About Teacher Effectiveness? Evidence from New York City." The report examined the impact of teacher certification, breaking teachers down into traditionally certified, alternatively certified, and uncertified. Kane further breaks down the alternatively-certified teachers into three groups: TFA teachers; New York City Teaching Fellows (NYCTF) teachers; and other alternatively-certified teachers.

NYCTF is a comparable program to TFA (and MTC). NYCTF, started in 2000, is highly selective and offers student teaching as a part of the summer training component. When comparing TFA and NYCTF teachers to traditionally certified teachers Kane found that TFA and NYCTF teachers are less likely to have graduate degrees, more likely to have attended more selective colleges, and are younger. Kane also noted that all alternatively certified teachers are more likely to teach in high-poverty school districts.

Kane used the data set of New York City public schools, examining reading and math scores from grades four through eight. Kane calculated value-added, controlling for teacher's experience level.

For student achievement on the state math test Kane found no difference between NYCTF teachers and traditionally certified teachers. For reading, students taught by NYCTF teachers underperformed, compared to traditionally trained teachers, by .01 standard deviations.

For TFA teachers Kane found that students perform .02 standard deviations higher on the math assessment when compared to students taught by traditionally certified teachers. Like Decker, Kane found no difference in reading scores for students taught by TFA teachers and students taught by traditionally certified teachers.

Like Decker, Kane found higher attrition rates among TFA teachers. Kane estimated that 55% of TFA teachers leave the profession after two years. However, Kane argued that the

standard deviation gains in math scores offset the high attrition rate (noting that the attrition rate is much smaller than the rate Decker identified).

Xu

Xu's 2007 working paper "Making a Difference? The Effects of Teach For America in High School" was written for the National Center for Analysis of Longitudinal Data in Education Research. It is the first study of the impact of TFA teachers on high school students.

Xu used student-level data from the North Carolina Education Research Data Center (NCERDC). NCERDC tracks all public-school students in North Carolina. Xu limited the study to 23 high schools that had employed a TFA teacher from 2000-2007.

North Carolina administers a variety of standardized tests to all students attending public high school. Xu analyzed test results from the following subjects: Algebra; Algebra II; Geometry; Biology; Chemistry; Physics; Physical Science; and English I. Yu defined these courses as End-of-Course (EOC) exams as students must pass these tests to graduate from high school.

Xu compared student achievement of students taught by non-TFA teachers (broken down into novice non-TFA teachers and overall non-TFA teachers) to student achievement of students taught by TFA teachers. Xu finds:

> The effect of having a TFA teacher as compared to having a non-TFA teacher on high school student performance is stable and consistent across models and specifications, although TFA effects for science subjects tend to be larger than those for all subjects and for math subjects only. With all eight subjects examined together without controlling for classroom variables, we find that having a TFA teacher is associated with about 0.10 standard deviations improvement in EOC performance as compared with having a non-

> TFA teacher. The effects of TFA teachers over non-TFA teachers for math and science subjects are 0.10 and 0.18 respectively. The TFA effects are about twice the effect of having a teacher with 3 years or more experience relative to having a novice teacher. Evidence shows that, in terms of test scores, TFA teachers are able to more than offset their lack of teaching experience, either due to their better academic preparation in particular subject areas or due to other unmeasured factors such as motivation. (p. 20)

Noell

Noell's 2009 Technical Report examined TFA teachers in Louisiana. The study is limited to fourth through ninth graders. Noell used the value-added approach, tracking student test scores over five content areas using the entire state database from the years 2004 through 2007. The content-areas used in the research study were: Language Arts; mathematics; reading; science; and social studies.

As with the previous research studies, Noell breaks down the group of teachers into separate categories depending on experience teaching. Noell designates the teachers as: TFA; novice non-TFA; and all teachers.

When compared to all teachers the coefficient obtained was positive. However, the results were not statistically significant. When compared to novice non-TFA teachers Noell's research indicated that TFA teachers had a significant positive impact on four of the five content areas. The coefficient across all content areas was positive. Social studies was the only content-area that was not statistically significant.

Noell also touched on the attrition rate of TFA teachers in the teaching profession. One of the common criticisms of teaching programs like TFA and MTC, which only have a two-year teaching requirement, is that the teachers have a high attrition rate (Darling-Hammond, 1994).

Noell's research supported this claim with between four and 20% of a given TFA class staying in the classroom for five years. By comparison, the five-year persistence rate of non-TFA teachers staying in the classroom for five years ranged from 62% to 65%.

Summary

Analyzing standardized test data has been a common way for researchers to assess the effectiveness of teachers. This analysis is limited because most standardized tests provide only a snapshot of a student's academic career. With the implementation of NCLB, and the mandate that all students be tested in math and reading from grades three through eight, value-added analysis has given researchers a tool to better measure teacher effectiveness. While more precise than other methods, value-added analysis is still limited in that it reduces the impact of a teacher to how that teacher's students perform on a standardized test.

Another impact of NCLB has been the increase in the number of teachers who are certified through an alternate-route program. There has been some research on measuring the effectiveness of alternate-route certified teachers. This research has been limited because there are a wide variety of entry requirements and training components that make up alternate-route certification programs. Some programs, like TFA and MTC, are highly selective and include a student teaching component. Other programs are less selective and do not include student teaching.

Using the value-added analysis model there has been limited research on the effectiveness of TFA teachers. The limited research has been helpful in understanding the impact of TFA teachers on student outcomes. Some research has shown TFA teachers to be more effective than other teachers. Some research has shown TFA teachers to be as effective or less effective than other teachers.

To date there have been no research studies examining the impact of MTC teachers on student achievement. In his descriptive study of MTC (2005), McConnell makes a series of four recommendations. The fourth suggestion is as follows:

> Further research should be conducted using the following suggestions:
>
> a. A follow-up study needs to be conducted to determine the effectiveness of Mississippi Teacher Corps teachers as compared to other teachers who have been certified through traditional routes and those who have been certified through other alternative certification programs in Mississippi.
>
> b. A follow-up study needs to be conducted to determine the impact that Mississippi Teacher Corps teachers are having on student achievement in their districts. (p. 77)

While several research studies have been conducted examining the impact of TFA there have been no corresponding research studies examining the impact of MTC. In the conclusion of his descriptive study of MTC McConnell (2005) recommends a follow-up study examining the effectiveness of MTC teachers.

CHAPTER 3

METHODOLOGY

Research Model

Previous research has looked at the impact that Teach For America (TFA) teachers have on student achievement. McConnell (2005) recommends doing the same for the Mississippi Teacher Corps (MTC). This chapter will describe the methods and design of a study that assessed the impact of MTC teachers on student achievement.

Methods and Procedures

The research study examined the outcomes of students in classes taught by non-Mississippi Teacher Corps teachers as compared to students who are in classes who are taught by MTC teachers. This section describes the details of the research design, participants, instrumentation, research hypothesis, procedures, and plans for data analysis.

Design of the Study

The quantitative study incorporated analysis of covariance (ANCOVA) to determine the relationship between the mean Measures of Academic Progress (MAP) test scores of classes taught by non-MTC teachers and the mean MAP test scores of classes taught by MTC teachers.

Population, Sample, and Participants

The sample for this study consisted of students who attended the Rural County School District (RCSD) during school year 2009-2010. RCSD is a school district located in north Mississippi. In 2009-2010, 94% of the student population received a free or reduced lunch

which indicated that those students came from households below the poverty line. The participants of this study were the 5,043 RCSD students in grades three through ten who were assessed using the MAP for school year 2009-2010 (n=5,043).

Instrument

The instrument used is the "Measures of Academic Progress" (MAP). The MAP is a computer-based test given by the Northwest Evaluation Association (NWEA), a non-profit education company that contracts with school districts to prepare students for various state tests. The MAP, which is administered by RCSD, mirrors the Mississippi Curriculum Tests (MCT2) that are taken by all public school students in Mississippi. In grades three through ten all RCSD students are administered a pre and post MAP test in math, reading, and language usage. The pre-test is given in August. The post-test is given in May.

The test data for RCSD is broken down by teacher, subject, and class. A significant limitation is that the test data is not broken up by individual student. This means that the research study examined the mean test scores of each class for each teacher.

Validity

Several research studies have used MAP as an instrument to evaluate teacher effectiveness. One of these studies, by the Appalachia Educational Laboratory, measured the impact of teacher questioning on student achievement. In explaining the validity of using MAP as a measurement of student achievement the author of the study, Jim Craig (2005), writes:

> Test-retest reliabilities for the Measures of Academic Progress mathematics test have been found to range from .86 to .93 (Northwest Evaluation Association, 2004). For Grades 4, 5, and 6 on the same test, marginal reliability coefficients, which are indexes of reliability based on combining measurement error estimated at different points on a scale,

have been reported to be .94. This method of estimating reliability is purported to yield estimates nearly identical to coefficient alpha. (Northwest Evaluation Association, 2004)

The concurrent validity of the Measures of Academic Progress mathematics test has been examined by comparing Measures of Academic Progress mathematics RIT scores with mathematics scores on various states' achievement tests (e.g., the Arizona Instrument to Measure Standards and the Illinois Standards Achievement Test) and the Stanford Achievement Test, 9th edition. For Grades 4, 5, and 6, correlations of .80 to .89 have been found between the Measures of Academic Progress mathematics test and these other measures of mathematics achievement. (e.g., the Stanford Achievement Test, 9th edition)

In Mississippi, both the Mississippi Department of Education (MDE) and individual school districts use the MCT2 to evaluate teachers. The NWEA has found there is a significant correlation between MAP and the MCT2. For example, according to the "Mississippi Linking Study" (2011), the correlation coefficient between MAP and the Mississippi Curriculum 8th Grade Math test is .78.

There is limited research as to the validity of MAP. The U.S. Department of Education's Institute for Education Sciences notes (2011) "studies investigating the effects of MAP or other benchmark assessment programs on student outcomes are scarce."

Hypotheses

Ho: There is no significant difference in mean students' Measures of Academic Progress test scores when taught by Mississippi Teacher Corps teachers or non-Mississippi Teacher Corps teachers when controlling for pre-test scores.

Ha: There is a significant difference in mean students' Measures of Academic Progress test scores when taught by Mississippi Teacher Corps teachers when controlling for pre-test scores.

Procedure

Dr. Tom Lombardo, Director of Research Integrity and Compliance at the University of Mississippi's Institutional Review Board (IRB), was contacted by phone on February 28, 2012. Dr. Lombardo stated that IRB approval was not needed as research is based on a publically available data set that does not identify individuals (T. Lombardo, personal communication, February 28, 2012). A formal request to use the data and publish the data was also submitted to the RCSD and approval was granted on September 1, 2010.

Data Analysis

The Statistical Package for the Social Sciences (SPSS) was used to analyze the data. An analysis of covariance (ANCOVA) was used for the hypotheses. The September MAP test scores were the covariate. The May MAP test scores were the dependent variable. The independent variable was the type of teacher (MTC teacher or non-MTC teacher). All hypotheses were tested at the .05 significance level. If the p value is greater than the level of significance the research will fail to reject the hypothesis being tested.

There are two major assumptions that the researcher will take into account when using ANCOVA. The first assumption is that the relationship between the dependent variable and the covariate is linear. The second assumption is that the regression lines for these individual groups are parallel. This assumption is known as homogeneity of variance (Hinkle, 2003).

Summary

The study examined the outcomes of students in classes taught by non-MTC teachers as compared to students who are in classes who are taught by MTC teachers. Using class level data from the RCSD an analysis of MAP scores was used to measure student achievement. This analysis will help determine if non-MTC teachers are more effective than their MTC counterparts. The next section will review the findings.

CHAPTER 4

RESULTS OF THE STUDY

This chapter presents the results of the study. Following the description of the sample are the results of the research and then a series of alternative analyses.

Description of the Sample

Data collection was initiated on September 1, 2010 and completed on September 4, 2010. Data was collected in the form of an Excel spreadsheet listing: teacher; class; class size; fall mean test scores; spring mean test scores. Data was coded so that all teachers were assigned a random number. Dr. Tom Lombardo, Director of Research Integrity and Compliance at the University of Mississippi's Institutional Review Board (IRB), was contacted by phone on February 28, 2012. Dr. Lombardo stated that IRB approval was not needed as research is based on a publically available data set that does not identify individuals (T. Lombardo, personal communication, February 28, 2012).

In reviewing the data 47 classroom scores (19%) were thrown out because of missing fall or spring test scores. That left 52 separate teachers across 198 separate classrooms. One hundred and seventy-four (70%) of these classrooms were taught by non-Mississippi Teacher Corps teachers. Twenty-four classrooms (11%) were taught by Mississippi Teacher Corps teachers. The total number of students tested was 5,031 as shown in Table 1.

Table 1

Summary of Classroom Data

Group	Number of Classrooms	Number of Students	Number of Individual Teachers
Non-MTC	174	4403	45
MTC	24	628	7
Total	198	5031	52

The data was imported into the Statistical Package for the Social Sciences software (SPSS) and analyzed. As seen in Table 2 the fall mean test scores of students taught by non-MTC teachers was 207. The spring mean test scores of students taught by non-MTC teachers was 216.3. The difference between the fall and spring mean test scores of students taught by non-MTC teachers was 9.3. The fall mean test scores of students taught by MTC teachers was 213.6. The spring mean test scores of students taught by MTC teachers was 222.1. The difference between the fall and spring mean test scores of students taught by MTC teachers was 8.5. The standard deviation for mean spring test scores among non-MTC teachers was 13.2. The standard deviation for mean spring test scores among MTC teachers was 7.4.

Table 2

Table with Fall and Spring Mean Test Scores by Teacher Group

	Non-MTC	MTC	Difference
Fall Mean	207.0	213.6	6.6
Spring Mean	216.3	222.1	5.8
Difference	9.3	8.5	

While the difference between the fall and spring mean test scores for students taught by non-MTC teachers and students taught by MTC teachers is similar (9.3 for non-MTC teachers and 8.6 for MTC teachers) it is interesting to note that students taught by MTC teachers scored 6.6 points higher on their fall tests as compared to students taught by non-MTC teachers. Students taught by MTC teachers scored 5.8 points higher on their spring tests as compared to students taught by non-MTC teachers.

Research Analysis

The data was analyzed using SPSS. An analysis of covariance was used to test the hypothesis that there is no significant difference in mean test scores of students taught by a non-MTC teacher and students taught by an MTC teacher. Using a .05 level of significance results of the analysis did not indicate statistically significant differences in mean spring test scores when controlling for fall scores. The significance was .992. The null hypothesis is accepted. There is no significant difference in mean students' Measures of Academic Progress test scores when

taught by Mississippi Teacher Corps teachers or non-Mississippi Teacher Corps teachers when controlling for pre-test scores.

This analysis indicates that there is no significant difference in teacher effectiveness, as measured by Measures of Academic Progress test scores, when taught by MTC teachers or when taught by non-MTC teachers. However, in both the fall and spring, students who are taught by MTC teachers score significantly higher on the MAP test than students taught by non-MTC teachers. Also, it is important to note that there is a significant difference in the number of non-MTC classrooms (174) and students (4403) as compared to MTC classrooms (24) and students (628). Given these two pieces of information (a significant difference in test scores in both the fall and spring *and* a significant difference in number of classrooms and students tested) a series of alternative analyses was run.

Alternative Analysis

The data was analyzed using several alternative methods. These are: tests of normality; Mann-Whitney; one-way ANOVA; one-way ANOVA weighted for class size; regression analysis.

Tests of Normality

The sample size for the non-MTC teacher group is 174 classrooms and 45 teachers. The sample size for the MTC teacher group is 24 classrooms and seven teachers. The Tests of Normality, as seen in Table 3, indicate that this disparity in sample size is a significant. It is hard to find significance in groups with such disparity in sample size. Because the classrooms of only seven different individual MTC teachers were included in the study, as compared to 45 non-MTC teachers, one or two outliers in the MTC group can dramatically impact the final result.

Table 3

Table of Tests of Normality

Group	*Statistic (Kolmogorov-Smirnov)*	*Significance (Kolmogorov-Smirnov)*	*Statistic (Shapiro-Wilk)*	*Significance (Shapiro-Wilk)*
Non-MTC	*.098*	*.000*	*.806*	*.000*
MTC	*.113*	*.200*	*.968*	*.608*

Mann-Whitney

The fall mean test score for students in non-MTC classrooms is 207.0. The fall mean test score for students in MTC classrooms is 213.6. The spring mean test scores for students in non-MTC classrooms is 216.3 and the spring mean test scores for students in MTC classrooms is 222.1. Both in the fall and spring, the mean test scores for students in non-MTC classrooms is lower than the mean test scores for students in MTC classrooms. As seen in Table 4, a Mann-Whitney analysis confirms that this difference in test scores between non-MTC classrooms and MTC classrooms is significant (the significance is .000).

Table 4

Table of Mann-Whitney Test for Fall and Spring

	Fall Mean Rank	Spring Mean Rank
Non-MTC	93.3	93.67
MTC	144.42	141.79
Significance	.000	.000

For reasons as yet unknown students in MTC classrooms do achieve higher test scores across the board. Students begin in the fall achieving at a higher level (as measured by MAP test scores) in MTC classrooms and students leave in the spring achieving at a higher level in MTC classrooms as compared to non-MTC classrooms. If an outside observer were to simply look at fall and spring test scores he or she would conclude that students are better off in an MTC classroom even though the gain from fall to spring in both MTC and non-MTC classrooms is not significantly different. Theories as to why this is will be addressed in Chapter Five but an avenue for future research is to try and understand why scores are uniformly higher in MTC classrooms.

One-Way ANOVA

When analyzing the difference between the fall and spring test scores with a one-way Analysis of Variance (ANOVA) the significance is .642 (using a .05 level of significance) as seen in Table 5. This is not significant. With this analysis the data was not weighted for class size.

Table 5

Table of One-Way ANOVA

	Fall Mean	Spring Mean	Difference
Significance	.000	.002	.642

One-Way ANOVA (Weighted for Class Size)

The data was then analyzed by weighting each class based on the number of students in the class (class size) as seen in Table 6. When analyzing the difference between the fall and spring test scores the significance is .435. This is not significant.

Table 6

Table of One-Way ANOVA Weighted for Class Size

	Fall Mean	Spring Mean	Difference
Significance	.167	.240	.435

Summary

The data was analyzed using SPSS to examine the outcomes of students in classes taught by non-Mississippi Teacher Corps teachers as compared to students in classes taught by Mississippi Teacher Corps (MTC) teachers. Using class level data from the RCSD an analysis of MAP scores was used to measure student achievement. Results of the analysis did not indicate a statistically significant difference in mean spring test scores when controlling for fall scores. The significance was .992. Thus the null hypothesis was accepted. There is no significant difference in mean students' Measures of Academic Progress test scores when taught by Mississippi Teacher Corps teachers or non-Mississippi Teacher Corps teachers when controlling for pre-test scores.

Several alternative analyses were run. These analyses indicated: the difference in the number of classrooms taught by non-MTC teachers as compared to MTC teachers is significant; the difference in fall and spring test scores is significant; and the size of the classes taught by non-MTC teachers and MTC teachers is not significant. One intriguing result is that, in both the fall and spring, the mean test scores for students in non-MTC classrooms is significantly lower than the mean test scores for students in MTC classrooms. Students in MTC classrooms score higher in both the fall and spring.

CHAPTER 5

DISCUSSION

Chapter Five is comprised of four sections. Section one summarizes the study. Section two presents the conclusion. Section three discusses the findings. Section four suggests future avenues of study and research.

Summary of the Study

Limited research has examined the impact of Teacher For America (TFA), a program similar to the Mississippi Teacher Corps (MTC). Decker's (2004) research indicated that TFA teachers had a positive impact on math achievement scores. TFA teachers did not have a positive or negative impact on student reading scores. In Darling-Hammond's 2005 study students taught by traditional-route non-TFA teachers scored significantly higher on both reading and math standardized tests than students taught by a TFA teacher. Darling-Hammond concluded that a TFA teacher performs about as well as an uncertified teacher. Kane, in 2006, found that for TFA teachers, students perform .02 standard deviations higher on the math assessment when compared to students taught by traditionally certified teachers. Like Decker, Kane found no difference in reading scores for students taught by TFA teachers and students taught by traditionally certified teachers. In 2009, Noell's Technical Report concluded that, when compared to novice non-TFA teachers, TFA teachers had a significant positive impact on four of the five content areas.

No corresponding research has been conducted regarding MTC. McConnell (2005) recommended a research study to examine the effectiveness of MTC teachers.

The purpose of this multivariable study was to determine the relationship between mean Measures of Adequate Progress (MAP) scores of students taught by non-Mississippi Teacher Corps teachers and mean Measures of Adequate Progress scores of students taught by MTC teachers. The null hypothesis states there is no significant difference in mean Measures of Academic Progress test scores of students when taught by Mississippi Teacher Corps teachers or non-Mississippi Teacher Corps teachers when controlling for pre-test scores.

The population was students attending the Rural County School District (RCSD) who took the MAP test in the fall and spring during the school year 2009-2010. The data used was from a publically available data set on the MTC website. The data included fall and spring test scores, by classroom, for all teachers in the RCSD. The data was analyzed using the Statistical Package for the Social Sciences (SPSS).

Conclusion

The null hypothesis is accepted. There is no significant difference in mean Measures of Academic Progress test scores of students when taught by Mississippi Teacher Corps teachers or non-Mississippi Teacher Corps teachers when controlling for pre-test scores. The gain in test scores between students taught by a non-MTC teacher and students taught by an MTC teacher were not significantly different.

Several alterative analyses were run. These analyses indicated: the difference in the number of classrooms taught by non-MTC teachers as compared to MTC teachers is significant; the difference in fall and spring test scores is significant; and the size of the classes taught by non-MTC teachers and MTC teachers is not significant.

Alternative analysis does indicate that there is a significant difference in mean fall and spring test scores for students taught by non-MTC teachers as compared to MTC teachers and students in MTC classrooms scored significantly higher in both the fall and spring.

Discussion

The discussion will first center on the limitations of the study and then move to an examination of the difference in fall and spring test scores for students in non-MTC classrooms as compared to MTC classrooms.

There were three significant limitations in this study. The first limitation was the lack of data at the student level. The data was only available as a classroom average. Using an ANCOVA analysis essentially created a "mean of a mean." For future research it would be helpful to analyze test data at the student level.

The RCSD has shared student level data for school years 2010-2011 and 2011-2012 with the Mississippi Teacher Corps. That data is now being collated and, upon completion of the 2011-2012 school year, should provide a more robust and specific data set at the student level.

The second limitation of this study was the imbalance in the number of non-MTC classrooms (174) as compared to the number of MTC classrooms (24). Tests of Normality indicated that the imbalance of sample size was a problem.

The third, and most significant, limitation of this study was the reliance on test scores as the sole measurement of analyzing teacher impact. Standardized test scores, especially when they are given at both the beginning and end of a school year, offer an easy, quantitative analyses of teacher effectiveness. But skilled teaching cannot, and should not, be reduced to how students perform on a standardized test on two days out of the school year. It is important for a future researcher to sit-in on several MTC and non-MTC classrooms for an entire year, or over the

course of several years, and observe what happens. This researcher should also interview principals, teachers, parents and, most importantly, students, over the course of several years and then, perhaps, follow-up with the students a decade or so later. Only then could a researcher begin to understand all of the myriad and complex ways in which a teacher can impact on a group of students.

As previously noted, alternative analysis did indicate that students in MTC classrooms scored significantly higher in both the fall and spring. Although there is no significant difference in the gain from fall to spring in non-MTC classrooms and MTC classrooms students, do score significantly higher in MTC classrooms. To a parent, perhaps looking to enroll his or her child in the RCSD, the data is clear that his or her child will likely score higher in the MTC classroom.

How to explain the significant difference in scores? There are at least two possibilities. The first is that higher-achieving students were "tracked" into MTC classrooms. The second is that the fall MAP test was not given until later into the school year. If the fall MAP test was not given until later in the school year this would mean that students in both the non-MTC and MTC classrooms started at the same average level, in terms of MAP scores, but, by the time the fall MAP was given, MTC teachers were already having an impact. If true, this would mean that students in MTC classrooms had a much greater gain over the course of the school year than did students in non-MTC classrooms.

For example, assume that, at the beginning of the year, students in the RCSD were randomly assigned to classrooms. Assume that, across the board, when school started in August, the mean MAP test score for all students was 205. Then assume that the MAP was not administered until early October. At this point, the data shows that the mean MAP score in a non-MTC classroom was 207 and in an MTC classroom was 216.3. Scores in both classrooms

have gone up in six weeks, but they have gone up much higher and faster in the MTC classroom. Then, in May, the spring MAP test was administered and the mean for students in non-MTC classrooms is 216.3 and the mean for students in MTC classrooms is 222.1. If all students were randomly assigned, and if the mean of all students in August was 205, then the difference from the beginning of the school year to the end of the school year for non-MTC teachers would be 8.6. The difference for MTC teachers would be 17.1

This theory rests on three assumptions. The first is that students were randomly assigned to classrooms without regard for whether their teachers were non-MTC or MTC. The second is that, in this random assignment, all of the higher-performing students did not end up in MTC classrooms. The third is that the MAP test was not administered until six or eight weeks (or longer) after the beginning of the school year.

The superintendent of RCSD was interviewed for this research study on March 4, 2012. In the interview the superintendent stated that classroom roster assignments were random and higher achieving students were not tracked into MTC classrooms. The superintendent also stated that school year 2009-2010 was the first year that the RCSD implemented the MAP test. Because it was the first year the testing did not begin right away. The superintendent stated that the fall MAP test was not given until "six or eight weeks into the school year." (J. Moore, personal communication, March 4, 2012).

This raises the possibility that, in the six weeks of school before the first MAP test, MTC teachers had already had a significant impact on student learning. It is important to note that this is just a theory, one that, unfortunately, is not be provable. RCSD has shared more recent data sets with MTC and this should help future researchers more clearly understand the impact, if any, of MTC teachers.

Suggestions for Future Study

There are five recommendations for future research:

1. Research should be conducted analyzing standardized test scores at the student level. This will reduce the variation found in analyzing test data only at the classroom level. More information about the training and tenure of each teacher should be identified, including type of training and years taught.
2. Research should be conducted analyzing test scores over multiple years.
3. Analysis of differences in fall and spring test scores for MTC teachers should be compared to their MTC and School of Education evaluations. Are teachers with the highest gains also being evaluated as outstanding teachers? Are there discrepancies between gains in test scores and evaluations? What does this indicate about the effectiveness of using standardized tests as a measurement tool?
4. Qualitative research, perhaps following two or three non-MTC teachers and two or three MTC teachers all at the same school or district over a two-year period, should be conducted.
5. The "life impact" of non-MTC and MTC teachers on students should be measured through long-term qualitative study spanning multiple years and/or decades.

Conclusion

This research study is the first quantitative analysis of its kind in examining the impact that MTC teachers are having on student achievement. In many ways understanding the MTC impact on student achievement is like peering through a darkened window. This study has illuminated only a small portion of what is inside.

As the RCSD is making available more robust data sets at the student level (and, hopefully, other school districts will follow suit in sharing their test scores), the avenue for future research, and for illuminating much more of this darkened window, is clear. While future research studies will no doubt make good use of this data future researchers should take care not to reduce the impact of an individual teacher, MTC or non-MTC, to a few test scores. Rather the researcher should attempt to understand the long-term impact of a teacher in ways not measured on standardized tests.

In the meantime, each fall, in classrooms throughout Mississippi, from the prairie of Noxubee County to the cotton fields of the Mississippi Delta to the hollowed-out cityscape of Jackson, students fresh from the release and joy of summer enter classrooms, and teachers, MTC and non-MTC alike, begin anew.

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Appendix

Research Data

Table I

Fall and Spring Mean MAP Test Scores by Teacher and With Class Size Identified. Group 0 is non-MTC. Group 1 is MTC.

Teacher ID	Group	Class Size	Fall Mean	Spring Mean
1A	0	10	220.1	219.5
1B	0	30	221.7	219.7
1C	0	43	215.2	215.8
2A	0	26	220.4	225.1
2B	0	22	216.8	217.9
3A	0	33	219.3	221.6
3B	0	21	221.5	227.4
3C	0	33	219.7	219.7
3D	0	35	222.7	227.6
3E	0	25	227.8	228.8
4A	0	14	200.4	207.3
4B	0	14	197.5	203.1
4C	0	14	200.6	209.6
5A	0	22	200.7	208.9
5B	0	22	199.6	205
5C	0	22	203.6	207.4
6A	0	12	206.8	N/A

6B	0	15	206.4	209.7
6C	0	24	210.3	218.8
6D	0	9	217.1	223.5
6E	0	12	215.4	220.8
6F	0	24	221.3	228.3
7A	0	21	209.5	215
7B	0	27	216.2	221.7
7C	0	24	220.2	224.3
8A	0	9	214.3	220.7
8B	0	12	213.5	214.2
8C	0	15	216.4	213.6
8D	0	12	220.3	223.6
9A	0	21	200.2	202
9B	0	21	194.6	195.2
9C	0	21	195.6	199.9
10A	0	26	194.2	200.7
10B	0	26	185.7	190.8
10C	0	26	185	197.2
11A	0	21	180.6	188
11B	0	21	174.5	183.3
11C	0	21	177.5	184.3
12A	0	24	198.5	205.2
12B	0	24	197.4	201

12C	0	24	194.2	201.3
13A	0	26	189.2	194.4
13B	0	26	182.8	187.9
13C	0	26	182.4	192.2
14A	0	24	196.1	198.5
14B	0	28	198.1	199.2
14C	0	24	197.2	204.5
14D	0	28	195.7	201.9
15A	0	28	200.4	202.6
15B	0	27	198.1	199.4
15C	0	28	200.3	205.8
15D	0	27	203.2	200.7
16A	0	23	194.1	203.5
16B	0	27	193.6	202.2
16C	0	23	196.2	204.2
16D	0	27	191.2	204
17A	0	28	207	211.6
17B	0	27	208.7	209.3
17C	0	28	206.9	214.6
17D	0	27	212.2	214.4
18A	0	24	205.8	216.1
18B	0	26	208.9	214.4
18C	0	24	205.6	219.1

18D	0	26	210.5	216.4
19A	0	2	209.4	214.8
19B	0	29	208.6	214.2
19C	0	28	204.6	217
19D	0	28	205.5	214.9
19E	0	26	205	213.7
20A	0	29	205.7	215.4
20B	0	30	209.4	215.6
20C	0	30	210.4	217.8
20D	0	30	207.2	213.7
20E	0	30	203.3	212.7
21A	0	30	206.1	213.3
21B	0	29	208.4	216.8
21C	0	30	210.4	218.8
21D	0	30	209.6	216.8
21E	0	30	207.7	214.9
22A	0	22	203.4	207.4
22B	0	22	205.7	209
22C	0	23	205	214
23A	0	22	203	214.3
23B	0	22	207.2	216.2
24B	0	22	205.5	220.6
25A	0	25	210.4	219

25B	0	27	211.5	217.7
25C	0	25	210.1	219.3
25D	0	25	212	218.5
25A	0	27	220.3	228.9
25B	0	27	218.6	232.1
26A	0	32	215.2	218.4
26B	0	25	212.5	213.8
26C	0	25	217.4	223
26D	0	25	215	218.5
27A	0	28	215.1	217.2
27B	0	19	216.1	216.6
27C	0	27	219	220.1
27D	0	20	221.5	219.9
28A	0	25	224	230
28B	0	32	227.5	233
28C	0	22	220.3	225.2
28D	0	18	218.2	232
29A	0	20	227.5	228.6
29B	0	16	217.9	219
29C	0	22	222.1	223.7
29D	0	14	218.7	220.1
30A	0	17	218.4	213.7
30B	0	23	229.4	221.1

30C	0	27	223.4	223.5
30D	0	25	220.2	220.8
31A	0	21	228.4	232.6
31B	0	22	228.5	234.1
31C	0	21	224.8	228
32A	0	25	196.9	200.7
32B	0	25	189.7	194.8
32C	0	25	194.7	198.3
32A	0	23	196.7	203.2
32B	0	23	190.1	198
32C	0	23	197.2	201.6
33A	0	27	188.2	197
33B	0	27	191.9	199.5
33C	0	27	189.1	199.9
34A	0	27	188.1	199.1
34B	0	27	186.8	196.7
34C	0	27	189.3	197.7
35A	0	28	191.6	201.4
35B	0	28	194.4	203.2
35C	0	28	192.6	202.1
36A	0	23	198.7	206.2
36B	0	25	197.6	205.9
36C	0	26	197.4	206.5

37A	0	27	197.4	206.1
37B	0	24	195.4	203.9
37C	0	23	196.5	204.1
37D	0	27	198.8	211.9
37E	0	24	194.3	208.4
37F	0	23	196.5	209.6
38A	0	20	202.5	214.7
38B	0	21	202.8	206.9
38C	0	22	206.4	217
39A	0	21	201.9	204.2
39B	0	21	202.7	212.7
39C	0	20	203.2	209.8
39D	0	21	202.3	209.7
39E	0	21	205.4	214.3
39F	0	20	204.9	212.2
40A	0	40	208	221.3
40B	0	39	209.9	219.4
40C	0	37	212	220.4
40D	0	30	207.1	222.5
40E	0	32	209.6	226.4
40F	0	30	211.8	227.5
41A	0	40	210.9	215.3
41B	0	39	212.7	217.7

41C	0	39	209.5	217.3
41D	0	32	210.8	220.8
41E	0	33	210.6	218.9
41F	0	31	212	223.1
42A	0	35	209.6	214.4
42B	0	35	211.6	214.1
42C	0	39	207.9	214.4
42D	0	29	210.1	214.9
42E	0	32	204	214.2
42F	0	31	206.3	216.8
43A	0	33	211.4	218.3
43B	0	35	225.7	320
43C	0	29	214.4	221.1
44A	0	30	221	223.9
44B	0	37	219.1	222.4
44C	0	30	221.6	225.4
45A	0	28	226.7	224.6
45B	0	17	224.9	218.8
45C	0	23	223.2	224.3
45D	0	25	223.6	224.5
46A	1	42	216.4	210.5
46B	1	35	214.8	226.8
46B	1	33	210.1	216.1

46C	1	42	214.4	210.9
46D	1	40	224.6	224
47A	1	20	212.5	221
47B	1	18	226.9	230.6
47C	1	19	219.3	227.8
47D	1	26	220.6	224.1
47E	1	24	214.9	223
48A	1	19	213.1	217.7
48B	1	26	212.1	218.3
48C	1	24	209.8	216.7
49D	1	21	208.4	215.5
49E	1	18	215.2	219.7
50A	1	18	220.4	228.4
50B	1	19	215.2	225.8
50C	1	23	213.5	223.7
50D	1	26	210.8	216.9
50E	1	20	212.9	217.1
51A	1	28	224.6	229.8
51B	1	26	224.5	238.5
51C	1	29	223.6	236
52A	1	32	213.5	212

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