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The St. Louis Desegregation Transfer Program: Do African American Students Perform Better In an Integrated Suburban Setting?

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Abstract

The academic achievement gap between the City of St. Louis and St. Louis County students indicates educational and racial disparity between the city and county schools. The City of St. Louis and St. Louis County school districts have tried to solve this racial disparity in public education through St. Louis' interdistrict student transfer program, the Voluntary Interdistrict Choice Corporation (VICC). Starting in the 1980s, this transfer program aimed to desegregate the predominantly white, higher performing county school districts and the predominantly black, low performing city school district. This dissertation focuses on the effectiveness of this program. Do African American students over time perform better in an integrated suburban setting than in a largely segregated inner-city setting?

This dissertation is the first of its kind to use individual student data to examine the effectiveness of VICC in improving the quality of education received by its participating students. Multi-level longitudinal regression analysis measures the Missouri Achievement Program (MAP) test scores of city, county, and transfer students between the 2005-2006 and 2009-2010 school years. The dependent variable is student MAP test scores. The independent variable consists of five types of students: white county students, black county students, white city students, black city students, and black transfer students. The control variables are the socio-economic status, educational assistance, and language limitation of each student.

The major findings are, one, program participation improves a student's academic performance; therefore, black transfer students score higher than black city students. Two, the longer the participation in the program, the greater the effect the program has on student achievement. Black transfer students progress at the same rate as white county students. The

eight multi-level regression models used find the relationship between student test scores and student types support these hypotheses. Participation in the transfer program allows and reflects increased achievement for black transfer students, while black city students progress at a diminished rate.

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An African proverb says, "It takes a village to raise a child." The way I see it, every village is delicately placed on a mountain called Life, and every child is equipped with a wagon. The village is there to push, support, and guide the child to the top of the moutain. I truly appreciate my village for pushing me to be and do my best, supporting me as I strive towards excellence, and guiding me up Life Mountain long after childhood.

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Chapter One

An Introduction

In 1954, *Brown v. Board of Education of Topeka, Kansas* overturned the *Plessy v. Ferguson* (1896) "separate, but equal" doctrine and determined public schools segregated by state laws were "inherently unequal" (347 U.S. 483). Since this decision, school systems under court order have tried to address the highly evident racial inequities that accompany racial residential segregation by introducing and implementing integration programs. This dissertation analyzes one of the largest and most unusual transfer programs: the Voluntary Interdistrict Choice Corporation (VICC) in the City of St. Louis and St. Louis County, Missouri. It uses disaggregated, individualized student level data as well as two additional levels of aggregate information. Having data at three levels is a major step forward in enhancing the studies of public school desegregation programs' impact on academic achievement. This is a longitudinal study that compares student performance under various settings over three and five years. Results from this study aid in identifying whether program participants improve academic performance under this system of transferring students.

Nationally, the educational disparity between inner-city schools and suburban schools greatly increases. Most inner-city areas are highly populated by blacks and their adjacent suburbs are highly populated by whites. Geographic assignment causes African Americans to comprise the majority of students educated in urban public schools while whites make up the majority of suburban public schools. Due to past segregation and its continuing presence, black inner-city public schools greatly lack the resources majority white, suburban public schools offer (Kozol, 2005). The St. Louis metropolitan area is a classic example of this phenomenon. Table 1-1 depicts the population shifts of blacks and whites in St. Louis

County and the City of St. Louis from 1950 to 2010. It shows a majority black inner-city adjacent to a majority white suburban county.

Table 1-1: Population Shifts of St. Louis Metropolitan Area, 1950-2010

Population of Caucasians and Blacks in St. Louis County and the City of St. Louis, 1950-2010

St. Louis County

Year	Total Population	Caucasians		Blacks		Other	
		Number	Percentage	Number	Percentage	Number	Percentage
1950	406,349	389,419	95.8%	16,819	4.1%	111	0.00%
1960	703,532	683,652	97.2%	19,007	2.7%	873	0.01%
1970	951,353	903,022	94.9%	45,495	4.8%	2,836	0.00%
1980	973,896	853,630	87.7%	109,143	11.2%	11,123	0.01%
1990	993,529	836,603	84.2%	139,044	14.0%	17,882	0.02%
2000	1,016.315	780,830	76.3%	193,306	19.0%	42,179	0.04%
2010	998,954	702,265	70.3%	202,787	20.3%	93,902	0.09%

City of St. Louis

Year	Total Population	Caucasians		Blacks		Other	
		Number	Percentage	Number	Percentage	Number	Percentage
1950	856,798	703,030	82.0%	153,766	17.9%	2	0.00%
1960	750,026	534,004	71.2%	214,377	28.6%	1,645	0.00%
1970	622,236	365,984	58.8%	254,191	40.9%	2,061	0.00%
1980	452,801	242,988	53.7%	206,170	45.5%	3,643	0.01%
1990	396,685	202,276	51.0%	187,995	47.4%	6,414	0.02%
2000	348,189	152,666	43.8%	178,266	51.2%	17,257	0.05%
2010	319,294	140,170	43.9%	157,093	49.2%	22,031	0.07%

Source: United States Census Bureau, University of Virginia Library, and the Inter-University Consortium for Political and Social Research

The City of St. Louis's population decreases from about 850,000 in the 1950s to about 319,000 in 2010 while the population in St. Louis County increases from about 406,000 in the 1950s to almost one million in 2010. The number of blacks residing in the City of St. Louis fluctuates between 1950 and the present, increasing between 1950 and 1970 and then decreasing after 1980. The current white population in the City of St. Louis is about one-fifth of the white population in the 1950s. On the other hand, the population of whites in St. Louis County greatly increases between 1950 and 1980 and then begins to decrease during the 1990s to present. The black population in St. Louis County does not begin to rise until the 1980s, but it has increased since then. Currently, whites make up 70.3 percent of its current population. As a result, the City of St. Louis's population is majority black and St. Louis County's population is majority white.

The racial divide in population between St. Louis County and the City of St. Louis is even more evident in the public school enrollment of blacks and whites in the two areas. In the early 1990s there are a little over 145,000 students in St. Louis County school districts (approximately 95,000 whites and 46,000 blacks) and a little over 42,000 students in the City of St. Louis school district (about 8,500 whites and 32,000 blacks). By 1999, there is an increase in public school enrollment in both areas: approximately 154,000 county students (93,000 whites and 56,000 blacks) and approximately 46,000 city students (8,000 whites and 36,000 blacks).

From the 2006 to 2010 school years, public school enrollment in the county fluctuates between 146,000 and 149,000 students. However, public school enrollment in the city drops from 40,000 to 38,000 students. White enrollment in the county moves between 81,000 and 83,000 students while black county enrollment moves between 57,000 to 59,000.

White enrollment in the city drops from 5,100 to 4,300 and black enrollment drops from 31,000 to 29,000. Table 1-2 depicts these changes in student enrollment.

Table 1-2: Public School Total Enrollment by Race of St. Louis Metropolitan Area, 1992, 1999, and 2006-2010 School Years

Total Public School Enrollment of Caucasians and Blacks in St. Louis County and the City of St. Louis, 1992, 1999, and 2006-2010 School Years

St. Louis County

School Year	Total Enrollment	Caucasians	Blacks
1991-1992	145,572	95,537	45,907
1998-1999	154,445	93,866	56,019
2005-2006	148.882	83,177	58,630
2006-2007	149,020	81,461	59,640
2007-2008	147,673	80,339	58,195
2008-2009	148,668	80,240	57,021
2009-2010	146,843	81,476	58,063

City of St. Louis

School Year	Total Enrollment	Caucasians	Blacks
1991-1992	42,088	8,583	32,879
1998-1999	45,947	7,981	36,655
2005-2006	40,343	5,639	29,175
2006-2007	38,791	5,155	31,866
2007-2008	35,230	4,369	33,056
2008-2009	37,144	4,477	30,799
2009-2010	36,342	4,365	29,993

Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "State Nonfiscal Public Elementary/Secondary Education Surveys", 1991-1992, 1998-1999, and 2005-2006 through 2009-2010.

There is a wide academic achievement gap between the City of St. Louis school district, St. Louis Public Schools (SLPS), and the thirteen majority white St. Louis County school districts that participate in VICC. There are eleven additional school districts in St. Louis County that do not participate in the transfer program during this five year analysis. These school districts are germane to this study because they provide a non-participatory group of students for comparison. Students who attend the county school districts (who are overwhelmingly white) perform better on academic achievement tests than students who attend the school district in the City of St. Louis (who are overwhelmingly black). Public school enrollment of blacks and whites from the early 1980s to 2010 in St. Louis County school districts and the City of St. Louis school district portray this racial divide.

The Research Question

This study focuses on understanding the academic performance of black city students who transfer into suburban school districts and the black and white students continuing schooling in the county or city. It examines the differences in Missouri Achievement Program (MAP) test scores of black city transfer students and city and suburban students to see the movement of the achievement gap. The core question is do African American students perform better in an integrated suburban setting than in a largely segregated inner-city setting? The study posits from the 2006 through the 2010 school years, city transfer students score higher on the MAP test than city students who remain in SLPS, all while controlling for student socioeconomic status and two learning statuses. A school district's transfer composition, assessed tax valuation, and the average student per teacher ratio of school buildings are also assessed for influence. It is anticipated that the longer the

participation in the program, the greater the effect the VICC program has on student achievement.

Literature Review

The Case for Integration

School desegregation is used to increase civic engagement and participation for minority students who do not have a chance to gain that knowledge in a segregated educational setting. Powell and High (2007) argue "inclusive, diverse schools" provide a common ground and opportunities for both students and members of the wider community because they eliminate isolation and enhance future perspectives (Frankenburg and Orfield, 2007).

Elizabeth Anderson's account (2010) of black oppression addresses the numerous means by which segregation keeps blacks disadvantaged and unable to rise from the stereotypes and stigmas that are accepted as the norm. It is also a moral and philosophical explanation of the importance of integration. Her approach assesses segregation as a problem of group inequality and not as its cause. From business and housing, to education and employment, Anderson elaborates on the several practices of discrimination that allow social closure (segregation) to continue. In her attempt to provide adequate grounds for integration, she focuses on the inability of certain affirmative action models and practices of color-blindness that do not fully achieve the positive results "true" integration provides.

Anderson describes an "ideal democracy" where all individuals are supported, protected, and recognized equally in all facets of society (Anderson, 2010, 2). While "segregation weakens democracy," integration works the opposite of segregation by strengthening democracy and reinforcing democratic ideals in societal behavior and

treatment (Anderson, 2010, 2). She contrasts integration against desegregation, color-blindness, and assimilation, and describes it as a form of intergroup interaction that eliminates segregation and inequality while recognizing racial identities (Anderson, 2010, 114). However, societal dismay with past integration attempts shows public support and acceptance is necessary to integrate.

In addition to public support and acceptance, evaluation of integration must be properly performed to provide enough convincing evidence to skeptics of integration. Anderson asserts school integration is essential; however, she argues that studies on school integration and busing policies do not adequately represent this imperative. These methodological studies do not consider the motives of school districts, the diverse modes of integration school districts implement, and they are not extensive enough in assessment (Anderson, 2010, 121). These elements are critical to understanding both the short and long term effects of integration on academic achievement. As she asserts, segregation buttresses racial separation, inequality, and stigmas by allowing subordinate groups to experience racial interaction under the control of dominant groups. Integration sets an even advantage for social interaction, access, and achievement. Thus, it is imperative to determine what types of policy programs are effective to achieve the goal of integration.

The Impact of Integration on Academic Achievement

Some studies find desegregation does not improve African American academic achievement while others find desegregation does have a positive impact. Rossell and Hawley (1983) find elementary students have higher levels of academic success in desegregated school systems in comparison to other grade levels. In a later study (2002), black achievement is low in school systems that do desegregate but do not pursue racially

mixed classroom settings. Frankenburg and Orfield (2007) examine the links between racial segregation and achievement gaps at the statewide level by comparing within school and between school variations of mathematics achievement of whites, blacks, and Hispanics. They find states that enforce desegregation policies between schools rather than within schools did not significantly reduce segregation. Academic achievement gaps are twice as large in schools that only enforce desegregation between schools. Baum (2010) finds that in his assessment of Baltimore's desegregation experience the effort behind integrating public schools is not explicitly focused on race. As a result, some racial equality is pursued, but other previous restrictions remain prevalent in the schools.

In conjunction with the Harvard Project on School Desegregation, Orfield and Eaton (1996) use four examples of present-day situations to show the nationwide movement back toward segregated schooling. They analyze three 1990s cases, *Board of Education of Oklahoma v. Dowell*, *Freeman v. Pitts*, and *Missouri v. Jenkins*, to explain the present process of resegregation and to exhibit a need for the cooperation of education and housing policies. According to Orfield and Eaton, metropolitan plans, plans where desegregation occurs in the central city and in the suburbs, are the most beneficial towards desegregation because these plans "produce the highest levels of integration and the most stable enrollment patterns"(Orfield, et al., 1996, 64).

After conducting a 1980s study on the national math test scores of low-income minority students and middle-class white students, Orfield, in conjunction with graduate students, conclude race and poverty are two interrelated concepts and are heavily tied to achievement test performance. The study discovers "six percent of the black tenth-graders in Chicago public schools performed in the top quartile, compared with thirty-six percent of

white tenth-graders in the Chicago suburbs" (65). In addition, "twenty-three percent of the low-income students scored above the national median in math compared to seventy-four percent of suburban students"(65). Orfield believes gaps in achievement such as these are related to the separate schooling of low-income minority and middle-class whites. These findings further lead to the assumption that inequality existing in the schools of large metropolitan areas can be linked to the absence of city-suburban desegregation.

Studies on St. Louis's Transfer Program

Various works address the desegregation efforts in St. Louis for black students but are not particularly germane for this study because they are solely descriptive or too focused on exogenous impacts (Orfield et al., 1996; Wells and Crain 1997; Henig, 2008). A few works on St. Louis are useful for this study (Lissitz, 1992; Smrekar and Goldring, 1999; Heaney and Uchitelle, 2004). These efforts address the effects of the program from a more quantitative perspective and take into account student type, while other authors and works focus on the more qualitative effects of the program and do not look at specific student types for comparative purposes. Student types are based on the demographic status of a student in the areas of race (black or white), geographic affiliation (city or county), and in this case, VICC participation (transfer or non-transfer). These authors address the same key findings of school integration in St. Louis before and after the implementation of the VICC program. The actual findings of their studies exhibit positive results.

In 1999, Claire Smrekar and Ellen Goldring investigate the diversity in policies and practices that mold magnet schools in School Choice in Urban America: Magnet Schools and the Pursuit of Equity. The authors place specific attention on St. Louis, Missouri and Cincinnati, Ohio. In respect to this study, their assessment of the St. Louis policies and

practices are more relevant. Smrekar and Goldring find the actual magnet school climates in St. Louis City under-represent the African American presence on the waiting lists. African American students in St. Louis make up about sixty percent of student enrollment in magnet schools (Smrekar and Goldring, 1999, 102). They further support this finding by making reference to the heavy African American population in the St. Louis City and the implementation of the voluntary interdistrict transfer program. In spite of the misrepresentation, interviews of many magnet school teachers find the racially integrated magnet schools a benefit for all students.

Freivogel (2002) describes the movement towards desegregation in St. Louis which spawns the beginnings of the voluntary interdistrict transfer program. Freivogel discusses social and political attitudes about the desegregation efforts during the past four decades and explains his view on the program's effectiveness. Most important, he references a two-year achievement test study on the St. Louis transfer program conducted by a University of Maryland professor, Robert W. Lissitz, to support his claims of desegregation's effects (Lissitz, 1992). Lissitz's study is a longitudinal analysis of student participation and student achievement of the VICC program in the early 1990s. He collects data on four groups of students to assess developmental changes overtime.

Lissitz's analysis finds three trends on the students exposed to the student transfer program: high achievement of high school transfer students, parallels of the achievement gap in suburban and city schools, and high achievement of city transfer students in comparison to city non-transfer students (Lissitz, 1992). Even though the magnet school students are the highest performers in lower grade levels, over the years their achievement scores plateau whereas the high school transfer students continually increase their scores. Also, the

statewide twenty percent gap between blacks and whites is present in both suburban schools and city schools. Even more, African American students in the suburban high schools and middle schools score about ten percentage points better in communications and math than the African American students in regular city high schools and middle schools (Lissitz, 1992). Contrary to this study, Lissitz's results are exclusively for African American students and do not contain results for the participating non-African American students. This study aims to capture all students involved or exposed to the student transfer program. Lissitz's study is elaborately discussed in the fourth chapter.

In Unending Struggle: The Long Road to an Equal Education in St. Louis (2001), Heaney and Uchitelle recount the fight for desegregation in St. Louis City and assess the effectiveness of the voluntary interdistrict student transfer program. Historical research, personal experience, and interviews of students, teachers, administrators, and public officials comprise their work. They support and amplify the need to continue the fight for desegregated schooling as court decisions allow for opportunities towards resegregation. However, the results of two studies on MAP test scores, they conduct after the initiation of the student transfer program, are discussed in their book and pertain to the issues of previous research.

They conduct the first MAP test study in 2000. It examines the difference in scores of blacks and whites in magnet schools in comparison to St. Louis City non-magnet schools' blacks and whites. It is already presumed magnet school students score higher on the MAP test due to certain elements like better resource allocation, more educated background, and wealthier socio-economic status. However, the achievement gap between the two races is still present among the magnet school students, in spite of their higher performance on the

MAP test (Heaney and Uchitelle, 2004, 164). For example, there is a three percent gap between magnet school whites and blacks scores in comparison to the nine percent gap between the scores of St. Louis City school non-magnet whites and blacks.

They conduct the second MAP test study in 2004 and examine the difference in scores of blacks and whites in suburban schools, St. Louis City schools, the St. Louis area, and the state. While the comparative differences among all parties are important, the comparison between the St. Louis suburban schools and St. Louis City schools is essential for this study. The test results show black students in some suburban schools perform significantly better than black students in the city schools. However, there are black students in other suburban schools who score at the same and even lower levels than the black students in the city schools. This result leads to the belief that a significant gap in achievement levels still exists between blacks and whites (Heaney and Uchitelle, 2004, 206). Combined, the two studies are evidence of a city-suburban school system constructed on segregative tactics and its failure in achievement results because of it.

Significance of Study

This study examines the difference in academic achievement between African American transfer students and nontransfer students. This research is specific to districts in the suburban St. Louis County and the inner-city public school district in the City of St. Louis. Although this program transports students both from the city to the suburbs and vice versa, this work focuses on the African American students transferring from the city school district into the suburban school districts.

In 1972, the *Liddell v. Board of Education of St. Louis* case challenges the de facto segregated schools in the St. Louis metropolitan area. After significant negotiation, in 1975

the defendant and plaintiffs sign a consent decree, which is approved by the courts (University of Missouri, St. Louis, Center for Metropolitan Studies. 1978, hereafter UMSL-CMS). The 8th Circuit Court of Appeals introduces the concept of the interdistrict student transfer program to St. Louis in 1979 where the state of Missouri is required to pay for the cost of the program (620 F. 2d., 1291-92). Due to the decline in white enrollment in the city of St. Louis, blacks are left to attend majority all-black schools which maintain the city's segregated status (Freivogel, 2002, 212). This program is a resolution for this existing segregation.

The initial settlement agreement, titled *Craton Liddell, et al., Plaintiffs, v. The Board of Education of the City of St. Louis, State of Missouri, et al., Defendants No. 72-100 C(4),* allows for litigation to stay for five years to allow full implementation of the remedy to take place. Over these five years, the ultimate goal to achieve "a minority enrollment of 25 percent for districts that currently have less than a 25 percent minority enrollment" was pursued. Insofar as school districts continue to execute the remedy set forth by the initial settlement agreement, a school district can, if the 25 percent is reached before the five years, be declared as satisfying the pupil desegregation obligations and will receive final judgment from the court (1983, I-7). The plaintiffs stop seeking further desegregation acts within that particular school district. If a school does not meet the 25 percent minority enrollment within the five years, a monitor is provided to assess and prepare reports on the progress made. After another round of hearings and recommendations, a new remedy is set forth to get the school district to achieve the standards of the settlement agreement.

The program has two trends in enrollment. The first trend involves the increase of student participation in the program from 1983 to the 1999 settlement agreement. There are

2,294 students who transfer from the city to the suburban school districts during the first year of the transfer program. For the next four years, transfer student enrollment begins to increase rapidly: 4,870 the second year, 6,877 the third year, 9,300 the fourth year, and 11,800 the fifth year. City student participation in the program peaks in the 1990s during the 1990-1991 school year at a little over 15,000 student transfers. Hereafter, city student participation begins to decrease slowly.

The trend of enrollment in VICC after the 1999 settlement agreement exhibits a decline in student participation. By the mid-1990s, there are approximately 12,700 city students transferring into the suburban school districts. By the early 2000s city student enrollment in the transfer program is below 10,000. By the 2002-2003 school year there are 9, 571 students participating in the program. The number of student transfers from the city continues to decrease. Currently, there are fewer than 6,000 city students participating in the transfer program. Table 1-3 shows the enrollment trends of the transfer program.

Table 1-3: VICC Student Enrollment, 1984-2010 School Years

VICC Fall Enrollment Values*

School Year	Student Participation (Enrollment)
1983-1984	2,847
1984-1985	5,564
1985-1986	7,667
1986-1987	10,260
1987-1988	12,450
1988-1989	12,625
1989-1990	13,047
1990-1991	14,014
1991-1992	14,339
1992-1993	14,375
1993-1994	14,621
1994-1995	14,320
1995-1996	14,125
1996-1997	14,141
1997-1998	14,363
1998-1999	14,626
1999-2000	14,227
2000-2001	12,619
2001-2002	11,991
2002-2003	11,356
2003-2004	10,049
2004-2005	10,097
2005-2006	8,675
2006-2007	8,318
2007-2008	7,841
2008-2009	6,845
2009-2010	6,314

Source: Voluntary Interdistrict Choice Corporation Archives

*The enrollment numbers represented here are for fall school enrollment and do not reflect the total enrollment for each school year.

In 1999, the state files appeals on providing funding for the program, and the case settles based on the grounds that costs of the program are too high and the support of the program is dwindling among blacks (Limbaugh, 1999). The case is no longer under federal supervision and funding for the program from the state stops. Per the 1999 settlement agreement, "the Settlement Agreement and the Agreement Among Participating Districts, shall receive at least the same eligible pupil amount from the state for vocational education transfer students as it receives for general academic education students," and "the sending district shall pay the per pupil rate to the receiving district" (Blackwell, Sanders, Peper, Martin, 1999). A two-thirds cent sales tax increase is approved by St. Louis City voters to take on the funding the state no longer provides (VICC, 2008). The program is to stop taking new students after the 2008-2009 school year; however, in June 2007, the VICC Board, comprised of participating district superintendents, agrees to a five year extension. This extension allows the program to continue new student enrollment until the 2013-2014 school year. The VICC program can potentially continue as long as the VICC board of superintendents votes on and passes another extension. The program does not have a contracted termination time.

VICC is implemented at the school district level and allows black students from the St. Louis City schools a means to attend presumably higher performing schools in St. Louis County. Black students participating in the program are provided transportation to and from the county schools they attend. The participating county school districts choose what areas of the city they will accept black students from, which limits the choices of school districts some black families have as transfer options. Participation in the program is based on an

application process; not all families applying have their children placed in a school due to high demand.

This dissertation serves as a unique student based assessment of African American student achievement in an integrated suburban setting. The goal of the research is to compare the achievement test scores of black transfer students to those of students attending their geographically assigned school district from both the city school district and the participating suburban school districts in St. Louis. These comparisons aid in better understanding whether racially mixed suburban settings matter when educating black students.

This research advances the field by using individualized student level, school building level, and school district level data for assessing this desegregation program as a policy tool. No other study on school desegregation programs or student transfer programs assesses the academic achievement and achievement gap of individual student test scores where the data is disaggregated based on program participation, race, school building attended, and school district attended. It is also the first time individual level data on the St. Louis transfer program is examined longitudinally. Wells and Crain (1997), Freivogel (2002), and Heaney and Uchitelle (2004) have research on the St. Louis voluntary student transfer program, but they do not examine data at the individual level nor over time. Even more, the St. Louis voluntary transfer program is a unique policy experiment that transfers students across county boundaries among multiple school districts. It is a unique transfer process because it differs from the outcome of the *Milliken v. Bradley* (1974) decision, where Detroit, Michigan's suburban school districts are exempt from assisting inner-city school districts.

The St. Louis interdistrict transfer setup between county and city school districts is unlike any other national school desegregation transfer program.

Research on the MAP test scores of the participating VICC students and school districts is crucial for determining how to create a more effective means to implement the VICC program and to fulfill the desired outcomes of its mission. By examining variation in MAP test scores of participating students and school districts, one can better visualize where students gain and or lose within this program.

The Research Design

This study uses five years of individual-level student data to examine the effectiveness of the Voluntary Interdistrict Choice Corporation (VICC) at the student, school building and school district levels. It seeks to illuminate the achievement gap involving the African American city students who transferred into St. Louis County suburban school districts, and the black students continuing schooling in the City of St. Louis during the 2005-2006, 2006-2007, 2007-2008, 2008-2009, and 2009-2010 school years. The difference in Missouri Achievement Program (MAP) test scores of black city transfer students and city and suburban students during these five school years is evaluated to examine the achievement gap. Eight separate longitudinal regression analyses measure the MAP test scores of city and county students.

The dependent variable is student test scores on the MAP test. The independent variables consist of five types of students: black city students, black transfer students, black county students, white city students, and white county students. The socio-economic status and educational limitation of each student are controlled. A student's socio-economic status is represented by his or her participation in the national Free and Reduced Lunch (FRL)

program. A student who uses an Individual Education Program (IEP) or has Limited English Proficiency (LEP) defines his or her education limitation. The hierarchical linear models look at the relationship between student test scores and student types over time. These models include school district level and school building level data: percent transfer students in a district, school district assessed tax valuation, and average student teacher ratio in a school building.

This study posits participation in the transfer program improves a student's academic performance; therefore, city transfer students should score higher than city residential students. Additionally, it posits from the 2005-2006 through the 2009-2010 school years, city transfer students score higher on the MAP test than city students who remain in the city's school system. It is anticipated the longer the participation in the program, the greater the affect the program has on student achievement. If the transfer program is improving student achievement of black students who reside in the city, the time analysis model should show achievement for black transfer students increases over time to a greater degree than the other student types.

Dissertation Outline by Chapter

The second and third chapters provide a chronological discussion of school desegregation at the national level and in St. Louis, Missouri. Chapter Two provides a historical background of the national initiation for desegregated education. The important court case decisions, federal laws, and executive actions that occur between 1950 and 1980 are the basis of this discussion because this time frame involves the most federal attention on desegregated education. The third chapter is comprised of three major sections: a discussion of St. Louis demographics from past to present, a thorough synopsis of the St. Louis

desegregation court experience, and a full description of the desegregation transfer program that developed from the court decisions. The conclusion of this chapter addresses the importance of looking at St. Louis desegregation efforts.

The fourth chapter covers scholarly research on school desegregation as it pertains to the quantitative analysis in this dissertation. The academic achievement gap between blacks and whites and the problems this disparity poses is a common discussion among scholars on desegregation. In this chapter scholarly research is introduced specifically to capture the methods for analyzing school desegregation. This research examines six school desegregation studies that discuss analysis in a multi-level, longitudinal manner. It also addresses how the research for the dissertation differs from these studies.

Chapters Five and Six entail the research design and results of the study. The fifth chapter starts with a detailed description of the data. Key definitions are reiterated or introduced. Each variable is given a complete description, explanation of significance, and method of measurement. The last segment of Chapter Five discusses the type of empirical analysis used in the dissertation and the reasons for using it instead of other form. The sixth chapter thoroughly explains the results of the research. It addresses each statistically significant relationship that is found in detail, presents an elaborate explanation of the substantive findings, and discusses what the results imply about the St. Louis desegregation transfer program. Those implications form the conclusions about the effectiveness of participation in the desegregation program in relation to student achievement and provide guidance for the next steps to take with future research.

Chapter Two

National History of Desegregating Education

This chapter provides a historical background of the national initiative for desegregated education. It covers important court decisions, federal laws, and executive actions that occurred between 1896 and the present. It discusses how certain landmark court cases and legislative and executive actions aided the legal demolition of the separate but equal doctrine and energized the movement toward desegregated public education. Additionally, it gives a brief description of the questions and main themes between the late 1800s, 1900s, and the present to interpret the change from segregation towards desegregation. Last, it explains the significant findings and major contributions of each judicial case and federal action.

"Separate but equal" practices prevailed before school desegregation was perceived critically important for federal government action. Initially governments used "separate but equal" treatment to give blacks a false notion of privileges and promises, and to give whites a feeling of protection from a black takeover (Klugar, 1975). However, through a handful of court cases and prominent black figures, the demise of separate but equal practices began.

From 1950 to 1968, the fight to implement public school desegregation, as determined by the Supreme Court decisions *of Brown v. Board of Education of Topeka, Kansas (1954)* and *Brown v. Board of Education of Topeka, Kansas (1955),* was hostile and showed the stubborn reality of citizens and governing officials alike (Peltason, 1971). Whether it was blatant noncompliance or schemes and plots, the southern states struggled for almost two decades over integration efforts, which can partially be attributed to lenient and ambiguous judicial decision making (Peltason, 1971). With some situations it took

brilliance and shrewd knowledge to expose the inadequate policy changes. Regardless of the rulings in *Brown*, it took the development of a determined federal government and additional court case rulings to stop the resistance and force the movement toward integrated schooling.

The presence of intentionally segregated dual school systems remained prevalent despite the landmark decisions made by the Warren Court. From 1969 to 1986, a new fight began by the Burger Court to improve, enhance, and stipulate the methods by which school systems were forced to desegregate (Davis and Graham, 1999). These court cases are referred to as the "remedies cases" because their decisions rely on furthering the interpretation of precedent rulings in order to better the applicability of unique desegregation issues. As a result of their efforts, the Burger Court began to divide in its opinions in multiple areas dealing with school desegregation. From class specifications to power of authority in lower governments, these decisions became controversial, especially as the Supreme Court began to experience cases not only from the South but the North and West as well.

The years between 1986 and 2000 marked a pivotal time in desegregation cases. During these years the impact of the *Brown v. Board of Education* (1954) decision weakened. School desegregation decrees became either lenient by ignoring achievement standards or were terminated. The role and supervision of the judiciary in ensuring equality for minority races in desegregation plans disappeared. More importantly, the evidence needed to reverse integration became less than the evidence needed to enforce it (Cannon and Johnson, 1999). As dismay about the outcomes of desegregation methods increased, so did the ease to thwart integration and the return to neighborhood schooling.

The Supreme Court has handled several landmark school desegregation cases since the first Brown decision to thwart intentional segregated schooling. Based on present day

desegregation cases, the Supreme Court continues to amend ruling after ruling to adjust the ramifications made by school desegregation efforts. Even more, school districts continue to make adjustments to their systems to achieve unitary status.

Before the 1950s

The following discussion of desegregation before the 1950s encompasses the rise and fall of the separate but equal doctrine. It provides a description of two Supreme Court decisions involving segregation and desegregation, *Plessy v. Ferguson* (1896) and *Missouri ex rel Gaines v. Canada* (1938). These two court cases set the stage for the national school desegregation movement.

Plessy v. Ferguson (1896)

In 1896, Homer Plessy, a participant in a test by the American's Citizen's Equal Rights Association, was imprisoned for violating the Louisiana Separate Car Act of 1890, which did not allow whites and blacks to share the same railway car. Plessy was not identifiably black, but was forced to move from his coach seat once he told the conductor he was one-eighth black. His imprisonment resulted from his defiance to leave his seat. Plessy filed a lawsuit claiming the statute infringed on his Thirteenth and Fourteenth Amendment rights. The Louisiana Supreme Court found the statute to be a "reasonable regulation" and rejected Plessy's arguments. The United States Supreme Court upheld the ruling of the Louisiana court, thus legalizing segregation.

This case marked the actual rise of separate but equal treatment of blacks and whites. Based on the Supreme Court's decision, two main themes developed. One, separate but equal treatment was legal. Two, equal treatment portrayed whites as superior and blacks as inferior. By allowing segregation, it was believed, as implied by Justice John Marshall

Harlan's dissent, that enforced separation would stamp blacks as inferior to whites (163 U.S. 537, 1986, at 553). Upon the legalization of separate treatment, those who opposed equal treatment of blacks and whites began to find ways exploit the rulings. Simultaneously, blacks began to increase their involvement in the fight for equal facilities and opportunities.

Missouri ex rel. Gaines v. Canada **(1938)**

In 1938, Lloyd Gaines brought suit against the University of Missouri Law School based on the allegation that the state of Missouri violated his Fourteenth Amendment right. At this time there was no law school specifically for blacks to attend. The University of Missouri Law School denied him admission, but offered his tuition be paid to an out of state law school by the state of Missouri. The Missouri Supreme Court found this law to be constitutional because schools in other states had good quality law programs. Additionally, the state court felt Gaines denied his option to apply for tuition for an out of state law school that provided education to blacks. The United States Supreme Court overturned this ruling on the basis that blacks were denied their equal protection of the law within the state of Missouri's boundaries.

This case questioned the constitutionality of a state's law when it applied its separate but equal protection inside the state for whites and outside of the state for blacks. Various themes about the Fourteenth Amendment were determined in this case. One, the occurrences within state boundaries must be adhered to inside the state. Therefore, a state could not ignore the law to create an atmosphere of equal public accommodations among races by paying the minority race to go to another state. If allowed, Missouri would have been free of having to protect blacks who attended schools outside of state boundaries. Another theme is

the concept of "one." It only took "one" black to need protection or equal accommodation based on the Fourteenth Amendment.

The end of separate but equal practices exhibited the diverging decisions of Supreme Court cases. Court cases from the 1930s aided in putting an end to segregated living in the United States. Particularly in the fight for racial equality, Footnote 4 in *United States v. Carolene Products Co.* (1938) paved the way for protection of the rights of minorities because it allowed "heavy scrutiny against legislation that discriminates against discrete and insular minorities" (Davis and Graham, 1999, 76). Interpretations of this clause were questioned later by two Japanese internment camp cases, *Hirabayshi v. United States* and *Korematsu v. United States*, which examined the method to scrutinize laws that permitted racial classifications (320 U.S. 81, 1943 and 323 U.S. 214, 1944). Equal protection and higher education lawsuits resulted in the beginning of the end of the separate but equal principle. These cases questioned the legitimacy of the Fourteenth Amendment's power and ability to enforce fair segregation of blacks and whites.

Three themes evolved. One, the effort developed to protect discrete and insular minorities by law, especially in instances where they could not protect themselves from the law. Two, the "strict scrutiny" concept rejected claims of unequal treatment of minorities. In the cases of the Japanese internment camps, scrutiny was not used on the legislation in favor of minorities. Instead, the scrutiny of the courts was in the favor of the national government. Three, the perception that minorities, especially blacks, were a threat to the public good of the state became blatantly evident throughout the equal protection and higher education cases. Starting in the 1950s, society moved from a time when the law rejected minority efforts to seek equal treatment to a time when blacks could use the law to sway a case in

their favor. It also marked a time when the diverging perception of the courts on the rights of minorities became obvious and controversial.

The 1950s: Race Conscious Efforts

During the 1950s, race conscious efforts to desegregate public schools emerged. It marked the time where school-aged children and their families were introduced into the fight for integration. Six Supreme Court cases on school desegregation and federal actions portrayed the massive resistance of the South. Notably in the 1950s, these court cases were recognized as major instances of opposition to integration and marked the origin of opposition for school integration in the South.

Sweatt v. Painter **(1950)**

Herman Sweatt applied to Texas State Law School and was denied because blacks were not allowed admission. A law school for blacks was established, but was not of the same quality that the white law students received at Texas State. Sweatt filed a lawsuit and the Texas courts determined the law school developed for the black students was equal to the Texas State Law School, regardless of teacher quality, textbook conditions, school reputation, and absence of the law school environment. Based on the quantitative and qualitative observations of the two institutions, the school for black law students was not equal to the state school. The Texas State Law School was found to be superior of the two. The ruling was reversed in favor of Sweatt by the Supreme Court (339 U.S. 629, 1950, at 631-636).

The major question in this case asked could the replication of higher educational atmospheres be created equally. From this question one key theme developed. Essentially, it stated that blacks could not receive identical training from a separate higher educational

institution. Grounds for this argument were based on the fact that higher education facilities were not equal in atmosphere, reputation, and provision. Therefore black students had to attend the higher education institution they wanted to pursue in order to receive the same higher education whites received, insofar as they could fulfill the requirements to be admitted. This case marked the end of the perception that blacks and whites could operate separately and receive equal accommodations.

McLaurin v. Oklahoma State Regents for Higher Education (1950)

G. W. McLaurin, pursuing a doctoral degree, was denied admission to Oklahoma State. Due to the decision of Missouri ex. rel. Gaines v. Canada (1938), the Oklahoma courts established a condition where McLaurin could learn in a segregated environment (70 Okla. Stat. 1941, at 455-457). However, the decision was overturned in the Supreme Court on the basis that McLaurin was handicapped in his studies because of the separate environment. Therefore his education was not equal (339 U.S. 637, 1950, at 460-461).

Diverse treatment because of race encroached one's ability to fully experience the education being pursued. The decision was up to the courts to determine how to administer an education to blacks or minorities. The fight over this method became the overarching question in this case. Without the decision of *Missouri ex. rel. Gaines v. Canada* (1938), black admission into a higher education learning facility would have remained a struggle.

Brown v. Board of Education of Topeka, Kansas (1954)

This case was comprised of five cases challenging segregated public education, but only four were assessed at this time. The Supreme Court addressed the fifth case separately due to the differences in alleged violations. Before the decisions were made, all parties were required to submit a brief that answered five questions based on the history and purpose of

the Fourteenth Amendment. The plaintiffs alleged their right to equal protection by the law was violated when they were denied admission to public schools in their community. Through an amicus curiae brief, the federal government called for an end to racial segregation in the nation's public school system. The Supreme Court ruled that segregation was not equal and therefore was unconstitutional. The justices believed "segregation of the children of the minority group deprived them equal education" (347 U.S. 483, 1954, at 494).

Attorneys from the National Association for the Advancement of Colored People (NAACP) decided in order to present the strongest legal argument they would use both legal and social science evidence against segregated schools. These grounds became the tools the Supreme Court relied on to support its decision that segregation was unconstitutional. The Fourteenth Amendment was the legal basis for the decision, while studies made by sociologists and psychologists on the detrimental effects of school segregation on black children were the social science evidence. The social science evidence showed that "a sense of inferiority affects the motivation of a child to learn" (347 U.S. 483, 1954, at 494).

The major contribution of this case stemmed from the decision to regard the effects of segregation on public education instead of using past rulings as the sole basis. The justices all recognized *Plessy v. Ferguson* (1896) and its doctrine of "separate but equal" as not befitting for the public education arena. Additionally, they referred to the higher education cases, like *Sweatt v. Painter* (1950), as invalid grounds on which to base a decision because these issues involved blacks of the same educational status treated inferior to whites through denial of admission or schooling conditions. This court case represented minority students

who still received inferior education, even when supposed equal but separate education was provided.

Brown v. *Board of Education of Topeka, Kansas* (1955) determined the method to approach desegregation. Each initial party was allowed to make a presentation on how segregation should be remedied. In the ruling, the Supreme Court required all local, state, and federal governments to abide by the new principles.

In the decision, the school authorities were given the power to enforce the new principles. The lower courts were advised to consider public interest, but those interests could not delay the movement toward the integration of public schools. However, the courts were allowed to judge the amount of time needed to carry out the desegregation plan, as long as the movement was effective. The justices completed their decision by stating the desegregation, beginning with the plaintiffs, should occur "with all deliberate speed" (349 U.S. 294, 1955, at 301). The major component of this case involved the assignment of duties to enforce the integration processes. School boards became new governing officials and the lower courts served them as an advisory board on the momentum with which the desegregation plans should move and how far school boards should go to implement plans. But because specific deadlines were not established, the absence of timely, effective school desegregation plans resulted. Two main themes that arose from the two *Brown* cases and resulted in additional cases were the conflict over using social science data and the resistance or question of the speed with which school desegregation decrees be developed and put into action.

Bolling v. Sharpe **(1955)**

Eight black students from Washington, D. C. were denied admission into a white school based on race. The NAACP lawyers alleged this action violated the children's Fifth Amendment rights to due process of law. The Supreme Court justices recognized the Fifth and Fourteenth Amendments were not interchangeable because the Fifth Amendment applies to the federal government while the Fourteenth Amendment is applicable to the states. Otherwise, this case would have been the fifth case assessed in the first *Brown* decision.

The Fifth Amendment's due process clause states that the government must respect all of a person's legal rights. The courts found the blatant discrimination severe enough that actions charged violated the plaintiff's Fifth Amendment rights. Significantly, the Fifth Amendment was even more applicable in this instance instead of the other cases where the Fourteenth Amendment was denied because Washington, D. C. was under a "home rule" where the federal government acted as the state government. Therefore, the federal government *technically* denied due process of law.

Cooper v. Aaron **(1958)**

This court case was based on the efforts of the Arkansas District School Board to desegregate the Little Rock School System. In spite of the rulings in the *Brown* litigation, many Arkansas state officials and citizens opposed integrating the public schools. For three weeks, Governor Orval Faubus and the Arkansas National Guard prevented black children from entering Central High School. It took the intervention of the Attorney General of the United States for the nine black children to enter Central High School under the protection of the Little Rock police. However, the children were forced to leave due to an unruly crowd. Because of the citizens' and state officials' noncompliance to tolerate the integration efforts, President

Eisenhower sent federal troops to Central High School so the school board could advance its integration plan. His involvement became one of the most prominent executive actions taken to enforce desegregating public schools.

The case came to a head when the district court affirmed the school board's plea to postpone the integration process for two and one-half years because of the multiple protests. Although President Eisenhower continued to express an unfavorable opinion about integrated schooling, he promoted complying with the *Brown* decision (Davis and Graham, 1999, 127). When the Supreme Court assembled to hear the arguments of the plaintiffs, it denied the Arkansas District School Board's motion to delay integration.

The decision of this case addressed two situations. One, it explained the role of the school board as a governing body and enforcer of the laws of the land. The school board, in its petition for certiorari, blamed the difficulty to integrate on the actions of the public officials. The school board claimed equal protection was denied by the public officials and not necessarily by the public. In response to the school board's reasoning, the Supreme Court identified their role. A school board cannot make an excuse as to why it cannot integrate based on the actions of other government officials because they, the school board, were stewards of the public as well (358 U.S. 1, 1958, at 16).

Two, this case discussed whether state officials were required to recognize the federal laws and decisions made by the Supreme Court even if their interpretation of the U. S. Constitution differed. The Supreme Court noted that the Fourteenth Amendment required states to give all citizens equal protection of the laws. As an additional reference, the Supreme Court mentioned Article VI, Clause II of the U. S. Constitution which declared all

states are obliged to enforce and execute all laws created and decisions made by the Supreme Court because those were the supreme laws of the land (U.S. Const. art. 6, cl. 2).

The use of social science data created controversy. Many southern congressmen criticized the use of social science data in the 1954 *Brown* case, claiming it to be unprofessional (Davis and Graham, 1999, 121-125). For example, the usage of Kenneth Clark's doll test created many uneasy feelings about the validity of the ruling. Concerns emerged about the continuing use of social science data to determine the legality of rulings. Similar desegregation cases were not using social science data to win the ruling of the justices. *Bolling v. Sharpe* (1954), for example, used the due process clause of the Fifth Amendment and ruled segregation was unconstitutional (347 U.S. 497).

While *Brown v. Board of Education* (1955) helped decide the manner to which relief was to be granted, relief was not expeditious. The ruling determined desegregation should occur "with all deliberate speed"(349 U.S. 294, 1955, at 301). White Southerners used these terms to their advantage to move incrementally and reluctantly toward desegregation (Peltason, 1971). Resistance to desegregation took many forms. The development of the Southern Manifesto, John F. Kennedy's appointment of racist congressional representatives, and the opposition of 58 southern federal judges were just a few examples. Slow movement towards desegregation by school boards resulted in more lawsuits filed by Southern blacks. As previously discussed in *Cooper v. Aaron* (1958), a school board requested to postpone desegregation two and one half years due to potential hostility. Even though these six cases pushed school systems into elaborate terms, conditions, and restrictions for state officials and

school boards to follow when desegregating school systems, the difficulty with implementing and maintaining racial balance did not surface until the following decade.

The 1960s: From Massive Resistance to Desegregation Remedies

The differing practices of desegregating schools became more evident during the 1960s. Also, key political decisions and actions outside of the court were taken during this time. For example, in 1963 Alabama Governor George Wallace attempted to prevent the desegregation of public schools. This type of state level resistance demonstrated the lack of respect state level officials had for judicial processes and legitimacy of current rulings and policies. In 1964, the Civil Rights Act became law. It prohibited discrimination based on race, color, sex, religion or national origin. The Civil Rights Act banned discrimination on the basis of race in all federally funded programs and institutions. In 1965, the Elementary and Secondary Education Act (ESEA) was passed. As part of Lyndon Johnson's "War on Poverty," the ESEA provided federal funds to help low-income students, which resulted in the initiation of educational programs such as Title I and bilingual education. In 1966, the Equality of Educational Opportunity Study, often called the Coleman Report because of its primary author James S. Coleman, was conducted in response to provisions of the Civil Rights Act of 1964 (Coleman, 1966). Its conclusion that African American children benefitted from attending integrated schools set the stage for busing students in order to achieve desegregated schooling. The following court decisions were accompanied by extensive legislative and executive attention and created major changes to earlier court rulings.

***Griffin v. Prince Edward County School Board* (1964)**

As an example of the massive resistance to the *Brown* decisions, the School Board of Prince Edward County in Virginia tried its own strategy to delay integration by privatizing education. In a revolt against the *Brown* decision, Prince Edward County refused to levy taxes for the public schools, resulting in the closing of all county schools. A private foundation opened private schools only for white children to receive tuition grants. Black students had no valid educational institution to attend.

The decisions of the Supreme Court determined the actions taken by the school board and the county governments were blatant violations of the *Brown* decisions and were done intentionally to ensure segregated schools. Also, the Supreme Court pointed out, even though private foundations supported the schools, those private foundations were beneficiaries of the county and state support. It recognized that "deliberate speed" was loosely interpreted and could no longer portray the effort to effectively desegregate. The justices demanded quick and effective remedies and advised lower courts to use supervisors if noncompliance continued. This case represented the stern and forceful methods the federal judiciary began to take in order to ensure desegregation efforts were timely and adequate attempts toward integrating public schools.

***Green v. County School Board of New Kent County* (1968)**

This case exemplified the types of resistance to desegregation efforts that existed in the South when citizens were given the option of school choice. The state of Virginia's School Board of New Kent County developed a freedom of choice plan to desegregate the school system. Over a three year period the system remained segregated. Based on the plan white students could choose to attend Watkins School (all black) and black students could

choose to attend New Kent School (all white). Because this plan did not show any promise of an effective integration process, the Supreme Court found it violated the ruling of the *Brown* decisions (391 U.S. 430, 1964, at 441-442).

The main question in this case was whether giving the citizens a choice on desegregation allowed the school authorities to ignore their duties of enforcing and accomplishing desegregation plans on a nonracial basis. Additionally, it addressed the concept that giving citizens a school choice did not mean public schools would end up desegregated. The Supreme Court reminded the lower courts of their duty to assess the effectiveness of a school board's desegregation plan because their poor evaluations were apparent. The justices identified the established freedom of choice plan as a non-realistic "end to segregated education" (391 U.S. 430, 1964, at 438-439). In addition, this case showed the Supreme Court's evaluation of time and speed in an integration plan. For example, it declared the New Kent County School System remained a dual school system because over three years only "fifteen percent of the black students were attending a white school and no whites were attending a black school" (391 U.S. 430, 1964, at 442).

Before this court case, there was no understanding of how the Supreme Court determined how school districts could achieve unitary status. The Supreme Court held that school boards "operating state-compelled dual systems were … clearly charged with the affirmative duty to take whatever steps might be necessary to convert to a unitary system in which racial discrimination would be eliminated root and branch" (391 U.S. 430, 1964, at 437-438). While steps towards unitary status differed across school districts, it identified a setting good enough for attaining unitary status. The Warren Court held that a school district achieved unitary status when it was devoid of racial discrimination with regard to faculty,

staff, transportation, extracurricular activities, facilities, and pupil assignment (391 U.S. 430, 1964, at 432). These criteria were known as the *Green* factors and were the legal standards developed for unitary status.

The 1970s: Judicial Adjustments to Race Conscious Decisions of the 50s and 60s

The following cases were decided based on the context of desegregation in each particular segregated school system. The majority opinion of the justices allowed one to better comprehend the true nature of each case's relevance to school desegregation. In these cases the federal judiciary questioned the methods of implementing desegregation. Not only are race conscious decisions amended, but the presence of inequality outside of race emerged.

Swann v. Charlotte-Mecklenburg Board of Education (1971)

Swann combined five cases challenging segregated public schooling. Specifically, this involved a school system with a set desegregation plan that was not effective enough to eliminate the school's recognition as a dual school system. The state courts perceived the actions of the school system ignored the rulings of *Green v. County School Board of New Kent County* (1968). The district court argued it was segregated education and appointed Dr. James Finger and the school board to draft plans to desegregate. Significantly, Swann was one of the last school desegregation cases where the justices had a unanimous vote.

The Supreme Court addressed the student assignment remedies because they found pupil placement to be the central issue in the case. However, they credited the district court and district judge for attempting to desegregate. They noted the failed attempts of the school board required the outside assistance of Dr. Finger. Four problem areas needed to be addressed: racial

balance and racial quotas, one-race schools, remedial altering of attendance zones, and transportation of students.

In addressing racial balances and quotas, the Supreme Court acknowledged "the constitutional command to desegregate schools does not mean that every school in every community must always reflect the racial composition of the school system" (402 U.S. 1, 1971, at 9). They questioned the definition of the "norm" and its comparison to a "mathematical racial balance (402 U.S. 1, 1971, at 24)." Furthermore, schools that were all or predominantly one race were liable to close scrutiny to ensure they were not the results of state-enforced segregation. If found untrue, a transfer agreement must be made where a minority student received free transportation to a school he or she desired. The justices recognized that just because an assignment plan appeared to be neutral did not mean it reflected reality. For instance, maps were perceived as an insufficient means to creating attendance zones because they did not consider traffic and travel time. Transportation guidelines were not given because each situation was too unique to enforce rigid rules. However, transportation was approved as a means to desegregate a school system. Objection to transportation occurred if the health and education of a child is at risk.

***Keyes v. School District No. 1, Denver* (1973)**

Keyes v. School District No. 1, Denver (1973**)** was the first school desegregation case outside of the South to be considered by the Supreme Court. Parents of the Park Hill area in Denver sought to end the segregated nature of the Denver public schools. The core city schools were noticeably inferior to the white schools. This case questioned whether the school board should enhance only city schools. Enhancing the city schools would fulfill the

requirements of the district court and ignore the reversed decision by the Tenth Circuit Court of Appeals.

The Supreme Court addressed the notion that the district court and the Tenth Circuit Court of Appeals did not adequately enforce the standards of the law correctly. Both courts were right to address the segregation by the law; however, they did not correctly fix the issues with the school board. Here the evidence needed to be proven. The school board allowed segregation to occur. The Supreme Court claimed that plaintiffs did not have to provide evidence of de jure segregation. They distinguished de jure from de facto segregation by stating that de facto segregation was proven by purposeful or intentional segregation like in the Swann case.

In dissent, Justice Rehnquist contended that de jure and de facto segregation principles had not made significant progress in determining decisions of the Supreme Court. He discussed an effort to abandon the distinction due to its ability to be controversial with the initial rulings in *Brown* (413 U.S. 189, 1973, at 255-256). In other words, the two principles were too subjective to apply, making it difficult for the Supreme Court to provide consistent judgment.

Milliken v. Bradley I **(1974)**

In *Milliken v. Bradley* (1974) a claim was made on behalf of black students that the Detroit Public School System was racially segregated. The district court requested desegregation plans that encompassed the larger Detroit metropolitan area. Upon receipt of the plans, the district court found those plans to be inadequate due to the exclusion of outlying school districts. There was no action taken to resolve the

segregation. Significantly, this case was the first time a remedy was created across districts when only one district was in violation.

In the decision, the Supreme Court claimed that significant segregation efforts in one area must prove to have the same effect in another area that would cause interdistrict segregation. Without this condition, a remedy including outlying school districts was not permissible. It chose not to include the outlying school districts because there was no evidence proving intentional and collective segregation. The proposed interdistrict remedy did not prevail.

The dissenting justices, Justice Douglas, Justice White, Justice Brennan, and Justice Marshall, all commonly held this ruling was unjust because the Detroit segregation issue was not settled. They did credit the district court for attempting to work on desegregation plans that would alleviate the segregation. However, the dissenting justices rebuked the state of Michigan for allowing impermissible actions to occur and the Supreme Court for making erroneous decisions in the ruling. The state of Michigan was now allowed to direct power to the school districts. The dissenters felt if Michigan was allowed this power, then other state governments could avoid their duty of enforcing the Fourteenth Amendment in the same manner. Essentially, these justices chastised the state for not adhering to the Constitution and for being meddlesome in other powers. On the other hand, the Supreme Court's claim that the object of justice was to "restore victims to a state in the absence of such conduct" was considered impossible to accomplish (418 U.S. 717, 1974, at 763). It could not claim to provide such an impossible amount of restitution to this extent because a time had never existed without segregated schooling. Therefore, no remedy could truly be performed or adequate.

***Milliken v. Bradley II* (1977)**

This case was a remedy to the *Milliken v. Bradley* (1974) case. The case needed to be remedied because the Detroit school system did not have an approved desegregation plan. Evidence showed that the school district needed to follow an interdistrict plan in order to maintain the pupil racial composition. The Supreme Court recognized this plan would involve inflicting change on uninvolved school districts because of the interdistrict scheme. Two plans were proposed, one by Bradley and one by the school district.

Bradley's plan ensured the pupil racial composition of the school district would be maintained. On the other hand, the district's plan ensured that the elementary students would experience desegregated schooling, but the high school students would attend neighborhood schools. This was seen as an effort to decrease transportation. In addition, the district introduced several remedial instructional plans to implement in the system to aid the desegregation efforts. The state board realized the planned programs were needed if the desegregation programs were going to be effective, but also recognized the plans were not necessarily going to repair the Constitutional violation. In the end, the Detroit Board's plan was chosen by the district court.

The Supreme Court addressed the decision of the district court because there was a dispute in determining what jurisdiction should bear the costs of the desegregation plan. As the justices gave credit to the district court for approving a remedial desegregation plan, they faced two questions. One, could the district court order desegregation decrees? Two, which jurisdiction(s) should pay for the cost of the desegregation plan? The justices determined the state of Michigan and Detroit board should pay the cost because they were responsible for the occurrences in *Milliken I*. Significantly, this case aided in understanding the role district

courts could have in implementing desegregation decrees. If violations were significant and substantial to warrant their presence, courts could enforce remedial desegregation plans.

Dayton Board of Education v. Brinkman (1977)

Dayton Board of Education v. Brinkman (1977) was another school desegregation case that occurred in the North. The Dayton School Board was segregating its city schools. However, this case was not over segregation, but over the extent to desegregate, as ordered by a court. The district court found evidence proving the segregation in the Dayton school system was intentional and the school district exhibited no efforts to alleviate those segregative actions. The district court created a plan aimed to remedy the three discovered segregative acts. However, when the case arrived at the Sixth Circuit Court of Appeals the plan was changed to a system wide desegregation plan. The Supreme Court found the Sixth Circuit Court of Appeals' plan too "sweeping" in its proposed remedy and believed the Sixth Circuit Court of Appeals surpassed its authority by implementing a system wide remedy for three instances of segregative action (433 U.S. 406, 1977, at 413).

The decision of this case arose on the basis that the Dayton City Schools were still experiencing segregation. The Supreme Court found because no constitutional violations were claimed, the justices could not make a decision on the plans. They ruled the Sixth Circuit Court of Appeals decision be vacated. The case was remanded for later proceedings that would be consistent with their opinions.

Four major changes occurred in the 1970s involving school desegregation. These changes continued into the 1980s. One, there were significant changes in legal interpretation between the Warren and Burger Courts involving school desegregation cases. Two, the evolving practice of transporting students (busing) impacted court cases. Three, the

movement of school desegregation outside of the South debuted in the Supreme Court. Now court cases from the North were present. Four, the emergence of the Mexican American struggle in the school desegregation cases were apparent. The Burger Court sustained the rulings of the landmark desegregation cases of the Warren Court up to a point, but later became divided on remedies. Due to heavy resistance and public opinion, the Supreme Court began to change.

The Burger Court began contradicting previous rulings. Burger's comment in the previous decision stated "one-race, or virtually one race, schools within a district is not in and of itself the mark of a system that still practices segregation by law" (402 U.S. 1, 1977, at 25-26). This spawned major controversy and opposition about the ruling because it allowed school systems an avenue to prolong the journey to desegregate. It also changes the intensity of scrutiny on the principles of *de facto* segregation and *de jure* segregation. By 1971, the Burger Court began breaking its record of unanimity. Busing was ruled an acceptable tool to thwart "intentional and historically proven" segregation based on race in *Swann v. Charlotte-Mecklenburg Board of Education* (1971).

Desegregation problems moved North and West. *Keyes v. School District No. 1, Denver* (1973) became the first desegregation case considered by the Supreme Court outside of the South. A growing phenomenon took place with the northern and western school desegregation cases. The distinction between de jure and de facto segregation became a main component of the decisions. Determining a case's outcome increasingly hinged on whether segregation concerned the practice of segregation or the principles of the law concerning desegregation.

Cases involving Mexican Americans and their struggle for desegregated schooling appeared on the docket as well. However, their cases were based around housing and economic placement and immigration inequalities. These cases were not viewed as directly related to segregated schooling due to the background context of economic and social position.

The 1980s: The Continuation of School Desegregation Implementation and Remedial Judgment

During the 1980s school systems nationwide were implementing their desegregation plans. Therefore, there is not much federal level action taken toward change. However, there are two cases that do show the tone of the time, *Washington v. Seattle School District No. 1* (1982) and *Crawford v. Board of Education of the City of Los Angeles* (1982).

Washington v. Seattle School District No. 1 (1982)

In this case, busing measures taken by the Seattle School District were perceived as a method of forced desegregation. Individuals who opposed busing efforts wanted it to be used as a voluntary method for desegregation. As a result of public opinion, Initiative 350 was passed by the state to outlaw busing strictly for the purposes of desegregating schools. The Ninth Circuit Court of Appeals found the initiative to be unconstitutional.

This case questioned whether the Fourteenth Amendment could be used to defend reasons for busing. In the decision, the Supreme Court explained that enactment of a law that makes it difficult for minorities to benefit from society was acceptable, insofar that the enactment was not based on racial discrimination (458 U.S. 457, 1982). Because of its racial context, Initiative 350 was deemed unconstitutional because it did not follow the principles spelled out by the Fourteenth Amendment. The Supreme Court further asserted its

presence in the decision by acknowledging its duty to protect those who were inconvenienced and denied equal opportunities by lower governments.

The dissenting justices, Justice Powell, Justice Burger, Justice Rehnquist, and Justice O'Connor, claimed policies that deny people access to public goods on the conditions of race did not violate the Fourteenth Amendment. As an example, they equated the benefits of neighborhood schooling, where one-race schools were dominant, to interracial schooling. Furthermore, they argued that the state should be allowed free movement in choosing where to execute its powers (458 U.S. 457, 1982, at 459). The views of these justices approved of "states' rights" and a state's ability to hold legislative powers.

Crawford v. Board of Education of the City of Los Angeles (1982)

While the trial courts waited for a desegregation plan for the Los Angeles Unified School District (LAUSD), California voters approved Proposition I. Proposition I was an amendment to the due process and equal protection clause of the state's constitution. According to this initiative, the courts were allowed to wait for judgment of the federal courts to enforce mandatory pupil assignment and transportation. Therefore, desegregation plans involving these two methods could not be performed and allowed plans to be put off.

Unlike the Washington case, the Supreme Court affirmed that Proposition I was constitutional under the Fourteenth Amendment because it did not express a racial classification that would violate the amendment. Furthermore, the Supreme Court reminded the lower courts and governments that this ruling did not allow them to bide time and encouraged that the search for other methods of desegregation implementation continue.

In dissent, Justice Marshall found the ruling to be based on the literal meaning of the initiative not to consider the inequalities experienced by its impact. He felt regardless of the

"plain language," the racial implications were felt. The inequality based on racial "class" became evident when seeking reciprocity. Instead of addressing concerns with a local school board, individuals had to address concerns of desegregation to a higher government office (458 U.S. 527, 1982, at 548).

The Burger Court began exhibiting reluctance to school desegregation movements as opposition to Supreme Court decisions grew. For example, the opposition towards busing black students to white schools produced the migration of whites to the suburbs and increased white attendance in private schools (Davis and Graham, 1999, 220). This migration aided in creating the perception that racial segregation was not the true issue as alternative school choice options and new geographic assignments were pursued by whites (Davis and Graham, 1999, 220). *Washington v. Seattle School District No. 1* (1982) and *Crawford v. Board of Education of the City of Los Angeles* (1982) were two cases used to provide an insight into the opposition of the people and government officials to busing. Initiative 350 (*Washington*) and Proposition I (*Crawford*) were passed to prohibit busing for the purpose of school desegregation. The opinion of the Supreme Court in these two cases differed. The decision in Washington found busing as the only means to desegregate the school system, while the decision in Crawford affirmed the proposition, claiming the context was not racially motivated. Even more, desegregation issues involving busing began to drop from the docket.

Post 1990 to present: From Race Conscious to Race Blind Efforts

The late 1980s to the present was recognized as the era of resegregation of urban education. The following court cases and federal actions dispelled the conflicting purposes of

desegregation plans, the changing policies in the judicial system, and the decisions of the Supreme Court that condoned and influenced resegregation (Orfield and Eaton, 1996).

Unlike the previous Warren and Burger Courts, the Rehnquist Court's decisions provided enough lenience in their rulings for school districts to resegregate. Davis and Graham (1999) noted that up until the 1990s, school desegregation cases were turned away from the docket. For elementary and secondary education, the desegregation cases pertained to issues of term limits and federal supervision of desegregation decrees while higher education desegregation cases dealt with dismantling de jure segregation.

Missouri v. Jenkins **(1990)**

Kansas City voters repeatedly rejected passing a property tax increase to fund a magnet school desegregation plan for the Kansas City, Missouri School District. After these failed attempts to approve the tax increase, Judge Russell G. Clark, a federal district court judge, ordered the tax increase himself (495 U.S. 33, 1990, 40). This case raised two questions. One, it questioned the ability of a district court to raise taxes. Two, it questioned the limits of power a district court judge had when enforcing desegregation decrees.

The Eighth Circuit Court of Appeals modified the order by stating Judge Clark should have instead ordered the school board to raise the property tax to pay for the plan instead (495 U.S. 33, 1990, at 41). The Supreme Court upheld the Eighth Circuit Court of Appeals modification and affirmed the protection that devolved from judicial authorization and guidance of local governing institutions (495 U.S. 33, 1990, 58). This case marked a pivotal moment where the judicial system started devolving the responsibility of handling segregation issues to lower levels of government (Davis and Graham, 1999, 360).

Board of Education of Oklahoma City Public Schools v. Dowell **(1991)**

By the 1990s school boards sought release from federal court supervision upon compliance with previously set desegregation decrees. The Board of Education of Oklahoma City began its court ordered desegregation plan in 1972. One of the major components of this plan was the busing of black students to white schools. In 1977 the district court granted the school system unitary status. In 1984, a student reassignment plan was created to lessen the amount of time black students traveled to school. The new plan returned previously desegregated schools back to one-race schools. The original group that sought desegregation responded by filing a motion to the district court to stop the new plan because the school system had resegregated. In response the district court held that the case was terminated and denied the respondents' motion.

In this case, the main question asked if desegregation decrees have time limits. In the Supreme Court's decision, the majority agreed a time limit exists and can be surpassed once proven by the school district that there was an effort to fix the past and that segregation would not return (498 U.S. 237, 1991). Dissenters found controversy with the ruling because past acts of resisting desegregation in Oklahoma City were not adequately examined before the ruling was given and the presence of one-race schools could have been prevented (498 U.S. 237, 1991, at 240). This decision was considered a very ambiguous one because it left lower courts with very little direction when it came to determining how to properly grant school districts release from judicial supervision (Davis and Graham, 1999, 360).

Freeman v. Pitts **(1992)**

The DeKalb County School System (DCSS) had been under a court-ordered desegregation decree for almost two decades. In 1986, DCSS wanted to be recognized and

declared a unitary school system. Despite the corrections made to the vestiges identifiable of the previous court ruling, the district court sanctioned incremental withdrawal of supervision. The district court's assessment found DCSS did not hold the characteristics of a unitary system based on the factors developed by the *Green* case: teacher and principal assignments, resource allocations, and quality education. The United States Eleventh Circuit Court of Appeals furthered the decision by stating all vestiges of the previous court ruling should be rectified and in practice for several years before acknowledging DCSS as unitary.

The opinion of the Supreme Court addressed two questions. One, were district courts allowed to relinquish their supervision and control over school systems which had not fully complied with all requirements of a desegregation decree? Two, was the United States Eleventh Circuit Court of Appeals wrong in not allowing the district court to incrementally withdraw supervision from all aspects of the desegregation decree? In reference to the initial question, the justices determined that a court could return control to a school system only in areas that had met the requirements of the decree. Other requirements that were not met should remain under the jurisdiction of the judiciary. Additionally, the justices provided three points courts should utilize for their discretion before deciding to withdraw: "whether the areas to be withdrawn from had fully complied to the decree, whether withdrawal of judiciary supervision would allow the practices of compliance in other parts unfulfilled in the decree, and whether the school system had provided enough evidence to the public and parents of the students of the inflicted race that compliance to the entire decree was being pursued and achieved in 'good faith'(503 U.S. 467, 1992, at 491)."

The answer to the latter question explained that the Eleventh Circuit Court of Appeals wrongly asserted the discretion of the district court. The Eleventh Circuit Court of Appeals

denied the district court the ability to permit DCSS autonomy in rectified areas and provide supervision in noncompliant areas. Based on the *Green* ruling, there was no stipulation for each court-ordered decree to cure all six areas. School districts were to cure only the vestiges of de jure segregation identified as unconstitutional. A school system was not required by law to cure any imbalance that resulted from demographic changes. This case was reversed and remanded to the United States Eleventh Circuit Court of Appeals to complete the findings of this opinion. Significantly, this opinion sanctioned the assessment of other court-ordered desegregation decrees, which in essence pushed the move toward resegregation. The following three court cases provided examples of this transition.

United States v. Fordice (1992)

This case began with a suit filed in 1975 by black students who alleged Mississippi universities were operating under a dual system and violated the Equal Protection Clause and Title VI of the Civil Rights Act of 1964. The Board of Trustees of the University of Mississippi described the academic programs provided by each university and the policies shaping each student's admittance. The institutions were found by the district court not to be in violation of the Constitution. The program structure of each institution restricted the choice of school a student could attend by achievement scores and program interests. Because these institutions were previously declared dual systems in 1964 and ordered to comply with Title VI of the Civil Rights Act of 1964, the plaintiffs brought suit, alleging that the institution maintained its prior dual system. The question addressed in the case asked if the institution, in practice, dismantled its dual system. In affirmation with the district court, the United States Fifth Circuit Court of Appeals held that the Mississippi universities were not in violation.

In the Supreme Court's decision, the justices disagreed with both the district court and the United States Fifth Circuit Court of Appeals. According to the justices, adoption of race-neutral policies was not enough evidence to prove compliance with the laws of desegregation. This decision reflected Justice Marshall's dissent in *Crawford*. As grounds, the Supreme Court assessed four university components: the admission standards, program duplication, institutional mission assignments, and continued operation of all eight universities.

The justices found students with high scores on the American College Test (ACT) attended the previously all-white universities while the lower scorers attended the all-black universities. The most difficult college to attend was the only institution that used a student's grade point average (GPA) as an alternate method for automatic admittance. The use of social science data on the ACT provided evidence showing the disparate scores between black and white students. As a result, the justices advised the new method for admission should be used on an equal basis, like the GPA. Additionally, since the ACT proved to be adopted for discriminatory purposes, the universities needed to use student GPA as a determining factor for admission. The Supreme Court concluded that the state did not meet its requirement to dismantle its dual system and was in violation of the Constitution.

Although the apportionment of black and white students was an obvious issue in this case, one major question surrounded the process universities used to choose potential students. Could an institution’s selection process of its student body be discriminatory? Based on the ruling of this court case, it was possible. However, higher education was declared separate from the confines of elementary and secondary education in the *Green* case. Then the question became if choice was discriminatory, could it be used for the same grounds and

paralleled to instances in elementary and secondary education where segregative economic policies forced minority groups' choices on education quality?

***Parents Involved in Community Schools v. Seattle School District No. 1 and Meredith v. Jefferson County Board of Education* (2007)**

These two court cases were similar in context, but differed in their backgrounds. Because of their similar context, the Supreme Court addressed them together to consider the central issue, "the use of race as criterion in the assignment of students to public schools" (551 U.S. 701, 2007, at 25-28) Seattle's situation involved a school district that had never been found or classified as a dual system and had never been supervised under a court-ordered desegregation plan. The Seattle School District allowed student assignment to be based on school preference, race, and school to home proximity in an effort to achieve a racial composition in its high schools reflecting the racial composition of the district. A non-profit organization, Parents Involved in Community Schools, filed the suit representing parents who disapproved of the racial classification in the student assignment policy. However, the policy was upheld by the Ninth Circuit Court of Appeals.

The Jefferson County Board of Education had previously been placed under court supervision for its operation of racially segregated schools in 1973. Its supervision stopped in 2000. The next year, the school system began a new student assignment plan that involved racial balancing of its non-magnet schools. Racial balancing of the schools allowed a maximum of fifty percent white and a minimum of fifteen percent black students in each school. Even though student assignment was based on race, incoming parents were allowed to rank their preference of school and have their child admitted where space was available. However, a school that reached its maximum racial requirements could no longer admit students that racially imbalanced the stipulated composition. Crystal Meredith, a parent, filed

the suit on the basis that the student assignment policy violated the Fourteenth Amendment. The policy was upheld by the Sixth Circuit Court of Appeals.

In its opinion, the Supreme Court addressed one main question to determine the constitutionality of the two assignment policies: "whether a public school that had not operated legally segregated schools or has been found to be unitary may choose to classify students by race and rely on the classification in making school assignments?" To answer this question, the justices based their judgment on two government interests. One, the justices were concerned with the remedy of past segregative acts. While remedying the effects of past intentional discrimination did not apply to the Seattle School District, Jefferson County School District was recognized as unitary for fixing its dual system and operating without a desegregation plan. Two, the justices were concerned with the reasoning behind strict scrutiny of race in relation to the interest of diversity. As a reference, *Grutter v. Bollinger* (2003), a higher education case, found the use of racial classifications must be used in a broader assessment of diversity, not solely to achieve racial balance.

The justices concluded race was not used in the two student assignment policies in the broader sense for the purpose of exclusion. Each school system's reason for racial classification dealt with ensuring that housing did not prevent integration (Seattle's mission) or ensure a racially integrated environment (Jefferson County's mission). As an example, Seattle's demographic composition provided enough evidence to prove racial classification did not, and was not, the only means to achieve diversity. Based on the actual racial breakdown, the schools were even more diverse and less white under no classification method. Keeping the district demographic representation was deemed an unacceptable reason for enforcing diversity, especially when diversity already existed. In sum, the justices clarified the "full compliance"

clause from *Brown II*, which stipulated the usage of nonracial guidelines when dealing with school admittance. The policies were found unconstitutional and were reversed but the cases were remanded for further investigation.

Conclusion

From the rise of the separate but equal protection of citizens to its descent, one could see how rulings changed the manner in which cases were introduced and decided in the federal court system. The questions, themes, findings, and contributions of each case made it even more apparent the means to interpreting racial equality, especially in the realm for desegregation of schooling. Through examination of these cases and works, one could begin to see how the court docket and decisions on racial inequality went through a process of thinning. A resolution was achieved over time. Even though the presence of segregation remained evident during the fight for justice, its impact was lessened case after case.

The 1950s depicted the similar idea that the South was too resistant to comply with the decision of the *Brown* ruling. In a region where the majority of the citizens and governing bodies opposed segregation, it became difficult to find support to enforce the law. Blacks wanted an immediate remedy to segregation. Southern segregationists wanted to ignore and deny the law of the land to blacks because of their own ideals. While the Southern school boards, government officials, and lower courts fought to protect themselves and the South, a major struggle was created. No one government official wanted to be the first to agree with integration, but no one wanted to lose their position as a "statesman" by not enforcing the law (Peltason, 1971). Instead of speeding up the process of integration, delaying the plans seemed to give the appearance of denial to segregationists and affirmation of integration to the Supreme Court. Pressures from both the segregationists and the

Supreme Court were nullified by making small attempts. It took the Supreme Court's involvement to require the lower courts to enforce desegregation.

Between the 1960s and 1970s the Burger Court's decisions relied on the reaction of public opinion, especially on desegregation methods like busing. The majority of their decisions were more conservative than the Warren Court's decisions. This conservatism is evident in the increasing production of a plurality opinion among the justices. However, their divided opinions provide a reflection of reality on desegregation opinions. Desegregated schooling had a long journey before it could become a concept all could tolerate. The Burger Court rulings served as a reminder that without the precedent rulings of the Warren Court, the effort towards school desegregation would continue to experience the massive resistance of the past.

From the 1980s to present, the decisions of the Supreme Court weakened the impact of *Brown* I (1954). The decision to ignore the need for thorough investigations of school systems created the perception that providing evidence of desegregation was not critical to correcting dual systems. Additionally, the decision to deny admittance of desegregation cases to the docket allowed lower court power to be the authority in desegregation case outcomes, slowing the process for implementation. Also, the Supreme Court's flimsy usage and clarification of *Green* requirements allowed many desegregation actions to be perceived by lower courts and school districts as acceptable, and even worse, constitutionally practicable.

While the precedents set by the *Brown* ruling seemingly had a huge impact on the efforts of public school desegregation, critical assessments found opposing views (Cannon and Johnson, 1999; Bell, 2004, Rosenberg, 2008)). Gerald Rosenberg (2008) found the impetus of the civil rights movement did not become evident until all three branches of

government became cohesive on what actions to take when desegregating schools. For example, he recognized that federal court decisions were not successfully implemented when the Supreme Court was constrained by the Constitution or Congress. Derrick Bell (2004) believed the struggle to achieve the desired outcomes of school desegregation was never ending due to complacency and lack of an evolving strategy for improving race relations. Considering the present-day school desegregation court cases, both Rosenberg and Bell made valid arguments. If the Supreme Court operated as a “dynamic” court and not a “constrained” court, hypothetically the school desegregation issues of today would not be as similar to ones of the past (Rosenburg, 2008). If action was taken to prevent the presence of "silent covenants", race relations might be better and a racially mixed educational atmosphere might be the norm (Bell, 2004).

Chapter Three

History of St. Louis School Desegregation

This chapter is a chronological account of desegregated education in St. Louis. It has three major sections. The first covers how blacks in Missouri were educated from before the Civil War to the present. It identifies how the laws of slavery and black residency contributed to black education in the City of St. Louis, how anti-abolitionists' resistance fueled the fight for blacks to receive an education, and how changes in the terminology of Missouri statutes increased the educational opportunities for blacks in St. Louis. The second section describes the St. Louis desegregation court experience in the 1970s. It outlines the motions used to identify the state of Missouri as illegally operating segregated schools and the plan of action created for remedy. This section also briefly touches on the uniqueness of the St. Louis inter-district operation given the ruling in *Milliken v. Bradley* (1974). It focuses on the four decades that encompassed the St. Louis desegregation court battle, the development and construction of the desegregation plan, the implementation of the desegregation program, and the current phasing down processes. Beyond discussing the impacts of local governing coalitions, the court system attitudes, and the advancing intentions of the program, it addresses the economic and social experiences with housing and taxes that infringed on the ability of a black family or household to decide the best route for education. The last section describes the desegregation transfer program that developed from the court decisions. This description explains how the transfer program currently operates and how families use it to attain an education for their children.

St. Louis: 1821-1880

There was a common misconception that blacks in the United States were not educated before they were emancipated from slavery in 1863 and that only emancipation allowed them to legally pursue an education. Anti-abolitionists, especially in the South, feared a black rebellion would result from educating blacks so they refrained from teaching blacks basic learning skills. However, this fear was not felt as strongly everywhere, particularly in Missouri. When Missouri received its statehood in 1821, some blacks were taught to read, write, and spell alongside their industrial-type education by missionaries and their masters (Bellamy, 1974, 144). Missouri did not continue its practice of teaching blacks for long and began to take incremental steps towards denying blacks an education. For example, before 1825 the state apprenticeship system made it the duty of masters with apprenticed blacks to teach them reading, writing, and arithmetic. By 1825, the state legislature clarified this rule, stating that only freed slaves were *allowed* to be taught after completion of their apprenticeship (St. Louis, 1825, 133). This rule denied black slaves, who were prior to this clarification allowed to be educated, an education and provided a way only for free blacks to be taught when it benefited their employers.

Blacks – slave and free- largely received their education from black churches and their leaders. In the 1830s there were five Catholic churches in St. Louis and they were involved in a major push to teach blacks basic educational skills during Sunday school (Bellamy, 1974, 147-148). This effort was destroyed by the increasing presence of anti-abolitionists who feared educated blacks would read and understand abolition literature and revolt against slavery. As a result, many schools and churches where blacks learned were destroyed. The fight towards educating blacks in St. Louis intensified. It did not become

illegal to teach blacks until 1847. Missouri statutes then made it a felony to educate blacks by stating that "no person shall keep or teach any school for the instruction of negroes or mulattos, in reading or writing, in this State" (Laws of the State of Missouri, 1847, 103-104). In spite of the law, many continued to educate blacks. By 1860 black churches under the guise of Sunday school held educational programs for black youth, and Catholic sisters and free black women taught blacks under the guise of sewing class (Bellamy, 1974, 152).

In the same year that blacks were emancipated from slavery in 1865, the Missouri constitution made it the duty of the state to provide education for blacks and appointed school boards to establish schools for black youth (Savage, 1931, 309). Opposition to blacks and whites schooling together pushed schools to be segregated, in spite of blacks and whites attending church together. Enumerations were taken annually of black and white school-aged children for education and taxing purposes, but there was a tendency to undercount the number of black students to prevent establishing a school for them. It was common practice for school boards to become complacent and ignore establishing schools, blaming a low black population as reasoning for not following the law (Savage, 1931).

In 1875, the revised Missouri Constitution changed the 1865 terminology from "may" to "shall" in regards to school segregation. It stated," …separate and free schools 'shall' be established for the education of children of African descent (Constitution of 1875)." While this made establishing schools for blacks mandatory, keeping them segregated bolstered the issue of distance between home and school for blacks. Now blacks who were already missing in the classroom due to being miscounted or residing in an area with a low black population needed a school to attend, which was likely to be very distant. The struggle of blacks to receive education pushed the "separate but equal" doctrine established in 1896 in

Plessy v. Ferguson. This doctrine, before ensuring social equality, ensured education would be provided for blacks to the extent that whites received it.

The City of St. Louis and St. Louis County: 1880-1971

From the 1880s to the present, St. Louis City always had one of the highest counts of black and white populations in Missouri but it had one of the lowest percentages of black population in comparison to other counties during the post-Civil War years. As the percent of black population in St. Louis increased, it decreased in other counties. From 1880 to 1920, the black population in St. Louis grew from 40,798 (6.1%) to approximately 69,252 (9%) (United States Census Bureau). Smaller, less populated areas in the 1880s like Jefferson City, Mexico, and Macon had a higher percentage of blacks, but it decreased overtime.

In the years before the rulings of *Brown v. Board of Education of Topeka, Kansas* (1954), St. Louis City's population was majority white. The St. Louis Board of Education operated as a dual system, comprised of a majority of all-white schools and a few all-black schools. The first two African American high schools in the city of St. Louis were Sumner High School (established in 1875) and Vashon High School (established in 1927). At that time, Stowe College (established in 1890) was the first and only African American college in St. Louis. It only offered degrees in education. While segregated schooling was practiced in the city and county in elementary and secondary education levels, the private higher education institutions began to allow admission for blacks by the mid-1940s. St. Louis University, Webster University (Webster College at the time), and Washington University – St. Louis, admitted African Americans by 1944, 1945, and 1947 respectively. The University of Missouri – St. Louis was founded in 1963 and upon establishment admitted blacks.

The racial composition of St. Louis City's population aided in reinforcing segregated schooling for quite some time. Colin Gordon's (2008) study on urban decay identified St. Louis as one of the worst cities with urban decline. He pointed out between 1940 and 2000 the central city lost more than half of its population (22). He asserted that the fate of cities was not a consequence of families and individuals making choices in a market, but rather that public policies sorted populations and resources in a manner that starkly provided and denied citizens the ability to move around the metropolis (Gordon, 2008, 38). The racial practices in real estate agencies in postwar St. Louis City made explicit connections between real estate values and black occupancy where white families had the opportunity to take advantage of economic growth patterns and black families did not. These opportunities were structured by local public policies and local real estate agencies.

As black residency increased, realtors and local property owners feared losing their control over the growing population and developed restrictive deed covenants. Restrictive deed covenants bound residents and real estate companies from selling, leasing, renting, or letting blacks occupy their property (Gordon, 2008, 71-75). This allotted certain areas to be sold to blacks and quelled the growth of black neighborhoods. Schemes of this sort created a significant population shift of the white families out of the city to the suburban St. Louis County (Murray, 1996, 31). This also ensured that black students would be geographically assigned to certain schools in the city.

Black residency in St. Louis City between the 1950s and 1970s increased by about 100,000 and white city residency decreased by about 330,000 (U.S. Census Bureau). Table 3-1 exhibits these population shifts. Many white city residents left for St. Louis County, a predominantly white (less than five-percent black) county to the west. There were two

African American high schools in St. Louis County, Douglass High School (established in 1928) and Kinloch High School (established in 1937) that the few blacks in the county could have attended. The State of Missouri did nothing to integrate public schools until almost twenty years after the *Brown* (1954) decision. The racial composition of the St. Louis City school system was highly segregated under state mandates up until the mid-1970s.

Table 3-1: Population Shifts of St. Louis Metropolitan Area, 1950-2010

Population of Caucasians and Blacks in St. Louis County and the City of St. Louis, 1950-2010

St. Louis County

Year	Total Population	Caucasians Number	Caucasians Percentage	Blacks Number	Blacks Percentage	Other Number	Other Percentage
1950	406,349	389,419	95.8%	16,819	4.1%	111	0.00%
1960	703,532	683,652	97.2%	19,007	2.7%	873	0.01%
1970	951,353	903,022	94.9%	45,495	4.8%	2,836	0.00%
1980	973,896	853,630	87.7%	109,143	11.2%	11,123	0.01%
1990	993,529	836,603	84.2%	139,044	14.0%	17,882	0.02%
2000	1,016.315	780,830	76.3%	193,306	19.0%	42,179	0.04%
2010	998,954	702,265	70.3%	202,787	20.3%	93,902	0.09%

City of St. Louis

Year	Total Population	Caucasians Number	Caucasians Percentage	Blacks Number	Blacks Percentage	Other Number	Other Percentage
1950	856,798	703,030	82.0%	153,766	17.9%	2	0.00%
1960	750,026	534,004	71.2%	214,377	28.6%	1,645	0.00%
1970	622,236	365,984	58.8%	254,191	40.9%	2,061	0.00%
1980	452,801	242,988	53.7%	206,170	45.5%	3,643	0.01%
1990	396,685	202,276	51.0%	187,995	47.4%	6,414	0.02%
2000	348,189	152,666	43.8%	178,266	51.2%	17,257	0.05%
2010	319,294	140,170	43.9%	157,093	49.2%	22,031	0.07%

Sources: United States Census Bureau, University of Virginia Library, and the Inter-University Consortium for Political and Social Research

In the 1970s, most cities like St. Louis found school desegregation issues a matter confined to the legal realm and that the social effects of school desegregation (tax base, housing location, minority rights) could have been dealt with through judicial processes. A prime example of this was the case of the Kinloch School District merger in the St. Louis County region. The all-black Kinloch School District was combined with Berkeley School District prior to 1937; however, the public schools were segregated based on the Missouri law enforcing a dual system (Laws of the State of Missouri, 1945). In 1937, the City of Berkeley, a predominately white area, was incorporated and immediately created its own school district. This separated it from the Kinloch area, a predominantly black area. The major difference between the two areas was the wealth and tax base in the Berkeley area, which flourished in comparison to Kinloch.

The court recognized the state did not fully adhere to the requirements of the *Brown* (1954) decision and ignored the reorganization plans of the North County areas. It was obvious the two schools did not compare since the Kinloch schools had inferior curriculum, equipment, teacher salaries, etc. The court found a constitutional violation and ordered the state and county officials to disestablish the dual system they allowed in the Kinloch School District (306 F.Supp. 739). Annexation of the Kinloch and Berkeley school districts with the Ferguson-Florissant school districts took place as an interdistrict plan to merge the school districts and thwart the dual system (388 F.Supp. 1058). This case was appealed to the 8th Circuit Court of Appeals by all three school districts, but the decision was sustained (513 F.2d 1365).

The Liddell Case: 1972-1985

Some argued "resolution must be pursued through avenues that accommodate both

legal requirements and pressing social policy considerations," finding it imperative for a city's community and its various political and social organizations to have had some form of guidance through the school desegregation process (Patton and Laue, 1978, 2). Therefore, school desegregation plans could have and should have been implemented and experienced in an orderly fashion. The *Liddell et al v. Board of Education of the City of St. Louis* (1972) case and the several parties involved tried to achieve just that. Initially these parties included the Concerned Parents of North St. Louis who brought suit against the St. Louis Public Schools (SLPS). This suit claimed the children, who were represented by their parents, were victims of racial policies and procedures established by the Board of Education of the City of St. Louis, which violated their Fourteenth Amendment equal protection right. They claimed these students were not receiving the same quality education as other students in the St. Louis Public Schools. The St. Louis Public Schools was deficient in several areas: poor conditions of physical facilities and equipment, limited extracurricular activities (especially involving sports), inadequate supply of instructional materials (especially in the elementary classes), limited amounts of advanced courses, lack of technology, and incompetent attention to students with learning deficiencies.

In *Milliken v. Bradley* (1974) the Supreme Court found it impermissible to involve an outlying school district in a desegregation plan if that school district was not found in violation of the Constitution. Therefore, even if differences existed between one school district and another, a desegregation plan could not cross district lines unless all districts under review were found operating dual schooling. Outlying school districts in Detroit were not found practicing segregated schooling and the Detroit Public School System desegregated without the outlying districts. The ruling in this case left little hope for St.

Louis in developing a multi-jurisdiction remedy.

The Litigation Phase: 1975-1979

The *Liddell* case was heard by Judge James H. Meredith of the United States District Court for the Eastern District of Missouri. On December 24, 1975, Meredith granted a consent decree to the two parties, allowing them to work together to develop detailed desegregation plans to propose to the court. This initial consent decree was unlike most outcomes from other national school desegregation cases. One, it did not find the St. Louis Public School System guilty of racial discriminatory practices like in *Griffin v. Prince Edward County School Board* (1964). Two, it did not order a detailed desegregation plan to be constructed like in *Swann v. Charlotte-Mecklenburg Board of Education* (1971). Meredith intended for the consent decree to be a straightforward approach towards a remedy and to aid in defraying the costs and time of having future hearings.

The Initial Consent Decree. Under the initial consent decree, the St. Louis Public Schools board agreed to adjust its practices to compensate four major programmatic provisions (University of Missouri, St. Louis, Center for Metropolitan Studies. 1978, hereafter UMSL-CMS). First, the faculty and staff of St. Louis Public Schools were to become racially balanced under a graduated plan (UMSL-CMS, 1978, 9). The district had to achieve a system with no less than thirty percent minority composition by the third year of the decree increasing ten percent each year. Minority composition had to be based on the predominant racial group of each individual school. Second, when the Board opened or closed schools, it had to give consideration to desegregation and the impact it would have had on racial equality of opening or closing a school (UMSL-CMS, 1978, 10). Third, reduction of high school segregation was to be addressed through the assessment of school patterns that

reflected discriminatory practices. Fourth, the school board needed to have established a magnet school program by the beginning of the 1976-1977 school year and increased a system-wide curriculum improvement (UMSL-CMS, 1978, 10). This gave the SLPS board approximately nine months to obtain funding and institute the program. These four provisions quickly became problematic.

The concept of the consent decree did not fare well with outsiders. In January 1976 (one month later) the National Association for the Advancement of Colored People (NAACP) petitioned the court to enter the case under plaintiff's status. The NAACP felt the Concerned Parents of North St. Louis did not adequately address all children who were allegedly victims of the St. Louis Public School's discriminatory practices and found deficiency in the consent decree because it did not mandate immediate desegregation (UMSL-CMS, 1978, 11). Judge Meredith denied the NAACP's request on the basis that its petition was untimely and claimed the consent decree was, at that moment, adequate. As a result, the NAACP filed an appeal to his denial. There were various teachers' organizations who also filed objections to the consent decree. Those objections were denied as well, but not appealed.

Over the summer of 1976, the magnet school program was well underway with the creation of ten magnet school sites. These magnet schools opened in September 1976 with an enrollment of 2,400 students. Each school aimed for a 50-50 racial balance between black and white students, but they allowed variation of racial enrollment of up to twenty percent for blacks and whites. This was partly due to the intentional exclusion of busing for students to access the magnet schools. The NAACP, still awaiting its appeal for plaintiff's status, found

the racial composition of the magnet schools "delayed the process of desegregation" (UMSL-CMS, 1978, 11).

In December 1976, the NAACP was granted intervener status by the 8th Circuit U.S. Court of Appeals, which immediately changed the outlook of the case. The NAACP's intentions focused on achieving a speedy process to implement a desegregation plan. However, the organization's presence was opposed by both the Parents of North St. Louis and the SLPS Board who filed an appeal to reconsider the NAACP's status (UMSL-CMS, 1978, 12). While the Board seemingly felt disadvantaged by the new status of the NAACP, the Concerned Parents of North St. Louis felt the NAACP destroyed the ease of the current litigation process under the consent decree. The U.S. Court of Appeals denied the Board's request to rescind the admittance of the NAACP's intervener status (UMSL-CMS, 1978, 13). As a result, the Board appealed to the U.S. Supreme Court to block the NAACP's involvement and to address the limitations of the consent decree. Some board members were skeptical and warned of the power of the U.S. Supreme Court. The Supreme Court denied their appeal the following year.

By 1977, Judge Meredith requested the potential plan for remedy. The SLPS board already received an extension on its proposal and used it to take into consideration the public opinions of various groups (consultants, students, teachers, parents, administrators, board members, organizations) in a series of discussion seminars (UMSL-CMS, 1978, 13). It was apparent the white student population was much smaller in the City of St. Louis; therefore, neighborhood schooling was not a viable option to help with integration. However, the large white student population in the adjacent suburban school districts would have been adequate. Given the outcome of *Milliken* (1974) the likelihood of attaining an interdistrict plan was

low, but the plaintiffs thought it was worth the fight. The SLPS board and the NAACP filed suit against the twenty-three suburban school districts declaring the suburban school districts were also part of the racial segregation of students in the St. Louis metropolitan area.

From these seminars, the board composed a desegregation proposal. On February 28, 1977, the board submitted its desegregation proposal for the 1977-1978 school year. This plan entailed a four-year process to include city-county school desegregation to lessen the racial isolation of high school students (UMSL-CMS, 1978, 14). The plan encompassed expanding the magnet school program, developing an education park, converting O'Fallon Technical Center into a four-year vocational school, and switching the sites of a high school (Vashon High School) and college (Harris Teachers College) (14). It also involved busing white county students to the city magnet schools and placing county teachers in low performing city schools (15).

There was heavy opposition from the community while waiting for the two plaintiff responses to the board's proposal. Two extremely vocal groups were the Involved Citizen's Committee and the Concerned Parents for Neighborhood Schools. The Involved Citizen's Committee's main concern was the busing aspect of the desegregation plan (UMSL-CMS, 1978, 19-20). This group, comprised of white opposition from south and south central St. Louis, opposed the busing plan to place a small number of white students in predominantly black schools. The Concerned Parents for Neighborhood Schools were concerned with the racial determinant used to assign white students to "inferior schools," which they felt was a discriminatory practice and unconstitutional (UMSL-CMS, 1978, 17). This group sought and filed intervener status.

By March, both plaintiffs found the board's proposal lacked adequate efforts to achieve substantial desegregation of the SLPS schools. By the spring of 1977, further dismay with the Board's plan increased the interest of other parties who gained amicus curiae standing (Concerned Parents for Neighborhood Schools, the Involved Citizens Committee, the City of St. Louis, and the Civil Rights Division of the United States Department of Justice) (UMSL-CMS, 1978, 19-20). The only agreement the parties came to was the expansion of the magnet schools. As a result, each of these groups drafted plans to desegregate the schools and achieve racial balance to accomplish a better plan than what SLPS developed. The indecisiveness on the desegregation plan for the 1977-78 school year was viewed as hindering progress. Motions were filed to include more parties with intervener status and amicus curiae status, and more motions were filed to address limitations on the intervener parties' involvement with litigation.

The Trial. The initial consent decree was viewed as weak based on several factors. The parties with legal standing could not agree on a comprehensive desegregation plan for the city to implement; they only agreed on the magnet school expansion (UMSL-CMS, 1978, 29). The initial deadline for the first desegregation plan's implementation was not successful. The desegregation plans addressed constitutionality issues that were not being considered because the purpose of the consent decree was to derive a desegregation plan through negotiation and cooperative procedures (UMSL-CMS, 1978). By the summer Judge Meredith issued a court ordered hearing to address questions of constitutional violation and remedy processes.

The initial portion of the trial was a twelve day process focused on a series of witnesses called by the NAACP and a cross-examination of those witnesses. Geographical

evidence from a series of maps from 1930 to 1977 was used to show the racial boundaries of the City of St. Louis. These maps exhibited a racial composition of heavy concentrations of the black population that increased northward and westward, while most of the white population in that area decreased (UMSL-MCS, 1978, 32).

The second portion of the trial was sixteen days of more witness testimony. These witnesses testified that the City of St. Louis was led by individuals who had no intention on desegregating the school system. Based on the statements of individuals, absence of racial documents, and the reassessment of the maps from the previous segment, a vivid portrait of intentional and unconstitutional segregation became apparent. For example, school attendance areas maintained racial separation in spite of changes in residential patterns (UMSL-CMS, 1978, 32). Student busing procedures were followed to get blacks into white schools, but those black students held different schedules and were not properly integrated into the schools themselves (UMSL-CMS, 1978, 36).

During this time the religious community and several faith-based organizations met and discussed peaceful means to achieving the desegregation process. The third portion of the trial addressed the remedy of the continuing segregative acts. Specialists were introduced to the case and proposed methods to desegregating St. Louis City schools. By February 1979, Judge Meredith heard the final argument.

In April Judge Meredith announced his decision that the City of St. Louis school district had not committed any constitutional violation and had fulfilled its duty by the 1955-1956 school year based on the decision of *Brown* (1954) to rid itself of discriminatory policies. Even more, the school system was applauded for enforcing and adopting neighborhood policies to help end the ongoing segregation. Meredith recognized the

continued segregative acts as a result of demographic shifts in population, which he claimed could not be controlled by the school system. While this seemed like a victory for the SLPS board, it remained obligated to carry out its agreement made under the consent decree to develop a plan.

Implementation Process and Premier Results: 1980-1986

Finalization of the Litigation Processes. Meredith's decision was appealed to the Eighth Circuit Court of Appeals on November 10, 1976, and overturned on December 13, 1976 (546 F2d. 768, 774). The Court of Appeals determined Meredith's interpretation of what was sufficient for eliminating past discrimination practices was too broad. Neighborhood school attendance policies and freedom of choice plans did not achieve unitary status as decided in *Green v. New Kent County* (1968) and *Swann v. Charlotte-Mecklenburg* (1971). The appellate court remanded the case back to the district court and ordered Meredith to derive and implement a desegregation plan for the St. Louis Public Schools, recognizing violations needed to be addressed that were not (491 F. Supp. 351, 353-354). Because the St. Louis Public Schools was, by that time, 80 percent African American, the appellate court offered some remedies that had been explored before. Some of these recommendations involved interdistrict and intradistrict transfers of students with the suburban schools in the St. Louis County. Offering these remedies changed the outlook on what party was liable for being wrong. Under this perspective, the violation of the Fourteenth Amendment was not by SLPS, but by the State of Missouri, allowing an interdistrict remedy to be permissible. The racial composition of the City of St. Louis (predominantly black) and St. Louis County (predominantly white) made it even more apparent that the two areas must work together to achieve desegregation (Murray, 1996, 51). The state of Missouri and the St. Louis County

school districts began to recognize their forced involvement in desegregating the City of St. Louis schools.

In compliance with the appellate court's orders, the SLPS board developed an intracity desegregation plan, using the expertise of Edward Foote, the dean of Washington University School of Law. This plan entailed placing 26,300 of the city's 63,000 pupils in integrated schools. It replaced one-race schools, expanded the magnet schools, addressed other school construction and destruction under the court supervision, and a committee appointed by the district court reviewed the citizens' inputs and opinions of those procedures. Even though this plan was approved by Meredith in May 1980, the scale of the issue continued to be a reminder of the difficulty in processing this program. The most important aspect of this remedy was the interdistrict transfer of students between the city and county school districts because it reshaped the concept of neighborhood schooling.

Under the district court's handlings, the remedy became more focused on the interdistrict mode of desegregation planning, ordering the interdistrict plan to achieve four major provisions (620 F. 2d., 1291-92). One, the defendants were to ensure feasible methods for county and city school district voluntary exchanges of students. Two, the Special School District of the county and city school districts had to merge into one entity providing vocational education programs. Three, the defendants were ordered to develop interdistrict plans that eliminated segregative practices of education in the county and city schools. Four, the St. Louis metropolitan area needed to eliminate its housing segregation tactics. In an effort to fulfill this fourth provision, the state of Missouri was required to pay 50 percent of the costs as an obligation to remedy the previous violations of intradistrict discriminatory acts.

This plan, approved by the district court, alleviated the violations found by the appellate court. The district court ensured the state and SLPS board would bear the costs of this new interdistrict plan due to their liability. Because the state allowed discriminatory actions to occur between the city and county, it was found liable for *de jure* segregation. SLPS allowed certain policies that created racially unequal balances in schools and neighborhoods, making it liable for de jure segregation and de facto segregation (*Liddell* v. *Board of Education of City of St. Louis*, 1972). The state appealed its liability on the basis that the remedy surpassed what it was charged, denying that the interdistrict violation was charged to them. However, because the state did not appeal in March 1980 the court's previous decision recognizing this violation, the state remained liable and the appeal was denied.

In December 1980, Judge Meredith removed himself from the case due to illness and Judge William L. Hungate replaced him. During this time, SLPS filed a motion to be realigned in the case as a plaintiff with the NAACP and the Caldwell plaintiffs in an effort to protest allegations against school districts in St. Louis, St. Charles, and Jefferson counties (Murray, 1996, 53). The district court granted this motion. Even though the suburban school districts were added, and the parties prepared for trial, the trial over the interdistrict phase never came to pass. Edward Foote received from March 4 to March 27, 1981 to present an interdistrict settlement in which he constructed a pilot program that went in effect the following school year. The pilot plan was given a temporary stay of litigation.

Since the 1970s, a group of county districts made plans to become involved in an interdistrict plan. The Coordinating Committee for the Voluntary School Desegregation Plan was comprised of five school districts (Clayton, Kirkwood, Pattonville, Ritenour, and

University City) that decided to participate in the initial voluntary student transfers. Due to the success of the pilot program, additional county school districts petitioned the court for admission to the voluntary plan during the 1982-83 school year. The four predominantly black school districts in the county did not participate in the plan because their racial make-up would not eliminate one-race schooling and the plan only allowed black city students to transfer into the predominantly white county school districts.

Judge Hungate became pressured by the appellate court to finalize the interdistrict plan. To force a decision, Hungate, in an interim order, revealed the consequences of finding violations in the county school districts. If violations were found, the county and city school districts were liable to a consolidated metropolitan plan where both the county and city school districts would have been under one school district and would have shared the same tax base. More importantly, a mandatory system of reassignment of students would have moved a substantial number of white students to predominantly black city schools, which would have pushed the concern of the city schools' lack of quality from the black students to the white students. Therefore, if sufficient county participation did not emerge for the voluntary program, a mandatory interdistrict remedy would.

The Settlement Agreement. Bruce La Pierre, a Washington University law professor, was appointed to negotiate a settlement between the plaintiffs and defendants. These negotiations were among the lawyers for the *Liddell* plaintiffs, the NAACP, the St. Louis Board of Education, and the participating St. Louis County school districts (sixteen of the twenty three county school districts). All parties, except for the state, signed a final agreement on March 30, 1983.

The state waited for the return of its appeal on being held liable and its requirement to fund the program, but it was denied. In one last effort, it appealed the appellate court's decision and petitioned for certiorari to the Supreme Court; however, the Supreme Court denied its petition. Since this was a settlement agreement, and not a court-ordered decision, the state stood its ground on not paying for the remedy. It used *Milliken v. Bradley* (1974) and *Milliken v. Bradley* (1975) as means to explain why it could not be forced to settle. One, an interdistrict violation by a state must have been found before that state could be ordered to fund the agreement (*Milliken* v. *Bradley*, 1974). Two, if a violation was found, a state could not be forced to pay for a remedy that surpassed the scope of the violation, which Missouri believed the settlement agreement did *(Milliken* v. *Bradley*, 1975). Because the state was not participating and noncompliant with the settlement agreement, it was not obliged to set forth any actions deemed necessary in the settlement agreement. The district court rejected the arguments of the state because it had been previously found in constitutional violation. The state appealed to the appellate court once more, and again, the appeal was denied. The state later filed petition for certiorari, which was also denied.

Judge Hungate accepted the settlement agreement on July 5, 1983 and filed an order for the plan's implementation. The ordered decree recognized the constitutionality, reasoning, and fairness of the settlement agreement. This settlement agreement went into effect for the 1983-1984 school year. During this time the Voluntary Interdistrict Coordinating Council (VICC) and Magnet Review Committee (MRC) were established to monitor and establish the implementation process for students and faculty involved in the school districts and magnet schools. VICC worked on the overall implementation process while MRC evaluated and reviewed the magnet schools. Their findings aided in determining

targeted areas where additional assistance, resources, and intervention were needed to further the desegregation process and measured the likelihood of positive outcomes of the desegregation plan.

The basics of the settlement agreement consisted of the county and city schools involved in voluntary interdistrict transfers of students, an expansion of the availability of magnet schools in the city and county, and developing instructional and institutional improvements that bettered the quality of the city schools. The state of Missouri would provide the majority of the funding for these provisions. Since the state did not comply and would not sign the agreement, the settlement agreement was contingent on the district court ordering the state to pay.

The settlement agreement set forth some stringent guidelines for all parties to follow. A comprehensive explanation of these guidelines is found in *Craton Liddell, et al., Plaintiffs, v. The Board of Education of the City of St. Louis, State of Missouri, et al., Defendants No. 72-100 C(4).* These explanations are briefly discussed below. They addressed racial balance based on planned ratios, magnet school expansion procedures, methods for maintaining and achieving quality education in the city schools, and the length of time for the plan to stay underway. The racial balance of suburban schools accepted up to 15 percent of minority students of their student population and were at most 25 percent of the student body in order to achieve racial balance (1983, I-2). This was only required if schools allowed this and could have denied admittance if space was not available (1983, I-3). However, there was nothing specifically outlining space availability and the denial process. Racial balance was also applicable to the faculty and staffing of schools. Black faculty and staff were, in another graduated program, incorporated to balance the racial composition of staff and faculty in

participating county schools (1983, I-4). Magnet schools were developed to attract white suburban students to the city schools. Therefore, transfers occurred from both directions: black city residents to the county and white county students to the city magnet schools. Fiscal incentives were incorporated into the plan to encourage school districts to participate in interdistrict transfers as well (1983, I-5).

Legal monitoring stayed for five years to ensure full implementation of the remedy took place. Over these five years, the ultimate goal was to achieve "a minority enrollment of 25 percent for districts that currently had less than a 25 percent minority enrollment" (1983, I-6, I-7). This goal was enforced to ensure school districts were fulfilling their desegregation obligations. Insofar as the school district continued to execute the remedy set forth by the settlement agreement, a school district could, if the 25 percent was reached before the five years, be declared as satisfying the pupil desegregation obligations and received final judgment from the court (1983, I-7). Even more, the plaintiffs stopped seeking further desegregation action within that particular school district. If a school did not meet the 25 percent minority enrollment within the five years, a monitor was provided to assess and prepared reports on the progress made. After another round of hearings and recommendations, a new remedy was set forth in order to get the failed school district to achieve the standards of the settlement agreement (1983, I-7). The district court supervised the progress up to two years after the five required years of implementation.

The settlement agreement allowed black students to transfer from predominantly black city schools to predominantly white county schools on a voluntary basis. White students from the county schools were allowed to transfer to magnet schools in the city. The settlement agreement allowed the school districts to maintain their autonomy instead of

being collapsed into one mega-district. Another advantage to the settlement agreement was that participation was on a volunteer basis; therefore, the participating families were the true decision makers in whether their child experienced different schooling atmospheres. The St. Louis desegregation plan was unlike other national desegregation plans. For example, in the *Swann V. Charlotte-Mecklenburg Board of Education* (1971) case, court-ordered busing and the redrawing of district lines was the result, and the plan was not a voluntary action. But the sixteen county school districts and St. Louis Public Schools were required to follow the demands of the settlement agreement as a form of reparation for found discriminatory acts. Additionally, the students who continued attending those sixteen county school districts were forced to participate and experience the desegregation plan.

The Voluntary Interdistrict Plan

The Voluntary Interdistrict Plan Underway & Year One

The initial participation from city parents was high, but citizens of the city and county were skeptical of the overall plan's impact. The state of Missouri still questioned its role in funding the plan. At the time of the plan's inception sixteen county school districts were participating. The other seven county school districts already held a minority population of 25 percent or higher and did not need to fulfill the requirements of the settlement agreement or make an effort to repair past discriminatory practices. Under the court-approved settlement agreement, black city families chose which of the sixteen county school districts they would have liked to attend.

In the first year of the transfer program's implementation 2,847 students participated in the interdistrict program: 77 percent were black students from the city, 12 percent were

white students from the county, and 11 percent were black students who transferred from county schools to other county schools. Of the 4,489 applicants, only two-thirds were accepted (Willie and Grady, 1985, 2). The U.S. Court of Appeals, under its stay requirements, controlled the scope of the program (VICC, 1984, 1-3). Growth for transfers were determined after the initial recruitment process was assessed through a court hearing.

In their 1985 report on the first year's implementation, Charles V. Willie and Michael K. Grady interviewed several focus groups of students, parents, teachers, and community leaders and composed an overall feeling on the program and its effects. They found 93 percent of transfer students experienced no major disciplinary programs, 90 percent were promoted to the next grade level, 88 percent had regular attendance, and 59 percent were involved in extracurricular activities. However, perspectives highly differed about these results and their outcomes (Willie and Grady, 1985. 4).

Black parents chose to enroll their children in the program because they were pursuing the better quality education county schools offered. Usually blacks found out about the program through news reports, following the litigation results, and from city teachers who enrolled their children in the program (Willie and Grady, 1985, 30-31). Black city parents were concerned with the faltering instruction, poor conditions of schools, class size, and class room discipline. In comparison to the city teachers, black parents involved in the program found the county teachers to be highly talented and helpful to their child's learning (Willie and Grady, 1985, 32-33). Many students needed remedial attention in addition to daily instruction because they were behind their grade level. Most of all, black parents openly expressed appreciation for the personal communication on the status of their child's

learning experiences Because of the amount of homework and communication from schools, black parents became more involved in their child's studies (Willie and Grady, 1985, 35-36).

Black families were most concerned with the issue of transportation and the duration of long distances it took to get to county schools (Willie and Grady, 1985, 36). Safety was a concern when weighing options. Non-participants rode their bikes to neighborhood schools and did not have to do so in the darkness of the early morning. Also, black city students and parents were initially apprehensive about the racial context the presence of black city students invoked by having them in county schools. They found the connections made between black and white students occurred, especially with the aid of different tactics like racial awareness workshops and multicultural talks (Willie and Grady, 1985, 37). Multi-year participants interviewed by Willie and Grady recognized the easing of reluctance by whites in the county and racial tension as the years progressed and more blacks were enrolled. Their feelings were contrary to those of school administrators who found the decrease in racial stresses was resolved by lessening the amount of city transfers in county schools (Willie and Grady, 1985, 38).

White families who chose to participate in the program were attracted for two reasons. One, those participating white students needed a more challenging classroom instruction. White students attending the magnet schools chose enrollment due to being bored in their normal instruction of their neighborhood school. The magnet schools catered to this challenge. Two, white families recognized that the black presence in the county was deficient (Willie and Grady, 1985). Some parents did not approve of the racial balance of their suburban school district and enrolled in the program to expose their child to a more

ethnically diverse educational setting. In comparison to the black transfers, the white transfers had substantially less dissatisfaction with their residential district.

White transfer parents approved of the instructional talent of the teachers in the magnet schools, but were dismayed by the poor conditions of the schools themselves (Willie and Grady, 1985, 62). Initially, the reluctance of the black and white students to intermingle occurred in the magnet schools. As with the county schools, the progression of the school year eased anguish and increased their relationships. Unfortunately, the magnet school attendees had to confine their interracial relationships behind the schoolhouse door because inner city safety was perceived too dangerous for white students to visit their new black classmates (Willie and Grady, 1985, 65). Even more, white students suffered losses. Due to the racial and separatist hostility surrounding the feeling of integrated schooling in their home district in the county, white transfer students lost friends at home.

The black and white perspectives of the interdistrict program were not solely confined to the program participants; the black and white community leaders also held perspectives that overwhelmingly shaped beliefs and opinions in the metropolitan area about integration, education, and most important, the transfer program and its effects. Both blacks and whites perceived there was something that needed to be done about the quality of education provided by the St. Louis Public Schools, but differences existed on how the remedial process should have handled those problems (Willie and Grady, 1985, 102). Whites agreed with containing the black students in the city for fear that the black city students' deficiencies would have tainted and widened their achievement gap by leveling their racial composition (102). Neither blacks nor whites wanted a quick and speedy implementation process. They

wanted to find a solution with speed, but felt implementation should occur at a steady pace (103).

Five Year's after Implementation: Status Report

In February 1988, a week long report of the first five years of the desegregation program was published in the St. Louis Post Dispatch. This report was a culmination of a three month survey on the overall effects of the transfer program. This section presents some of its findings. By the 1986-1987 school year, there were 9,302 students transferring from the city to the county schools and 549 students transferring from the county to the city magnet schools (Campbell & Uchitelle, 1987, 46-48). In June 1987, before the federal court underwent its assessment, there were only seven of the sixteen county schools that achieved their plan ratio set in the settlement agreement (Brentwood, Clayton, Hancock Place, Pattonville, Ritenour, Valley Park, and Webster Groves). However, the city public schools remained in disarray for the most part. City students' test scores continued to lag, city school building repairs were incomplete, and teaching materials were obsolete (St. Louis Post Dispatch, 1988, 5). Most parents of city students found the desegregation program depleted the "best minds and athletes" from the city (St. Louis Post Dispatch, 1988, 5).

During this time, city students in all-black schools who did not transfer into the county schools were not ignored, as obliged by the court. They received supplementary academic aids and instructional tools to better the quality of education and achievement. For example, computers and specialized teachers were implemented to aid with academic advancement. With the decrease in the student-teacher ratio, the students were given the opportunity to increase their achievement scores as well.

Several successes were found. Black transfer students were able to increase their academic achievement by attending the county schools; however, their presence and enrollment created more stress for the county teachers than anticipated. The county teachers began to experience more discipline problems than ever before. For instance, 1,164 students were suspended from schools, which amounted to 10.8% of the total transfer students participating in the program (Campbell & Uchitelle, 1987, 116).

The success of producing a multicultural atmosphere became questionable as black and white students did not show signs of positive coexistence and mixing. In one survey supervised by E. Terrence Jones, a professor at the University of Missouri-St. Louis, students, parents, and county teachers were asked do they strongly agree, partially agree, or strongly disagree with the statement that "transfer students have a lot of school spirit and pride in their county schools" (St. Louis Post Dispatch, 1988, 8). From the results, blacks seemed to strongly agree to having had school spirit to the same extent that whites seemed to disagree. Forty-six percent of black high school transfer students and 67 percent of parents of black transfer students strongly agreed with the statement. On the other hand 40 percent of white high school resident students, 40 percent of parents of white resident students, and 33 percent of county teachers (ninety-eight percent white) disagreed. Jones found this result a reflection of the whites' skepticism of blacks identifying themselves as part of the county schools (St. Louis Post-Dispatch, 1988, 8).

The initial rush to become a participant in the program dwindled at the five year mark. Even more, students, black and white, began to drop out of the program. Dropouts were constantly tied to the costs of the program on the city and county school districts involved and the cost of busing the students. There were several students awake before the

St. Louis metropolitan area began its daily routine due to being bused from the city to the county, or vice versa. Some students rode for up to ninety minutes to get to school every day. However, the majority of the students involved in the transfer program (approximately 72 percent) had rides sixty minutes or less (Campbell & Uchitelle, 1987, 56). In an alternate perspective, whites were concerned with the prospects that the cost of busing raised their taxes. However, most suburban school districts welcomed black students due to the monetary incentives provided by the state to participate and integrate.

By the fifth year of desegregating St. Louis Public Schools, the cumulative cost of the program surmounted $500 million (St. Louis Post Dispatch, 1988, 6). The state paid over $170 million to fund the program and provide incentives. While these costs at a comprehensive glance seemed confounding, opposing views existed among parents, school districts, and even legislators. State Senator Roger Wilson was quoted for his views on the morale around the state legislature. In discussing the negativity of the governor and legislature, Wilson found these acts "creates a furor in the state and a negative attitude" (St. Louis Post-Dispatch, 1988, 6). Contrarily, Governor John Ashcroft opposed the costs of the desegregation plan and found the money would be better allocated to "programs that [we know] could bring excellence to [our] classrooms—like paying teachers more" (St. Louis Post-Dispatch, 1988, 6). More importantly, the costs of the St. Louis desegregation plan was not the only desegregated schooling case receiving state funds. The Kansas City school systems were under a court-ordered plan as well, enforcing more demand on the purse of the state.

County and city dwellers had mixed opinions about the positive aspects of the program. There were both county and city residents who felt the desegregation plan was an

asset to the metropolitan area, just as well as there were county and city residents who found the plan a detriment. County and city school officials began to recognize the flow of athletic competition and academic achievement to the county schools. County schools were gaining top-notch athletes and their new black students achieved better in their schools (St. Louis Post Dispatch, 1988, 32). However, the city schools recognized the weakening of their athletic teams and a lowering of their already poor academic achievement with the onset of the plan (34). The magnet schools were highly used by the city residents, but not by the county residents (22). Skepticism remains about how beneficial the program really was or could have been for the future.

Blacks and whites held strong views against the city school system. Most white city residents enrolled their children in parochial or private schools in the city, whereas black city residents continued to educate their children through the city's public school system. Some argue this was a reflection of white city resident's decline in faith of the ability of the city school system to educate effectively and black city resident's hope in a one-day prosperous outcome (Willie and Grady, 1985, 103). Arguably, this could also have been a reflection of the options open to blacks and whites to pursue greater educational venues. Whether it was household income or mobility opportunities, whites still held the upper hand.

Initial Results: 1990s

Missouri's Push for Unitary Status. On October 11, 1991, the state, still uncomfortable about its role in the court-ordered desegregation plan, filed its original motion for Declaration of Unitary Status. The state did not want to pay for reparation of past discriminations and felt the program had done enough. At this time, the state still paid 100 percent of the costs of the interdistrict transfer plan and transportation costs. If SLPS was granted unitary status, it

could have had negative effects on the students and school systems participating in the program. There was too high of a population of students involved in the transfer program. Upon the release of transfer students from the program, a dual system would have reappeared. Finding unitary status would have meant immediate resegregation (Norwood, 2012, 23). Additionally, the burden of cost could have spread among the other parties, which was not favorable. Or, the costs could have been too expensive for what others were willing to bear and the program could have suffered. Dr. William Danforth, former Chancellor of Washington University in St. Louis, found the city, if left without the settlement agreement, would have been unable to afford the student population and without the newer facilities that resulted from the settlement agreement (Heaney and Uchitelle, 2004, 193). However, it still became questionable what to do if the state was granted unitary status and St. Louis Public Schools was not.

A good year to pursue unitary status was 1991 for several reasons. One, the last child in the *Liddell* case graduated. Two, the desegregation plan had been going on for ten years. Three, the Supreme Court recently decided in the *Oklahoma City Schools v. Dowell* (1991) that "desegregation remedies are not intended to operate in perpetuity and are only to be implemented for a reasonable amount of time" (498 U.S. 237). Any reasonable amount of time was to be found at the discretion of the court. In the following year, the Supreme Court recognized there could have been potential phasing out of the program and recommended that it be done incrementally (*Freeman v. Pitts* (1992)).

At the onset of the 1990s, there were many key elected leaders in Missouri who strongly opposed the desegregation program. Governor John Ashcroft, who served from 1985 to 1993, was against any money coming from the state to fund the plan. Attorney

General Jay Nixon, elected in 1992, tried to deter any further state involvement and aimed to achieve a unitary status. Governor Mel Carnahan, also elected in 1992, though against the transfer program, was the most cooperative official to try to find ways to end the program through negotiation (Wilson, 1997). At the city level, school board officials and St. Louis City officials agreed that the program should have ended. SLPS President Eddie Davis favored its cessation and the city's new and first African-American mayor, Freeman Bosley, Jr., favored a return back to neighborhood schooling (Gianoulakis and Bremer, 1994).

The efforts to stop the program would have essentially sent black students back to the city to the still poor quality city schools. It would have reversed the integration efforts of the city and potentially increased integration in the county if blacks moved there to pursue a higher quality education.

Program Updates for the 1990s. During the 1990s, the interdistrict's program participation began to decline. Table 3-2 is a summary of the annual student enrollment. It covers the first school year of the desegregation pilot program (1981-1982) through the 2010 school year. The drops in enrollment were most notable around the times when changes to the settlement agreement and court orders took place in the 1990s. From 1993 to 1996, participation decreased from a little over 14,000 to a little over 13,000. The decline of the program participants reflected the decline of total enrollment for all districts involved in the transfer program. Minority student representation in the suburban districts continued to increase during these years because of the increased black population in the county. In 1993, there was 25.66 percent black student population in the participating county schools overall. By 1996, there was 25.72 percent black student population in the participating county schools. In spite of the efforts to phase out the program, students continued their education

through the desegregation program and black students increased in minority representation in the county schools.

Table 3-2: Annual Student Enrollment in Transfer Program (1981-2010)

Annual Enrollment St. Louis Student Transfer Program

District	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Affton	0	48	92	172	270	351	355	361	365	407	387	430	405	375	365	368	386	404	331	304	310	278	245	221	191	153	137	124	109
Bayless	0	0	53	126	165	201	196	197	200	196	182	176	195	170	178	167	177	174	180	192	168	160	198	186	146	133	127	106	108
Brentwood	0	45	94	131	157	144	135	135	138	154	152	160	161	170	178	198	200	216	208	212	222	207	201	191	163	146	139	127	117
Clayton	30	78	122	175	200	272	294	311	344	388	425	412	432	424	418	433	448	476	479	474	475	512	513	486	460	458	473	468	452
Hancock Place	0	38	88	151	205	252	248	260	260	271	249	239	263	286	277	332	357	377	317	290	297	304	310	351	302	390	387	345	298
Hazelwood	0	0	24	117	177	509	437	343	241	142	99	67	39	21	12	7	6	4	1	0	0	0	0	0	0	0	0	0	0
Kirkwood	21	115	185	267	361	443	600	644	580	632	645	605	639	634	646	661	688	723	662	659	653	649	639	626	563	569	525	494	402
Ladue	0	85	125	142	200	304	391	337	346	330	327	362	387	369	350	379	418	456	359	276	229	159	112	81	62	42	21	13	5
Lindbergh	0	50	194	350	486	657	776	926	935	915	974	960	951	948	986	1,024	1,039	1,069	935	909	872	671	678	601	471	403	330	272	224
Mehlville	0	0	155	547	643	761	1,025	983	1,349	1,646	1,728	1,724	1,634	1,520	1,412	1,431	1,410	1,481	1,338	1,412	1,453	1,411	1,317	1,331	1,105	938	919	800	699
Parkway	0	110	485	1,162	1,862	2,453	3,745	3,692	3,734	3,795	3,859	3,691	3,703	3,518	3,323	3,242	3,212	3,159	2,846	2,722	2,683	2,675	2,558	2,414	2,105	1,981	1,817	1,594	1,428
Pattonville	23	121	282	467	656	991	977	958	943	1,006	1,101	1,026	1,048	974	1,068	1,078	1,133	1,070	882	720	616	453	329	254	199	148	100	66	47
Ritenour	50	215	292	459	540	760	837	642	571	548	451	445	415	360	290	230	175	145	98	63	36	22	9	6	2	1	1	0	0
Rockwood	0	0	102	507	821	1,162	1,370	1,652	1,866	2,242	2,304	2,520	2,598	2,662	2,624	2,561	2,593	2,750	3,095	2,538	2,407	2,495	2,318	2,181	1,920	2,107	2,089	1,880	1,808
SSD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	542	224	114	22	15	22	21	14	25	31	18
University City		2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Valley Park	0	0	33	96	157	162	162	184	181	186	184	173	158	151	146	149	193	248	244	253	252	241	230	208	192	204	195	174	**167**
Webster Groves	0	0	165	213	226	261	270	276	305	321	357	410	465	479	453	456	479	511	464	448	412	390	421	439	355	340	312	280	265
Total Enrollment in County Schools	**124**	**907**	**2,496**	**5,082**	**7,126**	**9,683**	**11,818**	**11,901**	**12,358**	**13,179**	**13,424**	**13,400**	**13,493**	**13,061**	**12,726**	**12,716**	**12,914**	**13,263**	**12,978**	**11,694**	**11,197**	**10,649**	**10,093**	**9,598**	**8,257**	**8,027**	**7,597**	**6,774**	**6,147**
St. Louis	NA	318	351	482	541	577	632	724	689	835	915	975	1128	1259	1399	1425	1449	1363	1249	925	794	707	556	499	418	291	244	171	167
Total Transfer Enrollment		**1,225**	**2,847**	**5,564**	**7,667**	**10,260**	**12,450**	**12,625**	**13,047**	**14,014**	**14,339**	**14,375**	**14,621**	**14,320**	**14,125**	**14,141**	**14,363**	**14,626**	**14,227**	**12,619**	**11,991**	**11,356**	**10,649**	**10,097**	**8,675**	**8,318**	**7,841**	**6,945**	**6,314**

Note: Data through 1983-1984 represents spring enrollment. All other data is fall enrollment, although not always on the same date.
Note: 1999-2000, 2000-2001 & 2001-2002 data is rounded up to full numbers.

FallEnrollment81on

The Final Consent Decree. In 1991, the state submitted its request for unitary status; however, it did not receive any substantive response. At this time District Court Judge George F. Gunn began to preside over the case. In 1993, Attorney General Nixon asked the district court judge to cut off the membership of the students in the desegregation program and allow the current students to complete their education in the county school they were attending. The only students who benefitted from this plan would be high school students who were able to continue in the county schools and graduate. In 1995, Civic Progress, a group of elite business leaders, issued a report on their perception of what should have been done and submitted it to the district court. The report charged that the issue of the city school system started with its lack of resources and political support (Civic Progress, 1995). The city school system's issues were not just confined to those involved, but the entire St. Louis community. Therefore, the city school system needed the transfer program to allow its public education institutions to help repair. SLPS began to concentrate on improving the academic achievement of lower performing students.

In 1996, the city's school board requested that court supervision be phased out and the inner workings of the school system operate under neighborhood schooling. The request from the school came close to asking for termination of the interdistrict program. SLPS no longer wanted black students to come second to whites in the magnet schools and wanted black students to attend the schools based on their residence. SLPS still wanted the state to fund some of the system's maintenance and provisions. Judge Gunn called a hearing to determine what would be done with the program and when it would end. He ordered that the program's end be decided through a negotiation process led by Dr. William H. Danforth.

Additionally, the state started passing bills that relieved it of its funding responsibilities. For example, the state passed Senate Bill No. 360 allowing proceeds from the state's legal gambling enterprises to be used as revenue for the education fund (SB 360, 1996). Based on assessments, these funds would have been redistributed to school districts that were perceived deficient. This bill took much of the weight of the educational burden off of the state.

In 1997, the Joint Interim Committee on School Desegregation and Finance, comprised of state senators and representatives, decided to determine how funding for the desegregation could have been distributed. Because mediation was not moving fast enough with Dr. Danforth, the committee visited schools in St. Louis and also in Kansas City which had similar issues with its desegregation plans. The committee found the city schools were too inept to take on the return of transfer students from the county if the desegregation transfer program ended. The poor quality of schools reflected the inability of the school board to allot money wisely (Joint Interim Committee on School Desegregation, 1997). The Committee recommended that the desegregation programs be revamped to benefit the receiving school districts. A receiving school district received a subsidized payment for transportation and the actual cost of educating each participating student. Continuation in the program was voluntary for school districts and families.

Meanwhile, Governor Carnahan's goal to remove state funding remained. In 1998 Missouri passed Senate Bill No. 781 that provided $40 million annually to the city school board if two tasks were accomplished (S.B. 781, 1998). One, the federal district court needed to enter a final judgment before March 5, 1999. This allowed the program to operate independently. Two, City of St. Louis voters needed to approve a $20 million sales or

property tax for the school district. Senate Bill 781 was viewed as having aided the settlement process (Smith, 2009, 1154).

In 1999, the settlement proposal was completed and entailed three main agreements (Blackwell, Sanders, Peper, Martin, 1999). First, the county districts, plaintiffs, SLPS, and State, were guaranteed to receive state aid for the per-pupil expenditure that started in the 1999-2000 school year and each year following. If state aid increased, the county districts were not going to receive funds less than the initial school year. The county districts were released from court supervision and liability for past discrimination and new students would be allowed to enroll into the transfer program until the 2008-2009 school year.

The second agreement involved the county districts and SLPS. It endured creating a non-profit corporation to continue the operation of the transfer program. This corporation was in charge of handling the reception, holding, and disbursement of all funds. VICC became a non-profit corporation funded through the same state funding mechanisms as the other Missouri school districts. This initiated the renaming of the entity from the Voluntary Interdistrict Coordinating Council (VICC) to the Voluntary Interdistrict Choice Corporation (VICC). All county districts agreed to give a two year notification if they left the transfer program. A county school district could have, however, left the program if it paid for the participation of transfer students out of its local revenue. A district was then able to determine its own level of acceptance for new voluntary transfer students.

The third agreement occurred among the county districts, NAACP, *Liddell* plaintiffs, and the United States. This agreement made a contract that bound the county districts to maintain the 15 percent racial composition ratio for the following three years. Further issues with this set up were handled under the discretion of the Missouri Commissioner of

Education. Most notably, the major change to the program's organizational structure was the establishment of four attendance areas in the city that became linked to suburban districts (see Figure One in Appendix).

Dismantling the System & Shifting Ideas on St. Louis Education: 2000-Present

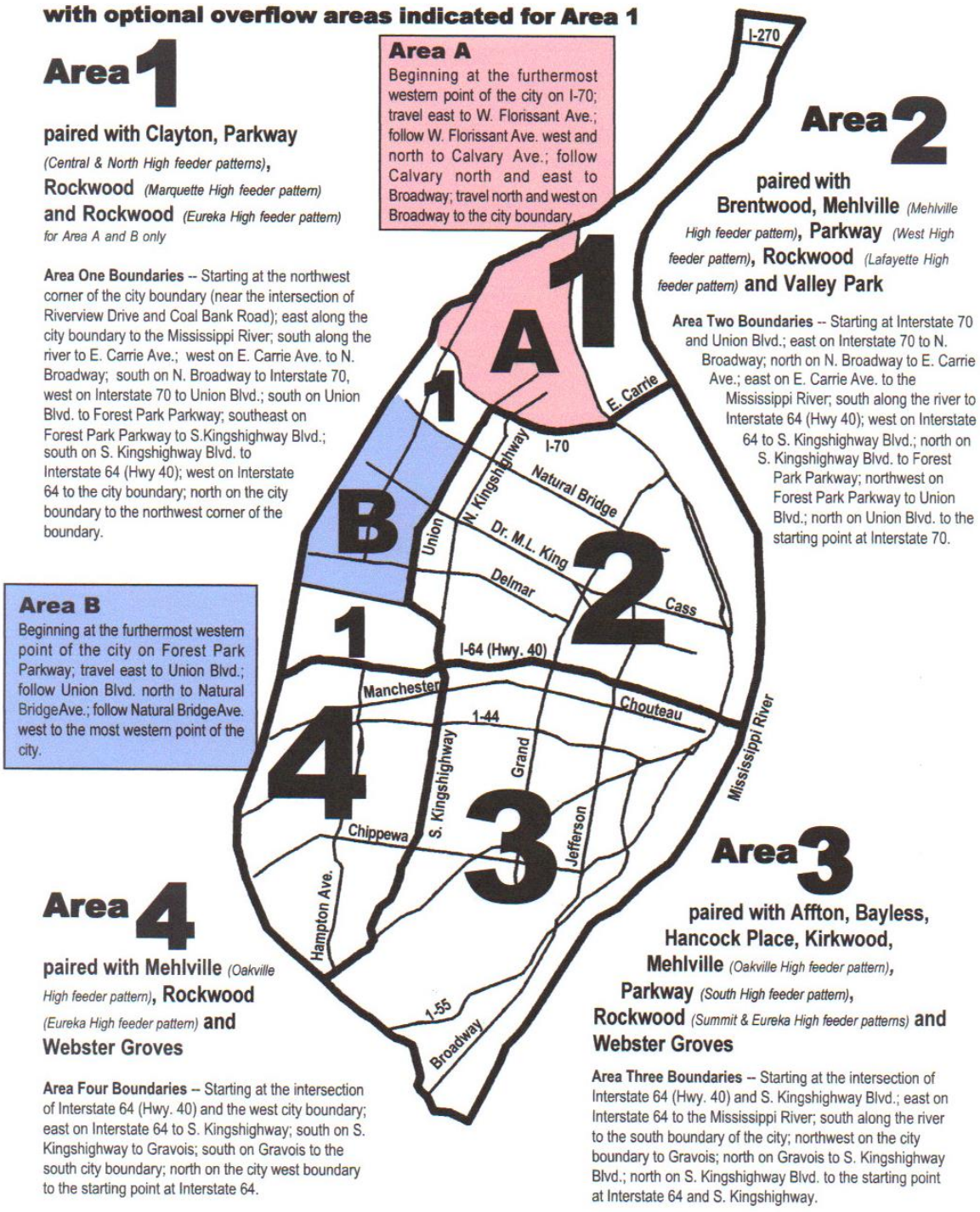
In the 1999-2000 school year, the case settled based on the grounds that costs of the program were too high and the support of the program dwindled among blacks (Settlement Agreement, 1999). The case was no longer under federal supervision and funding from the state stopped. A two-thirds cent sales tax increase was approved by St. Louis City voters to take on the funding the state no longer provided (VICC, 2008). The program was to stop taking new students after the 2008-2009 school year.

Since the settlement agreement, student enrollment in the program decreased. From the 1999-2000 school year to 2009-2010, total student transfer enrollment dropped from approximately 14,000 students to 6,000 (see Table 3-3). Three components of the settlement agreement greatly contributed to the decline in student participation. One, the release from court supervision and liability allowed school districts to choose whether to continue participating with the program. Currently, twelve of the original sixteen school districts remained in the program. As school districts left, most allowed students who participated in their last school year with the transfer program to remain in the district until they graduated. Two, districts were allowed to determine their own level of acceptance for students. As districts began to be selective about the types of students they enrolled from the program, the trend to take only elementary school students spread. It was easier and less costly to build a student's educational foundation when he or she was young than to repair when he or she

was older. Older students, particularly high school students coming from the city schools were often so far behind that they required additional attention in a different and separate capacity, which became costly.

Three, the county school districts also became more selective on the attendance areas from which they accepted students from the city. The majority (seven of twelve) of the current participating county districts accepted transfer students from only one of the four attendance areas (see Figure 3-1). Eight of the twelve currently accept students from the same attendance area (Attendance Area Three). This left some city families with a small number of choices for county school enrollment if they resided in an attendance area where there were few accepting school districts. During the past fourteen school years, VICC has recognized enrollment deadlines as school districts dropped their participation and became even more selective of the city transfer students accepted in their schools.

Figure 3-1: Attendance Areas of the Transfer Program[1]



Source: Voluntary Interdistrict Choice Corporation

[1] The map shows the attendance areas during the time of this study. However, there are currently three attendance areas instead of the six shown.

In June 2007, the VICC Board, comprised of participating district superintendents, agreed to a five year extension (VICC, 2008). This extension allowed the program to continue new student enrollment until the 2013-2014 school year. In October 2012, a second five year extension was granted by the VICC Board. This allowed new students to continue to enroll through at least the 2018-2019 school year.

Conclusion

From the 1980s to the present, the desegregation plan transformed from a federally mandated program to a volunteer program. Participation in the desegregation program originally began to increase as parents of city and county residential students noticed the opportunities available through participation in the program. Contrarily, two institutions found the program to be unsuccessful. One, St. Louis Public Schools found the program to be a "brain drain" on their student body, identifying it as the main cause for its drop in its student academic achievement scores (St. Louis Post Dispatch, 1988, 28). Two, the state of Missouri petitioned the court for release from paying for student participation in the program due to fulfilled affirmative action for allowing segregated schooling in the past.

Three factors have provided the impetus for the evolution of the desegregation plan into a volunteer arrangement. One, the increased interest and involvement of public and private coalitions in the early stages of the proceedings allowed multiple actors to enjoin the process to derive their own particular wants and needs. Two, the court system and legal environment over the past thirty years changed about handling desegregation cases in educational systems. Three, the initial intent of the desegregation plan had advanced from a

strictly racially based issue into a more complicated matter for attaining student's well-being and quality educational experiences.

Chapter Four

Scholarly Research

This chapter provides a critical analysis of six empirical works that focus on the impact particular school desegregation programs have on academic achievement over time. I use five guidelines to select these studies. One, academic achievement (achievement test scores) is the dependent variable. Two, the focus of the independent variable is either a direct measurement of a desegregation approach, or it is based on the premise that desegregation efforts have a causal effect on student achievement. Three, the research design must be longitudinal. Four, the unit of analysis is the student or individual student test scores. Five, the model has a multi-level structure that considers school level and district level characteristics. Table 4-1 provides information on how the following six studies fulfill the requirements for this chapter.

Various authors perform quantitative analyses on the impact of desegregation, but are not particularly germane for this chapter because they do not fit the above guidelines. They are too descriptive (Rossell or Hawley, 2002), too focused on other exogenous impacts (Wells and Crain, 1997; Henig, 2008), or are singular cross-sectional studies (Heaney and Uchitelle, 2004). For example, Rossell and Hawley (2002) focus on more of the national, statewide, and regional effectiveness of school desegregation plans, which does not allow for an elaborate assessment, nor provide a close look at academic achievement. Although Wells and Crain (1997) discuss one school desegregation plan (St. Louis, Missouri), their study incorporates discussion from administrators and policymakers that prevents having a direct focus on student achievement. Henig (2008) does focus on student achievement and school desegregation, but also incorporates other forms of school choice like charter schools.

Heaney and Uchitelle (2004) conduct two achievement test studies, one in 2000 and the other in 2004, to examine the differences in scores of blacks and whites in St. Louis, Missouri. However, these two individual assessments compare two different subsets of students at one point in time, not over time.

This chapter analyzes the design of each study, the execution of each study's data analysis, and each study's findings. Next, it discusses the legitimacy of the conclusions and implications drawn from the results. Last, the chapter specifies what separates this study from these six analyses.

Table 4-1: Table of Research Guidelines for this Chapter by Study

Study by Author	Dependent Variable	Independent Variable	Span of Longitudinal Analysis	Unit of Analysis	Multi-Level Structure
Lissitz	Stanford Achievement test scores, CTB/McGraw-Hill California Achievement test scores, Cognitive Ability test scores	Student Demography: Integrated, Non-Integrated, Magnet, and Suburban	Student Set #1: 1991 & 1993, Student Set #2: 1992 & 1994	Students of attending the City of St. Louis and St. Louis County school districts	Performance of students within schools and students within schools of particular districts
Mickelson	GPA, End of Course (EOC) scores, California Achievement Test (CAT) scores of language in 6th grade, and track placement	race, gender, and survey data responses on educational and occupational attainment	Compares prior achievement of 1996-1997 high school seniors to their current achievement	CMS high school seniors	students within tracks within high schools
Angrist and Lang	Massachusetts Comprehensive Assessment System (MCAS) test scores and Iowa Test of Basic Skills (ITBS) scores	The number of METCO students in a district	1994-2000 school years	students at various grade levels	students within METCO schools within school districts, and students within classes within a METCO school
Hanushek, Rivkin, & Kain (2002)	Texas Assessment of Academic Skills (TAAS) test scores	Racial composition of schools and districts	1992-1996 school years	third through eighth grade students	students within schools within school districts
Armor & Duck	End of Grade test scores, Palmetto Achievement Challenge Test (PACT) scores	Racial composition of schools and districts	North Carolina: 1991-2005; South Carolina: 2001-2006	elementary and middle school students	students within schools within school districts
Hanushek, Rivkin, & Kain (2009)	Texas Assessment of Academic Skills (TAAS) test scores	Racial composition of schools and districts	1992-1996 school years	third through eighth grade students	students within schools within school districts

The Impact School Desegregation Has on Achievement

Study One: Robert W. Lissitz on St. Louis

In 1994, Robert W. Lissitz publishes the results of a four year study on the school desegregation efforts and student achievement of black St. Louis public school students. He collects data on students in the fourth, sixth, eighth, and tenth grades, approximately 11,000 students each year. These four groups of students are classified as integrated, nonintegrated, magnet, or suburban. He identifies integrated students as students who attend an integrated school in the City of St. Louis. Nonintegrated students attend a school that is not integrated in the City of St. Louis. Magnet students attend one of the magnet schools in the City of St. Louis. Suburban students attend school in one of the sixteen suburban school districts that participated in the transfer program during his study.

The dependent variable consists of test scores from the mathematical and reading sections of the Stanford Achievement Test and a writing activity. Lissitz also uses data on prior student performance on the CTB/McGraw-Hill California Achievement Test and the Cognitive Abilities Test in order to adjust for performance on the achievement tests and to adjust for initial differences that have nothing to do with a student's participation or exposure to the desegregation program. The independent variables cover student demography and student opinions on educational experiences. For example, he takes an attitude survey of the students to collect demographic information on each student's personal beliefs about school personnel, peers, work habit, educational effort, and support at home. Lissitiz considers the correlation of achievement, attitude, and duration in the program to measure the relationship between student performance and duration. He replicates this data collection process from 1991 to 1994, producing and accumulating results each time. Lissitz performs a series of

analysis of covariance tests to assess this data. Then, he takes the results of two sets of cross-sectional analysis and creates a longitudinal analysis from his findings.

In the first year (1991), Lissitz finds several promising results. Prior achievement test data indicate that magnet school students are the highest performers of all the classified student groups. While certain prior achievement tests provide more explanation for student achievement before the study time frame, all tests are statistically significant regardless of sample size. In this respect, prior achievement may not necessarily have a huge impact. However, magnet students who are always high performers remain high performers on the Stanford Achievement Test. Some nonintegrated and integrated students, when adjusting for prior achievement, do meet the achievement level of magnet students. Further investigation is crucial to identify if and how this is an exception. In looking at tenth grade students, most student achievement plateaus, however, the suburban (transfer) students show high progress in comparison to the other three student classifications.

The second year (1992) of data collection involves a second group of students. Since the data collection is every other year, there are two sets of longitudinal data, one for students in years 1991 and 1993 and another for students in years 1992 and 1994. Based on the prior achievement of the second group, both suburban and magnet students tend to have higher test scores in comparison to nonintegrated and integrated students. However, magnet students still have higher average test scores than the transfer students. Transfer student scores on the Stanford Achievement Test are similar to the nonintegrated and integrated students in fourth, sixth, and eighth grade with all three lower than magnet students. However, as before, tenth grade transfer student performance increases in tenth grade to magnet student level when adjusting for prior achievement. Lissitz does not find a verifiable relationship between

student achievement and duration. This is probably because there is not enough consistent evidence since it is the first assessment of the second set of students. At this point Lissitz there are two separate cross-sectional studies on two separate sets of students.

In the third year (1993), Lissitz is able to do his first longitudinal assessment. The 1991 fourth graders are sixth graders, the 1991 sixth graders are eighth graders, and the 1991 eighth graders are tenth graders. There is a new group of fourth graders. Lissitz uses improvement points to show the change in student growth on the Stanford Achievement Test between the two years. For example, from sixth to eighth grades, magnet students receive 33 improvement points, transfers receive 27 improvement points, integrated receive 22 improvement points, and nonintegrated receive 19 improvement points. Magnet students are the highest performing student group. Transfer students show growth over the two years while magnet students' scores plateau and sometimes lower; however, magnet students remain the highest performing student group. Lissitz's overall conclusion confirms his assertion in the first year. As a transfer student moves into a higher grade, one can expect his or her achievement score to increase, whereas a magnet student's score will remain high but steady. Therefore, a transfer student can possibly attain a magnet student's achievement score by the end of their education.

The last year (1994) is the second year of data collection for the second group. Like the previous three years, magnet students outperform the other three groups of students. Based on the achievement test scores, transfer, integrated, and nonintegrated students perform the same in fourth, sixth, and eighth grades. The nonintegrated students show the highest mean change in reading tests from fourth to sixth grade, but show the lowest improvement in mathematics. Transfer students show the least improvement in reading and

math from sixth to eighth grade. Overall, writing scores decrease for magnets. From grades eight to ten, transfer students significantly improve in reading and math (higher than the integrated and nonintegrated), but not significantly different from the magnets. This may be due to the low level of achievement transfers have during sixth to eighth grade and the decline in magnet writing scores. It may also identify the presence of weaknesses in higher grade level education offered in the City of St. Louis.

Overall, Lissitz finds no difference between doing a single cross-sectional analysis for each year versus doing the longitudinal analysis for the two sets of student groups. His main interest is to see if the 1994 fourth graders outperform the 1991 fourth graders, and the same applies for the other grade levels. For transfer students, and total students combined, this did not occur. Students did much worse overtime, especially in the writing assessment. The mathematics and reading section performance on the Stanford Achievement Test remains the same across grades for all four years. Based on interviews with personnel, Lissitz finds the same achievement performance occurs with white students. Therefore, this becomes more of a reflection of education within the metro area and not particular to black integration.

Lissitz's analysis finds three trends with the students' exposure to the student transfer program: high achievement of high school transfer students, parallels of the achievement gap in suburban and city schools, and high achievement of city transfer students in comparison to city non-transfer students. Even though the magnet school students are the highest performers in lower grade levels, over the years their achievement scores plateau whereas the high school transfer students continually increase their scores. In his concluding remarks, Lissitz claims African American students did not fare as well as individuals hoped upon

implementation of the desegregation program since test scores are not improving at each grade level overtime.

There are strengths and weaknesses to Lissitz's study. Most flaws are evident in the duration of the study and student response rates. One, this study compares two sets of students for two years: the first set in years 1991 and 1993, and the second set in the years 1992 and 1994. While two years can show a trend, it is not a substantial enough time frame. For the four years to show a better trend, all the grade levels during all four years are preferred. This provides two additional years of data for each student, making this a study that spans four consecutive years. Two, student response rates lower each year, which means there are missing data for students. Three, while missing data can be attributed to some non-crucial forms of error, the increase in missing data over the span of this study is for comparing years. If a student is too low of a performer, he or she does not have to take the assessment. Lissitz also excludes special education students, who are disproportionately African American. Therefore, there is a group of students who potentially have different results for the integrated, nonintegrated, and suburban students who are not included in this study.

Study Two: Mickelson on Charlotte-Mecklenburg

In 2001, Roslyn A. Mickelson writes *Subverting Swann: First and Second Generation Segregation in Charlotte-Mecklenburg Schools* where she examines the impact of ability tracking and desegregation on the academic outcomes of black students in the Charlotte-Mecklenburg Schools (CMS). In the beginning of her study she differentiates first generation segregation as racial composition of schools within a single school district and

second generation segregation as an imbalance of racial allocation of educational opportunities within schools (Mickelson, 2001, 216).

Mickelson addresses five concerns: the existence of first generation segregation in CMS, the effects of that segregation on educational outcomes, the existence of second generation segregation in CMS, the effects of its existence on educational outcomes, and the extent to which segregated education offers fewer opportunities to learn. She randomly samples CMS high school seniors from the 1996-1997 school year. She stratifies these students into tracks based on their placement in English class. She draws 1,883 students from every high school in the system. She excludes students enrolled in special education classes, special programs, or special schools. She has a fairly representative sample of students based on racial composition (Mickelson, 2001, 225). However, some aspects of her study are highly reliant upon survey data conducted in 1997. This survey includes attitudes on educational and occupational attainment, race, age, gender, and mother and father educational and occupational attainment.

Her dependent variables are four academic performance characteristics: GPA, End of Course (EOC) scores, California Achievement Test (CAT) scores of language in 6th grade, and track placement. The main independent variables include race, gender, and survey data responses on educational and occupational attainment. She also uses other factors like cultural capital, student effort in school, track placement, and prior achievement as control variables. Her longitudinal measurement includes exposure to first and second generation segregation in the form of track placement.

Mickelson uses ordinary least squares (OLS) regression in a multi-level model where students are nested within schools. This allows studying between school and within school

generational segregation effects. She uses the CAT scores and compares them to the twelfth grade EOC scores and track placement in order to derive an effect for growth in achievement. She hypothesizes that blacks and whites of similar academic performance are placed in different classes where whites experience the more privileged classes and blacks are placed in lower tracks (Mickelson, 2001, 217). She further asserts blacks in these lower track classes receive less rigorous instruction, lower quality resources, and less highly qualified teachers (Mickelson, 2001, 217). Therefore, the efforts to desegregate and better educational outcomes are "subverted" (Mickelson, 2001, 217).

Overall Mickelson's results show that the top academic classes are overwhelmingly white across subjects and the low performing classes are disproportionately black across subjects. In reference to the five areas of assessment, the results are strong. One, she finds trends in first generation segregation based on historical background. CMS almost reaches unitary status in the 1980s, but isolated schooling increases during the 1990s regardless of the effort to lessen residential segregation. She finds attending racially isolated schools has a negative effect on achievement and track placement (Mickelson, 2001, 229). Her study finds that the more time blacks and whites spend in racially isolated settings, the lower their CAT scores, EOC scores, and track placement. In addition, prior achievement on the CAT is critical for predicting high school GPA, EOC scores, and track placement. In other words, the greater the proportion a high school senior receives his or her elementary education in a segregated setting, the lower are that student's grades, EOC test scores, and high school track in comparison to similar students who experience desegregated elementary education (Mickelson, 2001, 231). Black students are rarely found in the top tracks, regardless of the racial composition of a high school and they are disproportionately present in lower tracks

(Mickelson, 2001, 234). When looking within schools that are considered to be racially balanced, placing black students in lower learning tracks resegregates them. Specialized higher learning tracks are predominantly white. Last, racially isolated schools offer fewer teacher resources, have higher counts of homeless youth, more free and reduced lunch students, and students with English as a second language. These schools also have inadequate materials, resources, and teacher experience. These six factors are tied to tracks. This confirms for Mickelson why black students from racially segregated elementary schools perform less well than others.

One of the shortcomings in her study is the exclusion of special education students. The proportion of black students in the non-special programs is 42 percent of all blacks in the school system (Mickelson, 2001, 226). There are more blacks in specialized programs than there are in the system. This is a misrepresentation of the proportion of black achievement, and therefore, an underestimation of the first and second generation segregation of black students. Second, her analysis is primarily descriptive. She focuses on the results racial opposition and educational opportunities provide more than the effects these variables have on achievement. Last, she references this as a longitudinal study because she considers sixth grade achievement a viable predictor for twelfth grade achievement. The study is more valuable if there are multiple years to address the trends and multiple years can confirm the validity of using sixth grade achievement. This large gap in years does not take into account the route a student takes to grow over time. Since there is not more than one group of students, her findings are specific to that particular group. He study lacks generalizability until another group is studied in the same manner.

Study Three: Angrist and Lang on Boston

The Metropolitan Council for Education Opportunity (METCO) program is a desegregation program that transfers black students from Boston schools to the more affluent schools in adjacent suburban areas. In 2004, Joshua D. Angrist and Kevin Lang write *Does Integration Generate Peer Effects? Evidence from Boston's METCO Program* which, unlike most studies, focuses on the impact integration has on the academic achievement of white students who attend schools to which black students are bused (1613). They question whether integration generates peer effects. Angrist and Lang develop two hypotheses. One, the METCO program improves test scores of METCO students. Two, the METCO students do not have an impact on overall student achievement in METCO schools, but can have an impact in non-METCO schools.

Their study assesses the relationship between student achievement and school environment, where student achievement is the dependent variable and school environment is the independent variable. Angrist and Lang use aggregate level data from the Massachusetts Comprehensive Assessment System (MCAS) testing program. The Iowa Test of Basic Skills (ITBS) scores of elementary and middle school students in Brookline Public Schools (one of the largest and original METCO receiving districts) assesses the program across different racial groups. The ITBS scores represent student achievement. The number of METCO students in attendance represents the school environment. Angrist and Lang control for grade level and class size.

They perform a school district level analysis and a micro-data level analysis to see if METCO school districts, which are higher performing districts, experience a drop in overall average test scores with the presence of METCO students. At the school district level

analysis, Angrist and Lang look at average test scores of METCO receiving districts in comparison to non-METCO districts nearby. They create a dummy variable for location. It assigns each student a placement status if the school district he or she attends is inside or outside of Boston's inner beltway and outer beltway. Angrist and Lang perform a regression analysis using fourth grade mathematics and English MCAS scores from the 2002 tests.

The micro-data analysis focuses on one school district, Brookline Public Schools. This district is more affluent but also more diverse (ten percent black, 17 percent Asian, and four percent Hispanic) (Angrist and Lang, 2004, 1618). ITBS scores for third, fifth, and seventh graders from 1994 to 2000 school years comprise the dependent variable. Students with severe language or special needs are not tested. However, METCO students with severe language or special needs are tested because there are only a few of them (Angrist and Lang, 2004, 1619).

Schools with METCO students score higher than those without. It is important to note schools with METCO students are the more affluent schools and normally have higher test scores (Angrist and Lang, 2004, 1615). This generates the initial hypothesis that whites are unaffected by METCO students. Unfortunately, there is a discrepancy with measuring for racial composition. There are so few blacks and Hispanics in the receiving districts that the differentiation between whites and non-whites is not determined (Angrist and Lang, 2004, 1617). The low number of METCO students can cause a substantial effect difficult to discover. This potentially leads to another conclusion that there is an ideal racial composition that is academically beneficial for both bused students and non-bused students. Angrist and Lang fail to address this.

The results show METCO students have significantly lower scores than Brookline students, scoring on average 22 points lower. However, black METCO students have similar scores to black Brookline students, and the same applies to non-black METCO students and Brookline Hispanics and Asians. Also, METCO students benefit from the program over time. They show more academic improvement between the third and seventh grade than Brookline students (1620). The proportion of METCO students in Brookline is enough to affect the scores of Brookline students, which makes Brookline an appropriate comparison for METCO effectiveness (1621). This confirms that the presence of METCO students does not have a negative effect in average performance. For example, a 10 percent increase in METCO student enrollment in Brookline lowers scores by 2.5 percent on average. Even with the inclusion of other factors such as grade, year, and school as main effects, the METCO students have no effect on non-METCO students (Angrist and Lang, 2004, 1625). Angrist and Lang, however, did not rule out that smaller effects exist, but claim that those effects are short-lived (Angrist and Lang, 2004, 1625). There is no real adverse effect on increasing the fraction minority on most students because their effects fade as students begin to progress from one grade to the next over time (Angrist and Lang, 2004, 1632).

The 2.5 percent change in white test scores is not seen as a major result, but this can mean something in another district or program. The drop in white student scores essentially shows the effect in question. Angrist and Lang can study another district in order to solidify their findings. METCO students at Brookline may be lower achievers than Brookline students and higher achievers in another district. In addition, other variables like classroom instruction and behavioral reports are viable to study one single district. For example, if classroom instruction targets low achievers, or if low achievers are more disruptive causing

more teacher attention, this can account for the drop in low scores. Without this information, METCO student presence cannot fully explain the drop in scores. This leaves the study very inconclusive.

Study Four: Hanushek, Kain, and Rivkin on Texas

In *New Evidence about Brown v. Board of Education: The Complex Effects of School Racial Composition on Achievement* (2004), Eric A. Haunushek, John F. Kain, and Steven G. Rivkin look at the relationship between racial composition and student achievement in the state of Texas. They use student achievement test scores in mathematics as the dependent variable and school racial composition as the independent variable. Hanushek, Kain, and Rivkin control for various family, school, and teacher characteristics, and the pattern of racial composition within schools. They hypothesize the percentage of black peers affects black student achievement more than other ethnic groups, and that the effect worsens as black students progress through junior high.

Their data stems from the University of Texas at Dallas (UTD) Texas Schools Project. It includes information for over 200,000 students in more than 3,000 Texas public schools between the 1992 and 1996 school years. These data track the performances of black, white, and Hispanic students on the Texas Assessment of Academic Skills (TAAS) test. Their dataset also includes school data for individual teachers, covering factors like grade and subject taught, class size, and student turnover. The data does not include special education students and students with language barriers.

Hanushek, Rivkin, and Kain set up a multi-level model to assess Texas students. First, they assess student and school-by-grade fixed effects in achievement growth. Next, they add controls for teacher, school, and student characteristics. They incorporate district-

by-year fixed effects and add a second level to their model. After the addition of the district level data, they examine the average peer ability on black student achievement for all three student races.

They find achievement is lower in schools with higher proportions of black and Hispanic students. Achievement growth is based on how the racial composition of a school changes. This change is due to the historical racial composition as an individual school and as a school among other schools in its district. More specifically, black achievement is significantly reduced in schools with a higher percentage of black students. Peer achievement differences do not drive the relationship between achievement and proportion black for white and Hispanic students. However, implementing the controls for teacher characteristics, specifically class size and student turnover, results in a reduction of the estimated effect by one-third (Hanushek et. al., 2004, 24).

Hanushek, Kain, and Rivkin did a skilled job separating school and peer group effects to determine the impact racial composition have on student achievement. However, there is no adequate incorporation or measure for the impact of integration in their model per the initial discussion. While their model has several variables that address race, achievement differences by race, and peer effects, there is no true variable to measure or represent the integration efforts. They consider historical patterns of each school's racial composition, but these historical patterns do not specifically represent past integration presence. They can separate students by categories, like in the Lissitz study, to determine if the past student achievement and racial composition in integrated schools is similar or different from the ones present at the time of their study. This provides more insight to their integration discussion.

Study Five: Armor and Duck on North Carolina and South Carolina

In 2007, David J. Armor and Stephanie Duck write *The Effect of Black Peers on Black Test Scores* where they replicate the Hanushek, Kain, and Rivkin (HKR) model from 2004 to see if it is generalizable beyond the state of Texas. They use North Carolina and South Carolina test scores to examine whether school or classroom racial composition improve achievement. Student test scores are the dependent variable and the change in percent black is the independent variable. Armor and Duck control for grade level, free and reduced lunch eligibility, student mobility, and attendance zones. They hypothesize that black peer effects have a less substantial effect on test scores than the KHR model produces.

Armor and Duck use three sets of data. For North Carolina, Armor and Duck use the "End of Grade" test scores from the Duke University Education Research Data Center. This set has student level data that include reading and math test scores, grade level, race, free and reduced lunch status, and parent education. It also includes eight different measures of school resources and teacher characteristics. For South Carolina, they use the Palmetto Achievement Challenge Test (PACT), a comprehensive statewide test program provided by the South Carolina Department of Education. These data include student level data similar to the North Carolina data, except it does not have parent education measures. The last set includes longitudinal testing data from the Early Childhood Longitudinal Study (ECLS) project. These data provide information about the percent of black students for each level at each school.

There are identifiers for district, school, grade, and student to help indicate if a student changes schools based on normal mobility or transition from elementary to middle school. It also identifies grade repetition. The North Carolina data looks at four cohorts of

students with approximately 500,000 total students between 1997 and 2005 (Armor and Duck, 2007, 10). The South Carolina data examines five cohorts of students that consist of approximately 230,000 total students between 2001 and 2006 (Armor and Duck, 2007, 11). The ECLS data consists of one cohort of students alongside interview responses that contains background information. The test score data starts in the 1998-1999 school year and records later in the spring during first, third, and fifth grades (Armor and Duck, 2007, 12).

Armor and Duck use longitudinal and stacked data where one observation is a single test score from one grade in one year and pairs it with its lagged score from the previous year. For example, a single student who tests every year generates five or six observations. Each observation has student characteristics and school characteristics for the corresponding grade, school and year. For the replication process, they follow the various HKR fixed effects indicators involving year by grade and school by grade with the North Carolina and South Carolina data. They do not measure the ECLS data with fixed effects because there is only one cohort of students.

Their results do not match the findings of the HKR study in Texas. In North Carolina, Armor and Duck find a moderately negative relationship of black peers and black achievement regardless of the year. For example, blacks in 75 percent black schools score 1.5 points lower than blacks in 25 percent black schools. Also, black students in predominantly black schools are more socioeconomically disadvantaged than black students in desegregated schools. A student's test score from the previous year is a good predictor of the student's current test scores. School and teacher characteristics lessen the black peer effect. Black reading scores closely follow the results for black math scores. In South Carolina and with the ECLS data, the black math and reading scores correspond with North

Carolina for the black peer effect, regardless of year. Only in the measurements for teacher characteristics did the black peer effects have a greater coefficient. They did not continue further investigation here.

Armor and Duck did a competent job replicating the HKR model. The most similar aspect of this study is the correlation of fixed effects. National samples like the ECLS data have great potential for generalization and the authors do not use this to their advantage. The results for black peer effects are consistent despite the differences among the data. The authors do claim that they fail to replicate the Texas results and blame it on the misusage of school composition within the HKR model. Because this is a replication study, the authors do not fix this misuse to gain accuracy in their version. Armor and Duck find family background is what keeps neighborhood blacks slightly lower achievers than desegregated blacks. This claim needs additional study to see what elements of family background are most influential. Academic benefits do not appear to be due to racial composition or desegregation policies. However, there is no test measure that represents either of the two concepts adequately.

Study Six: Hanushek, Kain, and Rivkin on Texas

Hanushek, Kain, and Rivkin write *New Evidence about* Brown *v.* Board of Education*: The Complex Effects of School Composition on Achievement* (2009) to expand in their previous study performed on Texas student data. Their Texas study shows a higher percentage of black students reduce achievement on blacks, but has a much smaller and insignificant effect on whites (Hanushek et al., 2009, 349). The authors explain it is difficult to detect racial composition on student achievement because it is based on government and family decisions (Hanushek et. al., 2009, 353). Since participation and the choice to pursue a

racially mixed environment are voluntary, it is difficult to impede efforts to isolate exogenous variables in racial composition that are useful for identifying causal effects on student outcomes. Furthermore, they explain that variables like class size, teacher characteristics, and peer turnover do not adequately control for confounding influences because, as a combination, these factors determine the allocation among schools by race (Hanushek et al., 2009, 360).

In this study they test to see if school racial composition affects the racial black-white achievement gap by investigating the racial composition of test scores and the test score gap. The dependent variable is student test scores. The independent variable is school racial composition. They control for several student, family, community, and school characteristics such as grade, student mobility, public services received, community type, and school facilities. Hanushek, Rivkin, and Kain posit that racial composition has an effect on test scores and the racial test score gap.

Their methodology is very sophisticated. The authors use stacked panel data from the Texas Schools Project. They use panel data methods to control for factors that are otherwise taken care of by random assignment like the race of a student. They consider academic placement in school by year fixed effects and school by grade fixed effects. Multiple year and grade data allow the inclusion of tests on school by year and school by grade fixed effects at the same time. Therefore, the number of deviations from a school's average racial composition for each grade and year determines the racial composition effect.

There are two cohorts of students: one using fourth through sixth grades, and another using fourth through seventh grades. There are over 200,000 students and over 3,000 schools in this dataset (Hanushek et al., 2009, 363). The earliest cohort attends fifth grade in 1994

and the youngest in 1996. The achievement measures only use students who take all tests, but all student information develops the school characteristics. The Texas Assessment of Academic Skills (TAAS) for mathematics is used in this study. The study excludes all students who have language deficiencies, are disabled, and are in special education. Each student is assigned the average class size and distribution of teacher experience for teachers in regular classrooms for their specific grade, school, and year.

The authors find a higher proportion of black students' results in a lower achievement for blacks and whites; however this effect is much larger for black students than white students (Hanushek et. al., 2009, 366). School by grade fixed effects increases the magnitude of the influence of proportion of black enrollment on achievement. School by year or attendance zone by year reduces the effect by roughly 20 percent (Hanushek et. al., 2009, 367). Including measures for teacher and school characteristics has no effect on the estimates. The lagged peer effect variable shows that the proportion of blacks that score amongst the lower average of black achievement relates to student preparation. Therefore, academic preparation accounts for roughly 15 percent of the proportion black effect for blacks (Hanushek et. al., 2009, 369). In conclusion, they find proper proportion can close the achievement gap by ten percent just by reducing the percentage of black classmates for black students without even changing white achievement for the grade levels between first and seventh grade (Hanushek et. al., 2009, 375).

It is problematic to drop students with language deficiencies, disabled, or involved in special education programs because minorities are over populated in these groups. Another shortcoming is that the Hispanic population is not included in this study. The results of the study did not include Hispanics so the black proportion for school composition is not the

minority proportion of the school. Including Hispanic students ensures accuracy of peer effects. However, the authors did specifically focus on the black-white achievement gap. The authors explain that the Hispanic enrollment has a smaller effect than the black proportion, so they find focusing on the proportion black rather than proportion minority is appropriate for assessing the black-white achievement gap.

Significance of Study

The previous six studies provide great insight on the complicated process and rigor needed for measuring the achievement gap in an integrated setting. They use different ways to determine how to test academic achievement and how to measure the presence or exposure to desegregated schooling. This dissertation measures academic achievement based on achievement test scores and measures the integration efforts by classifying types of student participation/exposure to desegregation in St. Louis. The following discussion encompasses the significance of this study by comparing it to the data format, research design, and methodology of the previous studies. A comprehensive description of the research design follows in the next chapter.

Data Format

There are three main elements in the data that distinguishes it from the previous studies. One, the data categorizes students based on their participation/exposure to the St. Louis program in a way that allows tracking the duration of time a student spends in an integrated setting. Two, there are student level characteristics that follow the same students for five years on the same achievement test. Three, socioeconomic variables at the district level and racial composition variables at the student, school, and district levels are

incorporated. This allows the influences of a student's achievement to be seen across different levels based on several factors simultaneously.

Contrary to Lissitz's study, the data includes white students and focuses on the impact of an integrated setting on black students. However, there is data that measures peer effects that reciprocate to blacks and whites since the data includes information for black and white students. The grade level range, based on the tested grade levels, goes from the third grade to eighth grade and tenth and eleventh grade. It includes student racial composition at the school building and school district levels like in the Angrist and Lang and Hanushek, Rivkin, and Kain studies. The study tests for prior achievement on the same test across levels of elementary, middle, and high school education. None of the previous studies measure achievement in this manner. Staggered, lagged, random, and fixed effects overtime are visible from third through eleventh grades, similar to the Hanushek, Rivkin, and Kain studies.

The data only covers students who attend schools in St. Louis County and the City of St. Louis. It does not include Asians and Hispanics like in the Mickelson and Hanushek, Kain, and Rivkin studies because there are too few of those ethnic groups in St. Louis to measure without those students becoming identifiable. The data include students with learning and language barriers if they took the test. The only instance the study does not include these students is when the school district does not allow a low learning student to take a test and does not report their information. The student and family backgrounds come from the state's database and are not compiled from a separate survey like in the Lissitz and Mickelson studies. This is beneficial because there is a consistency in the data and data recording because it all comes from one source. Separate survey data, like in some of the

previous studies, requires more inferential, as opposed to factual, observations about student and family background.

Chapter Five

The Research Design

This study examines the Missouri Achievement Program (MAP) test scale scores of individual students who attend schools in the St. Louis County and St. Louis City school districts. The MAP test is an annual academic assessment of student performance implemented statewide. This study assesses two content areas: communication arts and mathematics. The students fall into four categories based on their participation (or nonparticipation) in the transfer program. Those four categories are city transfer students, city residential students, suburban transfer students, and suburban residential students. If broken down by race students fall into six categories. The study uses five of these student categories. Table 5-1 enumerates the numbers of students in each category by year. Race is a key factor in determining categories of participation because only black students from St. Louis City can transfer into the participating districts in St. Louis County. The study's emphasis is on student performance in relation to the five student types.

Table 5-1: Independent Variable: Participation (Student Type) by Year[2]

	School Years					
Participation	**2006**	**2007**	**2008**	**2009**	**2010**	Total
Black City	23,387	21,902	17,550	13,893	13,321	90,053
Black County	54,110	54,362	49,611	41,006	40,967	240,056
Black Transfer	102	625	5,284	4,963	4,513	15,487
White City	3,135	2,926	2,108	1,842	1,813	11,824
White County	79,947	77,510	76,997	65,361	64,030	36,384
Total	160,681	157,325	151,550	127,065	124,644	721,265

[2] The low number of black transfer students in the 2006 and 2007 school years is due to poor data reporting.

The model conducts a three level longitudinal analysis that spans five school years (2005-2006, 2006-2007, 2007-2008, 2008-2009, and 2009-2010). School years are referred to by using the ending year. For example, 2006 refers to the 2005-2006 school year. The key independent variable is student participation in the voluntary transfer program, based on the five race-based student categories. The dependent variables are the student MAP test scale scores in the content areas of mathematics and communication arts. The control variables are based on the socioeconomic status of a student's family and two forms of educational atmosphere that may affect student achievement. They include a student's Individualized Education Program (IEP) status, Limited English Proficient (LEP) status, and Free and Reduced Lunch (FRL) status. Table 5-2 shows the number of students with each status by year.

Table 5-2: Control Variables by Year

Variable	2006	2007	2008	2009	2010	Total
IEP	24,542	22,317	21,223	18,568	17,438	104,088
No IEP	136,139	135,008	130,327	108,497	107,206	617,177
LEP	1,765	1,689	2,018	1,480	1,353	8,305
No LEP	158,916	155,636	149,532	125,585	123,291	712,960
FRL	68,706	66,650	62,907	57,672	59,107	315,042
No FRL	91,975	90,675	88,643	69,393	65,541	406,227

At the aggregate levels, there are a total of three control variables at the school building and school district levels. There is one school building level control variable: the average student per teacher ratio for each school building. The two school district level control variables are the percent of transfer students in a school district and a school district's annual assessed tax valuation.

The primary research question is do black transfer students from the City of St. Louis perform better over time in an integrated setting in St. Louis County compared to the other four student types, especially black city students? The main hypothesis states that a black city student's participation in the voluntary transfer program has a positive influence on his or her performance on the MAP tests, while controlling for the variables introduced. All student information is recorded via each student's Missouri Assessment Program Test and all building and district level information comes from the Missouri Department of Elementary and Secondary Education (DESE). This chapter describes each variable, discusses how each variable is used in the model, and explains the significance of each variable in the study.

Dependent Variable: Student Achievement (MAP Test Scores)

The student achievement variable represents the individual communication arts and mathematics MAP test scores of all students enroll in school districts of St. Louis County and St. Louis City. The MAP tests are annual exams "used to identify the knowledge, skills, and competencies that Missouri students should acquire by the time they complete high school and to evaluate student progress toward those academic standards" (DESE, 1998). Students take the MAP test in the third through eighth grade, and the tenth and eleventh grade. The MAP test has two types of scores used to identify a student's level of academic achievement: the MAP scale score (interval value ranging from 450 to 910) and achievement level (ordinal

value ranging from 1 (Below Basic) to 4 (Advanced)). Based on the grade level of a student and the subject being tested, a student's score and achievement level is determined. Table 5-3 shows the MAP test scores and achievement levels by grade for communication arts and Table 5-4 shows the MAP test scores and achievement levels by grades for mathematics. This measurement depicts a student's knowledge and skills as below basic, basic, proficient, or advanced, as defined by the state, for the grade level he or she is in at the time the test is taken. The MAP scale scores are used as the dependent variable instead of the MAP Achievement Level Scores because the interval data provides a better analysis of the relationship than the ordinal data. Periodically, the MAP achievement level scores are used to discuss substantive findings.

Table 5-3: MAP Test Scale Scores based on Content Levels by Grade Level

MAP Test Score Scale by Grade Level: Communication Arts

	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
Below Basic	455-591	470-611	485-624	505-630	515-633	530-638	545-678
Basic	592-647	612-661	625-674	631-675	634-679	639-695	679-724
Proficient	648-672	662-690	675-701	676-703	680-711	696-722	725-752
Advanced	673-790	691-820	702-840	704-855	712-865	723-865	753-885

Source: Missouri Assessment Program Information was provided by the Missouri Department of Elementary and Secondary Education

Table 5-4: MAP Test Scale Scores based on Content Levels by Grade Level

MAP Test Scale Score by Grade Level: Mathematics

	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
Below Basic	450-567	465-595	480-604	495-627	210-639	525-669	555-694
Basic	568-627	596-650	605-667	628-680	640-684	670-709	695-737
Proficient	628-666	651-687	668-705	681-720	685-723	710-740	738-784
Advanced	667-780	688-805	706-830	721-845	724-860	741-885	785-910

Source: Missouri Assessment Program Information was provided by the Missouri Department of Elementary and Secondary Education

Student achievement is assessed by the subject of MAP test: either communication arts or mathematics. They are tested separately due to the differences in the grading scales. There are eight separate longitudinal analyses for the five years of students' MAP tests. There are two five year analyses, which include MAP test scores for all third through eighth grade students. Two three year analyses cover MAP test scores for all third through tenth or eleventh grade students. Two five year analyses assess scores for students in the third grade in 2006. Two five year analysis assess scores for students in the fourth grade in 2006. Student performance over time is analyzed on students who take the MAP test at least once between the 2006 and 2010 school years. The first four analyses examine student performance overall. The second four analyses are time interacted models and assess the effect of program participation overtime. Overall, there are 358,841 communication arts test scores and 362,440 mathematics test scores. For additional details, consult Diagram One and Diagram Two in the appendix.

Independent Variable: Participation in the Transfer Program

Three factors determine a student's participation in the transfer program: a student's race, residential location, and school location. The data includes two races: black and white. Other racial backgrounds are too small in magnitude and make a student easily identifiable in the data. For privacy purposes, other racial backgrounds are omitted. A student's residential location is identified by whether he or she resides in St. Louis County or the City of St. Louis. A student's school location is identified by if the student attended a school in the city or county.

Six types of race-based student participation develop from these three factors: white county students, white city students, white transfer students, black county students, black city students, and black transfer students. White county students are white students who reside in the county and attend school in the county. White city students are white students who reside in the city and attend school in the city. White transfer students are white students who reside in the county and attend magnet schools in the city. There are too few white transfer students and they are removed from the dataset for privacy purposes. Black county students are black students who reside in the county and attend school in the county. Black city students are black students who reside in the city and attend school in the city. Black transfer students are black students who reside in the city and attend school in the county. Based on the guidelines of the transfer program, transfer opportunities are only availed to white county students for city magnet schools and black city students for participating county schools. There is not a category that involves black county students or white city students transferring.

Student participation is a dummy variable in the models. If a student fits the description of a student type, he or she is assigned the value one. If a student does not fit the description of a student type, he or she is assigned the value zero. No one student holds the property of two student types at one time in the same school year. However, there is a possibility that some students are more than one of the student types over the course of the five school years due to student mobility, which the models do not address. In addition, the data does not denote those students who are not enrolled in the program, but are waitlisted. Therefore, the models do not predict a student's interest in wanting to be part of the transfer program; but only actual active participation or nonparticipation.

Control Variables

Individualized Education Program (IEP) Status

One of the several types of student learning environments the models control for is the Individualized Educational Program (IEP). It represents a major program for students who need additional academic assistance. Most IEP programs consist of a student who needs additional educational aid, either taking class with an additional instructor in the classroom or taking a class in an alternative classroom. Usually smaller classroom size and personalized instruction are associated with the alternative classroom setting. The time interaction models compare students with IEPs to students without IEPs across each of the five types of student participation in order to test the difference in achievement.

IEP status measures whether a student has an alternative learning classroom or additional classroom assistance. Students with at least one of these two conditions are classified as IEP students and are assigned the value of one. Students with neither of the above conditions are classified as non-IEP students and are assigned the value of zero. There are several specifications for students with an IEP; this model does not address that information due to confidentiality reasons. The number of student with or without an IEP varies across the models.

Students with an IEP perform lower than students without an IEP due to the additional aid that is needed to educate them. Based on the data, there are a higher percentage of inner-city students who have an IEP in comparison to suburban students who have an IEP and there are a higher percentage of black students who have an IEP in comparison to white students who have an IEP. Therefore, more students from the inner-city school district and black students in general need educational assistance with their learning

than students in the suburban school districts. Since the black students from the city can transfer to the county school districts, the study hypothesizes that the transfer program has a greater impact on IEP students. Including the IEP variable helps to discern the size of this impact.

Learners of English Program (LEP) Status

The LEP status of a student denotes whether each student has a language barrier that is addressed in an alternate classroom setting or not. Again, yes and no are given to discern that information for each student. Students with an LEP are classified as LEP students and are given the value of one. Students who do not have an LEP are given the value of zero. The number of students with or without an LEP varies within each model too.

Unlike the IEP status, more suburban students have LEPs in comparison to inner-city students and more white students have LEPs than black students. Therefore, it is expected that students with an LEP to perform lower on the MAP test than students without an LEP due to the language barriers they have. As with the IEP status of a student, it is posited that the transfer program will also have a greater impact on students with an LEP. Controlling for LEP status also helps discern the size of impact the transfer program has on student academic performance.

Free and Reduced Lunch (FRL) Status

Early findings on the black-white achievement gap conclude a student's socioeconomic background plays a major role in student achievement (Coleman, 1966; Jencks, 1972). Nationally, students who apply for free or reduced school meals are enrolled in the National School Lunch Program (NSLP). The NSLP is a federally funded program that provides students from low-income families lunches free or at a reduced fee based on the

economic status of their households. Usually families who receive temporary assistance are food stamp eligible or have a large family size with a low income and are recipients of this program. Missouri students who are eligible for free lunch live in a household with incomes less than 130 percent of poverty. Those who are eligible for reduced priced lunches come from households with incomes below 185 percent of poverty (United States Department of Agriculture, 2015).

The FRL status of a student indicates a student's socioeconomic status. It provides a way of measuring each student's household economic status based on a program accessible through schools. This measurement also indicates the different incomes of families that partake in the program and help draw comparisons about the economic status of families in urban and suburban St. Louis families. FRL status measures whether a student receives free and/or reduced meals in school. Students who receive free or reduced meals are classified as FRL recipients and students who do not are classified as non-FRL recipients. In the model, FRL is a dummy variable and reflects the two statuses. A student is given the value of one if they are a FRL recipient or zero if they are not a FRL recipient.

School Building Level Variables

Building level variables focus on factors that affect student achievement based on the particular school building a student attends. The following variables have records for each of the five years for each student in the data. Below is a description of the school building level variable, average student per teacher ratio in a school building.

Student Teacher Ratio

Student teacher ratio is the number of students per teacher in a school building. Student teacher ratio is often used as an assessment of classroom size when addressing

student achievement[3]. A classroom with fewer students is preferred in order to provide closer attention to the needs of students while learning. This study posits school buildings with lower average student teacher ratio perform better on the MAP test than students with higher average student teacher ratios. A lower student teacher ratio can have a significant impact on the academic performance of black transfer students.

Student teacher ratio represents the average number of students per one teacher in a school building. Therefore, if a student attends a school where the average student teacher ratio is 18:1, meaning 18 students per each teacher, then that student receives the value of 18 for their average student teacher ratio within the respective year.

School District Level Variables

District level variables pertain to factors experienced at the district level. These variables have observations for each of the five school years and are assigned to each student, based on the school district he or she attends. The following information provides details on how the two district level variables appear in the data and measure change in each student's academic performance.

Assessed Tax Valuation

Assessed tax valuation is a numerical value that determines the value of a school district. This value is assigned by the state of Missouri. This value is placed in constant dollars based on the 2010 school year. These figures are values taken directly from DESE's School Finance Data Report. Each student receives his or her school district's assessed

[3] This measure includes all certificated staff. It includes all classes when reporting actual class sizes for each building, which is mildly problematic. Some of the very small classes are actually special education classrooms of students with behavioral problems. In addition, class sizes differ in the elementary, middle, and high school levels, and at the high school level for different subjects.

valuation for each of the five school years. Table 5-5 contains the assessed tax valuation of each school district by year.

This variable is used because the assessed tax valuation of a school district explains several aspects about what a school district provides to its students. While those provisions are not examined individually, this study hypothesizes that a student who attends a school district with an assessed tax valuation will have higher test scores. Transfer students attending those higher assessed school districts have access to more and better provisions and can improve their academic performance.

Table 5-5: School District Finance Data – Assessed Tax Valuation by Year

DISTRICT NAME	2006	2007	2008	2009	2010
HAZELWOOD	1,770,281,850	1,816,350,650	2,053,908,400	2,066,413,810	1,931,441,590
FERGUSON-FLORISSANT R-II	952,148,730	987,042,100	1,122,602,360	1,108,015,310	1,079,611,000
PATTONVILLE R-III	1,319,616,530	1,321,765,600	1,490,383,180	1,494,933,590	1,419,428,410
ROCKWOOD R-VI	2,837,811,250	2,890,618,210	3,589,547,265	3,684,590,712	3,515,636,323
KIRKWOOD R-VII	1,042,154,950	1,060,170,050	1,251,226,290	1,280,658,440	1,242,098,790
LINDBERGH R-VIII	1,125,091,860	1,143,751,750	1,334,552,970	1,327,630,210	1,300,553,490
MEHLVILLE R-IX	1,564,703,130	1,594,199,840	1,864,499,620	1,886,929,220	1,777,204,260
PARKWAY C-2	3,864,003,980	3,908,686,950	4,631,201,990	4,682,864,625	4,448,004,710
AFFTON 101	375,171,340	375,781,070	432,748,290	434,536,350	404,957,950
BAYLESS	147,630,670	148,724,420	175,541,500	175,830,780	159,569,310
BRENTWOOD	253,939,560	251,983,450	300,333,050	299,247,370	323,996,590
CLAYTON	900,564,550	905,792,520	1,053,238,080	1,068,560,530	1,050,174,880
HANCOCK PLACE	60,831,720	61,629,430	73,984,430	74,267,230	73,400,400
JENNINGS	104,299,060	108,012,740	119,509,900	120,729,390	124,133,260
LADUE	1,273,876,730	1,288,889,120	1,526,027,185	1,536,112,480	1,482,073,350
MAPLEWOOD-RICHMOND HEIGHTS	226,017,070	229,057,670	286,862,900	286,717,760	293,023,740
NORMANDY	237,474,490	239,147,170	275,162,170	273,375,830	274,904,240
RITENOUR	541,347,330	547,353,320	638,489,100	639,119,710	593,331,120
RIVERVIEW GARDENS	252,310,510	251,702,880	275,772,230	275,351,980	258,480,090
UNIVERSITY CITY	544,917,700	549,315,570	638,919,200	641,398,670	613,640,010
VALLEY PARK	138,539,470	138,751,740	157,613,050	162,144,960	173,490,950
WEBSTER GROVES	633,524,120	636,268,710	756,220,120	756,779,326	728,663,570
WELLSTON	20,152,380	20,179,120	19,859,560	18,323,670	18,793,960
ST. LOUIS CITY	3,793,118,911	3,714,548,699	4,289,134,632	4,250,211,130	4,321,388,787

Source: Missouri Department of Elementary and Secondary Education (DESE)

Percent of Transfer Students

The data includes the percent of transfer students in attendance for each district. This variable is present because the percentage of transfer students in a district affects how integrated a student's learning atmosphere is based on the guidelines of the transfer program for student selection. The more integrated a school district is, the more effective the program is at achieving its goals of providing better educational settings for blacks and integrating school systems. Both of these goals affect improving black achievement. Additionally, this variable is used in the models because the number of transfer students allowed to transfer into a school district is a decision made at the district level. This variable might also indicate if district level decisions about program participation are beneficial toward the integration process. While this variable does not properly assess the degree to which a school is integrated, it does assess if the presence of transfer students in a school district matters. School districts with transfer students may perform differently than those without.

To achieve the value for the percent transfer in each school district, each school district's total enrollment is divided by its total number of admitted transfer students for each year. To achieve the percentage, the product is multiplied by 100. Each percentage is assigned to each individual student based on the school district he or she attends for each respective school year. School districts that do not participate in the transfer program receive a zero for having no transfer students in the student enrollment. Table 5-6 displays the percent of transfer students in each school district's student enrollment by year.

Table 5-6: Percent of Transfer Students in School Districts by year

DISTRICT NAME	2006	2007	2008	2009	2010
HAZELWOOD	0	0	0	0	0
FERGUSON-FLORISSANT R-II	0	0	0	0	0
PATTONVILLE R-III	3.4	2.7	.6	1.2	.9
ROCKWOOD R-VI	8.7	9.5	1.7	8.4	8.1
KIRKWOOD R-VII	11.3	11.4	10.8	9.8	8
LINDBERGH R-VIII	8.5	7.2	5.9	4.8	.4
MEHLVILLE R-IX	9.8	8.5	8.3	7.4	6.5
PARKWAY C-2	11.2	10.7	10	9.1	8.2
AFFTON 101	7.6	6.1	5.4	5.1	4.4
BAYLESS	9.2	8.4	7.6	6.4	6.6
BRENTWOOD	20	18.6	17.6	15.8	14.6
CLAYTON	18.7	18	19.1	18.8	18.2
HANCOCK PLACE	17	22	7.7	20.3	18.5
JENNINGS	0	0	0	0	0
LADUE	1.8	1.2	.6	.4	.1
MAPLEWOOD-RICHMOND HEIGHTS	0	0	0	0	0
NORMANDY	0	0	0	0	0
RITENOUR	.0	.0	.0	0	0
RIVERVIEW GARDENS	0	0	0	0	0
UNIVERSITY CITY	0	0	0	0	0
VALLEY PARK	19.9	20.7	19.6	17.6	16.4
WEBSTER GROVES	8.7	8.3	7.6	6.7	6.2
WELLSTON	0	0	0	0	0
ST. LOUIS CITY	1.2	.9	.9	.7	.7

Methodology

Multi-Level Hierarchical Modeling

Using multi-level modeling allows one to study effects that vary by groups. It also allows estimation of group level averages. One cannot see crossed level effects any other way. Regular regression ignores the average variation between groups. In addition, individual regression can experience sampling problems and lack generalization. A dissimilarity index model is another option, but it does not appropriately take into account the spatial patterning of the three levels and would ignore the variation across levels.

Four sets (eight total) of multi-level regression models are conducted. Each set includes one model for communication arts MAP tests and one model for mathematics MAP tests. The first set is a three year model that covers the third through tenth or eleventh grade students' MAP test scores between 2006 and 2008. After 2008, the requirement of high school students to take the MAP test ends. Tenth and eleventh grade students are not included in the five year models. The second set of models is a five year model that includes the third through eighth grade students' MAP test scores between 2006 and 2010. The third and fourth sets of models are time interacted models. These four models provide a better assessment of the transfer program's effect on student achievement from 2006 to 2010. Students who are in the third grade in 2006 make up the third set of models. Students who are in the fourth grade in 2006 make up the fourth set of models.

All models have a hierarchical leveling structure where individual students are nested within school buildings and those school buildings are nested within school districts. The following chapter explains the construction process of the models and the tests for the best model fit. It also discusses the tests that ensure the data are statistically significant from each other and

that there is no overlap in data. Graphs illustrate the variation in achievement based on participation over time.

To construct the hierarchical linear model, there is a three step process. The first step constructs the base model. This model computes the estimate mean score of all observations and identifies the standard deviations at all three levels. This model only includes the dependent variable. The second model predicts growth of achievement across student types by including the independent variables. It allows for random intercepts and slopes, but does not include predictor variables at the second level (school building level) and third level (school district level). This tracks standard growth. The third and final model construction includes the predictor and control variables for identifying the average growth in achievement. The participation and predictor variables are not included for level two (school building) and level three (school district) of the model.

In the base model, the estimate of the mean score for each mathematics' and communication arts' test scores determine the standard deviations at the school district, school building, and student levels. The intra-class correlations are also determined at the district level and student level to detect achievement between two students in the same district, and between two measurements on the same child in the same school. This allows one to see how much variation in scores are attributed to the school district level predictors and school building level predictors, and how much are attributed to the student. It is ideal to see more variation at the student level than the school district or school building level because lower levels are closer to the observed occurrence (in this case, the MAP test scores).

To test for the best fit of my model, the Aikaike information criterion (AIC) and Bayesian information criterion (BIC) indicators are examined. The AIC and BIC indicators are two measures that compare maximum likelihood models by looking at the number of

estimated parameters (AIC and BIC) and the number of observations (only BIC). The BIC indicator is considered to be a more stringent measure. In general, smaller AIC and BIC results are preferred because they indicate a better fitting model. Three sets of AIC and BIC results are assessed to determine the appropriate model for assessment. These results are located in the next chapter with each individual model's regression results.

First, an empty model records the AIC and BIC indicators. The empty model only includes the dependent variable. In the second assessment, the AIC and BIC indicators of the model are recorded with the dependent variable, independent variable (student type dummy variables) and the three level model specification. The third AIC and BIC indicator assessment involves including the dependent variable, independent variables, other control and predictor variables, and the three level model specification. As the inclusion of more components in the model occurs, the AIC and BIC indicators begin to decrease in size. The indicators produce a very high value each time. This is due to the high number of observations in the models. Though the values were high, they continually decrease when testing each new model. This confirms the fit of the third model is appropriate for the assessment.

For both Communication Arts and Mathematics three year models and five year models, a three-level hierarchical linear (HLM) model (four models total) is conducted to assess the variation of student achievement on the MAP test across the five types of student participation. After running each model, an assessment of the level of variation explained at the student, school building, and school district level is taken. This assessment is performed for each year within each of the four models. The following chapter explains the level of variation for each model.

To provide a visual of achievement based on participation, a plot of the lines for the five types of student participation is graphed. These graphs show the average rate of achievement on the MAP test based on the type of participation across all students. More specifically, these graphs illustrate the gaps in student achievement across student types during these five school years.

The three year models and the five year models are very similar in design. The only difference between the two is the exclusion of the students in high school grade levels in the five year model. After 2008, high school students no longer took the MAP test. Therefore, the communication arts five year assessment covers the estimated mean scores of all students who complete the MAP test in third through eighth grades between 2006 and 2010. Two major effects occur with the exclusion of the high school students. One, there is a substantial decrease in the number of observations at the student and school building levels. This is due to not observing the high school level school buildings. Two, the average estimate of the mean score is lower. This can be due to the higher range of scores high school students are able to attain on the MAP test in comparison to the lower grade levels.

Two time models are conducted for each of the two test subjects. The first time model uses the observations of students who are third graders in the 2005-2006 school year. These students are seventh graders by the 2009-2010 school year. The second time model uses the observations of students who are fourth graders in the 2005-2006 school year. These students are eighth graders by the 2009-2010 school year. In this model, the time variable is centered to ensure a mean of zero across the school years and then is interacted with the student participation dummy variables. After running each of the models, the gap of MAP test scores between each student type is tested for statistical significance.

The time interaction in the third and fourth sets of models measures the growth of achievement over time. A centered school year tracks this growth. To do this the school years are recoded so the years fall on a continuum from -2 to 2, where a test score from 2006 receives -2 and a test score from 2010 receives a 2 (the other three school years are in between). This step creates a constant for time and allows the variable to be centered on zero. The constant term represents year 2008. White county students remain the constant. By obtaining the correlation of the random effects, the model identifies the correlation between the student's achievement in 2008 and his/her rate of growth. Also, the correlation between a district's achievement around fifth grade and the rate of change per year is identified. Again, it is expected that most of the variance between student achievements is at the student level rather than at the school building or school district levels, but the variation in rate of change per year is expected to remain about the same at all three levels.

Each dependent variable is interacted with the centered school year in order to assess the rate of change over time at the school district, school building, and student level. This tests the effect of the length of time a student participates in the transfer program on student achievement. The time interacted student aids in identifying the number of times a student is a particular type of student over the five years.

Drawbacks

Data

There are two minor issues with the data. These issues involve the ability to assess participation to a certain depth. There are also issues that pertain to the longitudinal measurements. The first issue with this dataset involves missing school years for students. Some students do not have information for every school year that is assessed. This can be an indication of school systems not completing the MAP test's information entirely, grade level

changes, or student mobility. If a student does not complete a test or the school does not complete his or her information for record keeping, that year is not present. If a student is in kindergarten, first, second, ninth, or twelfth grade during the 2006-2010 time frame, he or she does not have information for those years because students are not tested in those grade levels.

The second issue concerns the participation variable. This dissertation does not assess program interest or school choice. If a student is on the waitlist, begins, or stops participation during the five year period there is no information available to show his or her decision. However, this is not a model designed to study likelihood of participation, but actual participation on a year by year basis. This may be problematic if cases need more in depth tracking.

Methods

There are two issues with the execution of the methodology. One, the models do not look at fixed slope estimates. The models are in the simplest form. While the results of the best fit for the models are provided, using fixed slope estimations provides a better fit for the slopes. Two, because of the missing student level information mentioned above, the models do not follow each student for the full five years due to the high amounts of student level information missing. To compensate for the missing information, the models used examine student achievement overall, all the while maintaining the multi-level structure for the models.

Overall Design

There are five issues with the overall design. One, the student achievement measurement is a very difficult measurement to gauge student performance. Since the ranges

of MAP test scores change for each grade level and are different for each testing subject, there is not a constant/neutral value to assess student achievement on the MAP test. This is why the MAP achievement level of students' test scores interprets the results. Even though this difficult grading scale is akin to the MAP test and other achievement tests have different ranges for measuring achievement, the MAP test is chosen because it is the most consistently taken achievement test across most grade levels during this time frame.

Two, the school building level data is not as comprehensive. I expect the school building level variable to explain more variation in student achievement in comparison to the school district level variables. Since only one variable is provided, the high amount of variation cannot be evaluated for impact. It is pertinent to add in more variables for future research.

Three, classroom level data is not considered, but may explain more variation in student achievement than school building level data. The closer a level of observation is to the unit of analysis; the more variation is explained. Classroom level information is not explored in this study, especially since the school building level information is highly sensitive information and difficult to access for each individual student.

Four, the study does not address student mobility. Therefore, it is not understood if and when students move throughout the county and city school districts. Student mobility would aid in understanding the impact school systems have on student achievement and a family's choice in schooling. It also aids in understanding why a family does or does not consider participation in the transfer program.

Relative to student mobility, school choice is not addressed in the study either. The other forms of school choice options (private schools, charter schools, to name a couple) that

are available to the students in the city and county are also important when considering student achievement. School choice options can help one understand the choices a family makes based on how beneficial current schooling fares for a child or children.

Chapter Six

Results

The impact of the VICC program is evident in numerous settings. Black transfer students benefit from participating in the VICC program in the following ways. On communication arts MAP tests, black transfer students consistently score substantially higher than black city students, regardless of whether or not they have Individualized Education Program (IEP), Limited English Proficient (LEP), or Free and Reduced Lunch (FRL) assistance. Even more, the achievement gap subsists between the two student types regardless of the growth in black city student achievement. Most often black transfer students score lower than black county and white city students, but in some instances black transfer students do score higher. On mathematics MAP tests, black transfer students usually score substantially higher than black city students regardless of whether or not they have learning deficiencies, language barriers, or come from a low income household. Although the achievement gap between the two types of students narrow, the black transfer students' scores are too high and the black city students' scores are too low for the gap to close. There are specific instances where black transfer students excel above other student types, regardless of the test subject. For example, black transfer FRL recipients score higher than black county and white city FRL recipients.

A school district's participation in the VICC program may also be beneficial to its students. This applies to students who are not black transfer students and attend a school district that accepts transfer students. The results show a student's MAP test score increases with the percentage of transfer students enrolled in his or her school district. Therefore, the higher percentage of transfer students in a school district, the higher students' average scores

are on the MAP test. If a student attends a school district that is part of the VICC program, he or she experiences this benefit.

There are two major areas where the VICC program has little to no impact. Black transfer students, though able to score higher than white city students in some situations, are not able to close their achievement gap. They are also unable to close their gap with the white county students. In spite of the growth in their achievement, black transfer students' scores are too low to catch up to white city and white county student achievement.[4]

The rest of this chapter is a detailed presentation of these findings. It addresses all models based on the two MAP test content areas: communication arts and mathematics. A discussion of the larger models is first, followed by the results of the smaller models. This analysis covers all statistically significant results and substantively significant findings germane to the impact the VICC program has on student MAP test scores, particularly those of black transfer students.[5] In addition, this chapter covers the size of the achievement gaps between black transfer students and other student types. The chapter concludes with an assessment of methodology, a comparison of the results to the previous studies covered in the fourth chapter, and recommendations for future research.

Communication Arts Results

Three Year Model (Third – Tenth Grades), 2006-2008

Table 6-1A presents the results of the three year communication arts HLM model. This model specifically examines the communication arts MAP test scores of all students who completed the MAP test in third through eleventh grades between the 2006 and 2008

[4] Black county students' growth in academic achievement is ignored because they do not have a statistically significant result.
[5] The discussion only interprets results that are statistically significant and ignores those that are not.

school year.[6] In relation to the effectiveness of the VICC program, there are three main results. One, the majority of variation in MAP test scores is found at the student and school building levels. Two, black transfer students score lower than white county, white city, and black county students on average, but score higher than black city students. Three, the higher the percentage of transfer students in a school district, the higher a student's MAP test score is.

This model is statistically significant with a chi-square of 0.0000. Across the three year assessment, on average this model explains about 58.6 percent of the variation in MAP test scores at the student level, 39.5 percent of the variation in MAP test scores at the school building level, and 2 percent of the variation in MAP test scores at the school district level. All but two variables are statistically significant at the 0.05 level: the assessed tax valuation of school districts and the average student per teacher ratio of school buildings. The high number of observations in the data increases the chance of having statistically significant findings.

[6] First, second, ninth, tenth, and twelfth grade students are not tested in communication arts.

Table 6-1A: Three Year HLM Results (Communication Arts)

HLM Results of Communication Arts MAP Test Scores			
General Info	2006	2007	2008
Observations	79,537	78,040	75,381
Number of Districts	24	24	24
Number of Schools	327	327	322
Fixed Effects	2006	2007	2008
Intercept (White County)	685.6*** (4.3)	686.7*** (4.2)	680.5*** (4.6)
Black City	-26.9*** (4.4)	-29.9*** (4.2)	-28.6*** (4.5)
Black Transfer	-25.6*** (4.6)	-28.7*** (1.9)	-22.9*** (.7)
Black County	-21.9*** (.4)	-20.8*** (.4)	-19.0*** (.5)
White City	-10.4** (4.5)	-14.7** (4.4)	-13** (4.6)
FRL	-8.6*** (.3)	-9*** (.3)	-9.4*** (.3)
IEP	-34.7*** (.3)	-35.2*** (.3)	-32.5*** (.3)
LEP	-29*** (1.2)	-28.1*** (1.3)	-20.3*** (1.2)
Percent District Transfer	0.7** (.3)	0.7** (.3)	0.9** (.3)
District Assessed Tax Val.	2.71E-10 (1.25E-9)	-6.56E-10 (1.23E-9)	3.7E-10 (1.0E-9)
Student Teacher Ratio	0.2 (.2)	0.1 (.2)	0.2 (.2)
Random Effects	2006	2007	2008
School District	0 (0)	0 (0)	1.8 (1.1)
School Building	21.1 (2.4)	21.3 (.9)	20.8 (.8)
Residual	31 (.1)	31.5 (.1)	31.4 (.1)
Model Fit Statistics	2006	2007	2008
AIC	773,658.8	761,520.3	736,172.5
BIC	773,788.8	761,650.0	73,601.7

* statistically significant at .05
** statistically significant at .01
*** statistically significant at .00

White county students represent the intercept in the model and serve as the group each student type is compared to. Since they are the highest performers of all the student types on the MAP test, the other student types reflect a negative relationship with student achievement. FRL, IEP, and LEP also show a negative relationship with student achievement. Thus, a student with any of these three statuses scores lower than students without. The positive relationship of the percent of transfer students in a school district means that a student's performance on the MAP test improves in school districts with higher percentages of transfer students. In addition, the positive relationship of student per teacher ratio in a school building shows that students' test scores improve with higher student per teacher ratios. The assessed tax valuation of a school district has both positive and negative relationships with student achievement.

Each year does not have the same number of observations. There are 79,537 students recorded in 2006, 78,040 students recorded in 2007, and 75,381 students recorded in 2008. While all 24 school districts were involved in the results, there are a few missing student records for school buildings. For example, there are 327 school buildings tested in 2006 and 2007, and 322 school buildings tested in 2008. The estimate of the mean score for 2006 is 685.6, for 2007 the mean score is 686.7, and for 2008 the mean score is 680.5. These are scores in communication arts that equate to students scoring at the advanced level in third grade, at the proficient level in fourth through seventh grades, and at the basic level in eighth and eleventh grades.

At the student level, white county students score on average between 681 to 687 points. These test scores make up the mean score. White city students score 10 to 15 points lower than white county students on average. Across grade levels this represents third and

fourth grade students scoring at proficient, fifth through eighth grade students scoring at basic, and eleventh grade students scoring at below basic. Black county students score 19 to 22 points lower than white county students on average. This reflects third grade students at proficient, fourth through eighth grade students at basic, and eleventh grade students at below basic. Black transfer students score 23 to 29 points lower than white county students. The achievement levels of the black transfer students match those of the black county students. Black city students score 27 to 30 points lower than white county students on average. These scores reflect third through eighth grade students performing at the basic level and eleventh grade students performing at the below basic level.

There are three inferences that develop from this assessment of the five types of students. One, based on race and grade levels, there is a larger proportion of white students who score at the advanced and proficient levels than black students on average. Two, the race of a student and where he or she attends school matters. This is evident from the statistically significant results produced in this first model and the gaps in scores among the five student types. Three, the black transfer students perform better than black city students on the MAP test. This provides evidence that the program has a positive impact on black transfer student achievement because their scores are higher than black city student scores. The time interaction models identify the different ways black transfer students experience this impact.

IEP students score 33 to 35 points lower on average than students without an IEP. LEP students score 20 to 29 points lower on average than students without an LEP. FRL students score 9 points lower on average than students without FRL on average. Across this three year span, all IEP, LEP, and FRL coefficients are statistically significant from zero.

These results shows that any student who holds any of these three statuses, regardless of student type, on average have a lower score than students who do not hold any of these three statuses.

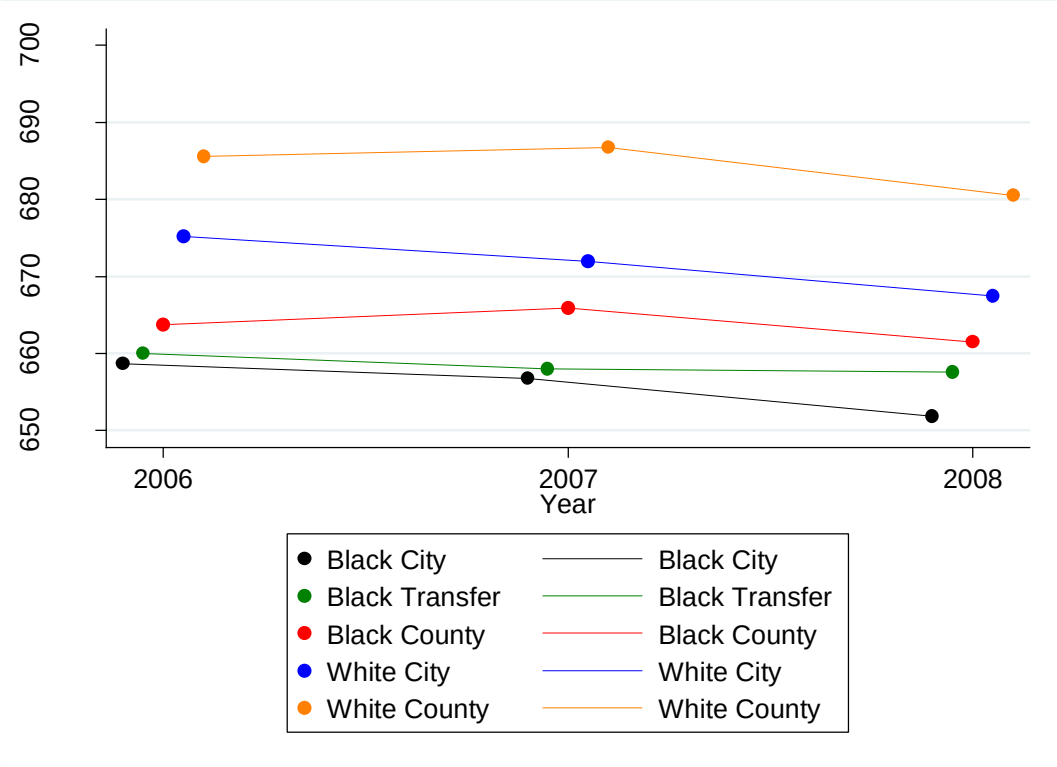
One can expect certain student types to perform lower on the MAP test in comparison to the others due to the disproportionate representation each student type has in these three statuses. For example, there are higher proportions of black city, black transfer, and black county students with an IEP and/or receiving FRL in comparison to white city and white county students. Therefore, black students, regardless of their home location, will score lower than whites on average based on the high proportion of black students having a low socio-economic status and receiving an IEP for their educational limitations. Additionally, there are larger proportions of white city and white county students with a LEP in comparison to black city, black transfer, and black county students. However, the disproportionate LEP participation of white students is much smaller and does not compare to the magnitude of the IEP and FRL participation of black students.

Of the school and district level predictor variables, two of the three are statistically significant predictors of test scores: the percent of transfer students in a school district and average student teacher ratio in a school building. From 2006 to 2008, as a district increased transfer student attendance by one percent, the average student MAP test score also increased by .7, .7, and .9 of a point. The student teacher ratio in a building did not show much change over time and left inconsistent directions of a relationship. As a school building's average student per teacher ratio increased by one student, student MAP test scores fluctuated by .18, -.1, and .1 of a point from 2006 to 2008. A district's assessed tax valuation did not help

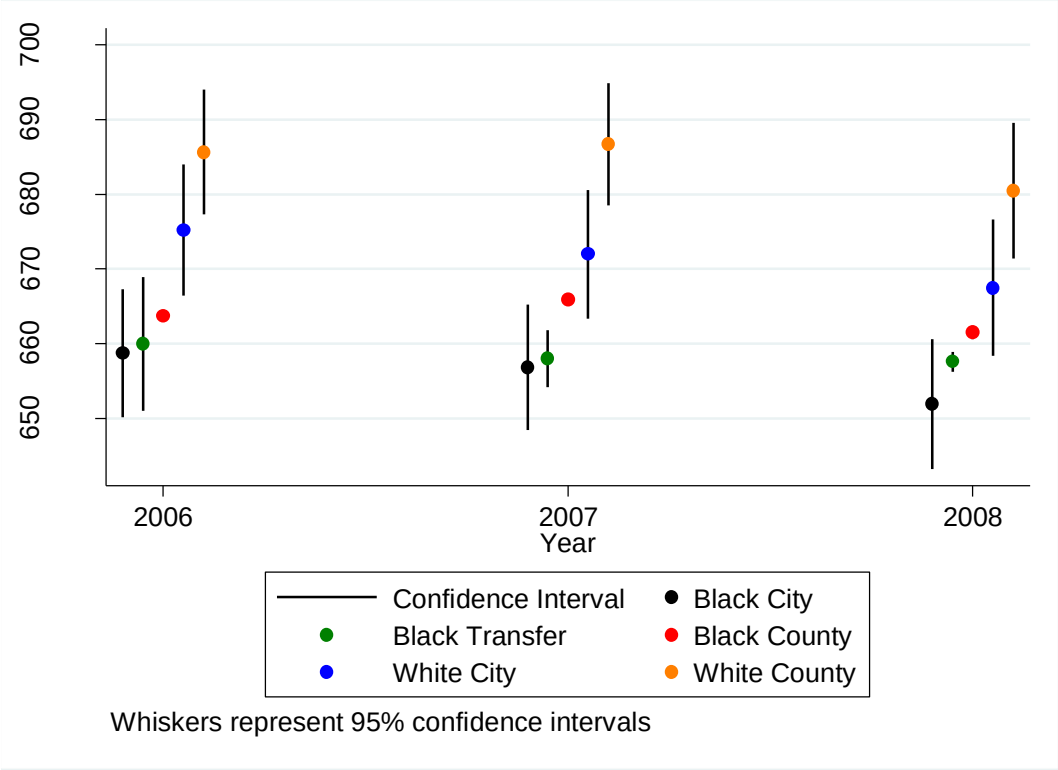
explain variation in student test scores. This predictor was not statistically significant for any of the years in this model.

Graph 6-1A plots the expected values of MAP test score achievement across time. Graph 6-1B is another plot of the expected values, but includes their respective 95 percent confidence intervals. These graphs show an increase in both black and white county students' scores from 2006 to 2007, while white city, black transfer, and black county students' scores experience a decrease. From 2007 to 2008, all students' scores decrease greatly, except for the black transfer students' scores. These graphs make the gaps in achievement across student types visible. A test of the gaps in achievement scores across all student types confirms every gap is statistically significant from zero.

Graph 6-1A: Gaps in Achievement on MAP Test (Communication Arts), 2006-2008



Graph 6-1B: Expected Values of Achievement with Confidence Intervals (Communication Arts), 2006-2008



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There are three implications that develop from the trend lines in Graph 6-1A. One, where a student resides may matter. Students who reside in the city have similar trend line patterns to each other and students who reside in the county have similar trend line patterns. However, the transfer students are the exception, which leads to the second implication. Two, where a student attends school may matter more. Over the three year period, the black transfer students' trend line appears to be flatter in comparison to the other student types. The other student types have a downward slant (white city and black city students) or a mountain-shaped trend line (white and black city students). Therefore, black transfer students show MAP test achievement trends similar to county school students. This provides evidence of a positive impact participation in the transfer program might have on student achievement.

Three, the transfer program is effective in improving MAP test scores. Over time the achievement gap changes for black transfer students in comparison to the other student types. The differences between the black transfer and black city students' test scores continuously widen over the three year period. While the gap between black transfer students and black city students widen, the gaps between black transfer students and the other three student types lessen. This is because the other four student types have a sharper downward slant in MAP test scores in comparison to the black transfer students. The trend lines of the achievement gaps also confirm that the independent variable is a good variable to gauge MAP test achievement in St. Louis students from the county and city school districts.

Five Year Model (Third – Eighth Grades), 2006-2010

Table 6-1B displays the results of the five year communication arts HLM model and specifically covers the communication arts MAP test scores from the 2006 to the 2010 school year. The main findings from this model differ in one instance from the three results in the

three year model. Although it is low, the variation in test scores is much more evident at the school district level in this model in comparison to the previous three year model. Black transfer students continue to score above black city students, and below black county, white city, and white county students. A school district's percent of transfer students continues to have a positive impact on a student's test score.

Table 6-1B: Five Year HLM Results (Communication Arts)

HLM Results of Communication Arts MAP Test Scores					
General Info	2006	2007	2008	2009	2010
Observations	69,854	67,968	65,530	63,542	62,333
Number of Districts	24	24	24	24	24
Number of Schools	279	280	277	273	262
Fixed Effects	2006	2007	2008	2009	2010
Intercept (White County)	676*** (3)	678.5*** (2.9)	672.5*** (3.5)	672.7*** (3.2)	671.4*** (3.5)
Black City	-31*** (6.1)	-33.4*** (4.9)	-30.2*** (6.3)	-27*** (2.9)	-32.3*** (5.9)
Black Transfer	-25.6*** (5)	-29.3*** (2.2)	-22*** (.8)	-21.2*** (.8)	-23*** (.8)
Black County	-22*** (.4)	-21.2*** (.5)	-18*** (.5)	-15.6*** (.5)	-16.7*** (.6)
White City	-13.4** (6.2)	-17.5** (5.1)	-15** (6.4)	-10.7** (3.2)	-16.4** (6)
FRL	-9.3*** (.3)	-9.6*** (.4)	-9.7*** (.3)	-10.7*** (.4)	-11.8*** (.4)
IEP	-34.8*** (.3)	-35*** (.4)	-32*** (.4)	-31.9*** (.4)	-33*** (.4)
LEP	-28.9*** (1.3)**	-27.7*** (1.4)	-20*** (1.2)	-21.3*** (1.3)	-22.4*** (1.4)
Percent District Transfer	0.5 (.2)	0.5** (.2)	0.7** (.3)	0.9*** (.2)	0.9*** (.3)
District Assessed Tax Val.	-1.9E-10** (1.3E-9)	1E-10 (1.1E-9)	1.1E-09 (1.1E-9)	1.7E-10 (7.0E-10)	1.5E-09** (1.1E-9)
Student Teacher Ratio	0.3 (.1)	0.2 (.1)	0.3 (.2)	0.3 (.2)	0.5 (.2)
Random Effects	2006	2007	2008	2009	2010
School District	4.5 (1.4)	3.3 (1.5)	4.7 (1.3)	0 (.1)	4.1 (1.6)
School Building	10.7 (.5)	12 (.6)	12.4 (.6)	13.1 (.6)	12.7 (.6)
Residual	31.7 (.1)	32.4 (.1)	31.5 (.1)	31.2 (.1)	32.5 (.1)
Model Fit Statistics	2006	2007	2008	2009	2010
AIC	682,130.5	666,755.9	639,186.3	618,377.6	611,655.0
BIC	682,258.6	666,883.7	639,313.6	618,495.4	611,781.5

* statistically significant at .05
** statistically significant at .01
*** statistically significant at .00

This model is statistically significant with a chi-square of 0.0000. This model explains about 67.3 percent of the variation in MAP test scores at the student level, 25.7 percent of the variation in MAP test scores at the school building level, and 7 percent of the variation in MAP test scores at the school district level. All but two variables are statistically significant. A district's assessed tax valuation is not consistently statistically significant across all five years, and the student per teacher ratio of a school building is not statistically significant for three of the five years. Again, this is due to the high number of observations in the data.

The direction of relationships between the predictor variables and student achievement in this model are similar to the ones in the previous model. The white county students remain the highest performers; therefore, the other student types have a negative relationship with student achievement. FRL, IEP, and LEP have negative relationships with student achievement, which shows students without these statuses have a better academic performance on the MAP test. The percent of transfer students in a district has a positive relationship with student achievement, supporting the implication that a district's participation improves students' test scores. A district's assessed tax valuation has a negative relationship with student achievement, which means that students' test scores are lower in school districts with higher assessed tax valuations.

This model includes all 24 school districts each year. However, the number of students and school buildings are different each year. There are 69,854 students in 2006, 67,968 students in 2007, 65,530 students in 2008, 63,542 students recorded in 2009, and 62,333 students recorded in 2010. As for school buildings, there are 279 in 2006, 280 in 2007, 277 in 2008, 273 in 2009, and 262 in 2010.

The estimate of the mean score (the average white county student's MAP test score) for 2006 is 676, for 2007 the mean score is 678.5, for 2008 the mean score is 672.5, for 2009 the mean score is 672.7, and for 2010 the mean score is 671.4. These estimated mean scores are much lower than the estimated mean scores in the previous three year model. These are scores in communication arts that equate to students scoring at the proficient level in third and fourth grade, and at the basic level in fifth through eighth grade. Since the estimated mean scores are lower in the five year model, all students' test scores are lower.

Comparatively, white city students score 11 to 18 points lower than white county students on average. This range of scores is slightly worse in comparison to the 10 to 15 point range in the three year model. Across grade levels this represents third grade students scoring at proficient and the fourth through eighth grade students scoring at basic. Black county students score 16 to 22 points lower than white county students on average, which is slightly better than their 19 to 22 point range in the three year model. The black county students share the same achievement levels across grade levels as the white city students. Black transfer students score 22 to 29 points lower than white county students, which is the same range of points from the previous model. The achievement levels of the black transfer students are at the basic level for third through eighth grades. Black city students score 27 to 33 points lower than white county students on average, which is a wider range than in the three year model. However, the black city students' achievement levels match the black transfer students' achievement levels.

The previous three implications from the three year communication arts model are evident in this model. White students score higher than black students. The student type variable is meaningful to understanding student achievement because it focuses on the race

of a student and where he or she attends school. Though there is a smaller effect with achievement level in this model, the black transfer students perform better than black city students.

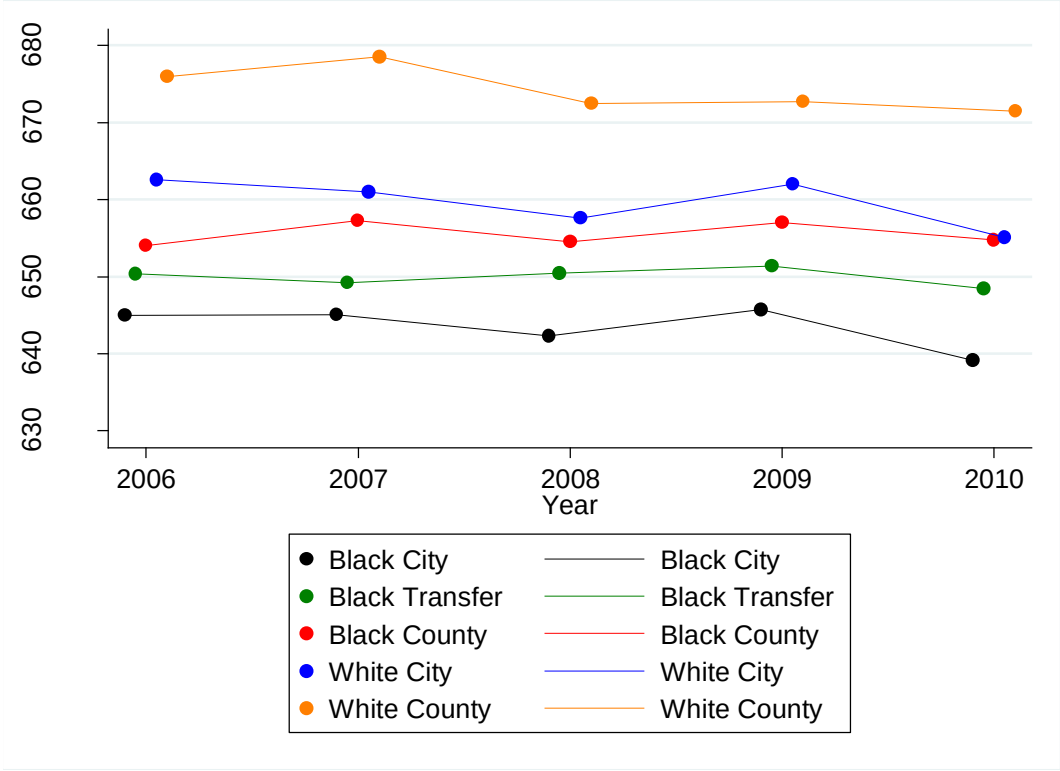
IEP students score 32 to 35 points lower on average than students without an IEP. LEP students scored 20 to 29 points lower on average than students without an LEP. FRL students scored 9 to 12 points lower on average than students without FRL on average. Across this five year span, all IEP, LEP, and FRL coefficients are statistically significant from zero. These results are consistent with the three year model and show that any student who holds any of these three statuses will on average have a lower score than students who do not. Because these variables show substantial change in test scores in this model and the one prior, the following interaction models use them as control groups in order to examine program impact of student's with these statuses.

Of the school and district level predictor variables, none are consistently a statistically significant predictor of test scores. From 2007 to 2010, as a district increased transfer student attendance by one percent, the average student MAP test score also increased by .5, .7, .9, and .9of a point on the MAP test. The student teacher ratio in a building slightly improved over time. The district assesses tax valuation variable was statistically significant for the 2006 and 2010 school years, but the size of variation is non-existent. The average student per teacher per teacher ratio was not statistically significant for any of the years in this model.

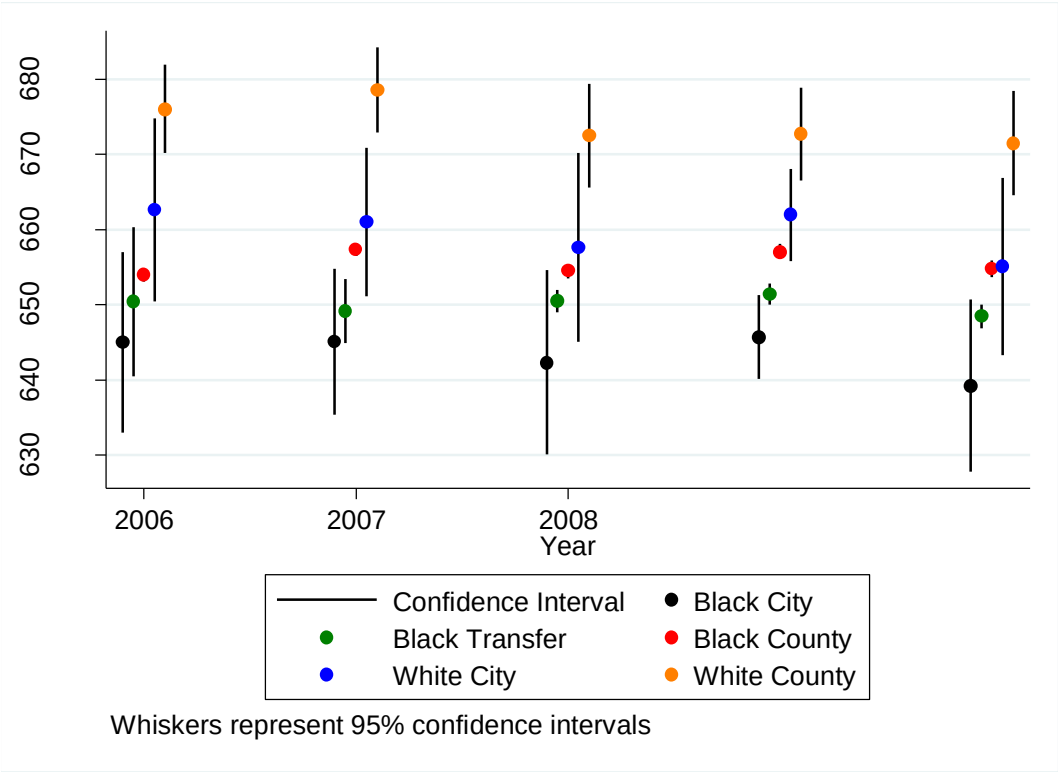
Graph 6-1C plots the expected values of the five year communication arts MAP test achievement and Graph 6-1D illustrates the expected values with their 95 percent confidence intervals. White and black county students' scores increase from 2006 to 2007, and then

continuously decrease from 2007 to 2010. White and black city students' scores decline from 2006 to 2008, increase in 2009, and then decrease in 2010. Black transfer students have a different trend line from the other student types. Their scores decrease from 2006 to 2007, increase from 2007 to 2009, and then decrease in 2010. All student types remain in their position of scoring, regardless of the varying fluctuations in their scores over the five years. All student types end with their lowest score by 2010; however, the white county, white city, and black city students have substantially lower scores in comparison to the black county and black transfer students. In addition, the black county and black transfer students' scores did not change as drastically as the other student types. A student's residence and school location continues to be influential on MAP tests. The test of the gaps in achievement scores finds every gap statistically significant.

Graph 6-1C: Gaps in Achievement on MAP Test (Communication Arts), 2006-2010



Graph 6-1D: Expected Values of Achievement with Confidence Intervals (Communication Arts) 2006- 2010



Again, the three implication prove to be evident in the five year models as well. One, where a student resides may matter. County students and city students have similar trend line patterns in the five year model, and again, the transfer students differ from both. Two, where a student attends school may matter more. The black transfer students' trend line appears flatter in comparison to the other student types even though it fluctuated. Even more, their test scores are the only ones to improve in 2008. Therefore, when all other student types decrease in achievement, black transfer students improve.

Three, the transfer program improves MAP test scores. Black transfer students lessen their performance gaps with the higher performing black county, white city, and white county students, and increased their performance gap with the black city students. These three student types have a sharper downward slant in MAP test scores in comparison to the black transfer and black county students. The independent variable continues to be a decent gauge for variation in MAP test achievement for the county and city school districts in St. Louis.

Time Interaction Model for 2006 Third Grade Students

This model includes five years of data on 52,742 students. It examines third grade students from the 2006 school year. By the 2010 school year, these students progressed to the seventh grade. This model differs from the first two in four ways. One, the output displays the results of six control groups. These six control groups include students with IEP, LEP, and FRL status, and students without IEP, LEP, and FRL status. Two, the model incorporates a variable for time, referred to as a centered year. This time variable is based on the five school years and is centered to have a mean of zero. Three, there are five new interaction variables. These variables are an interaction between the five student types and

the new centered year variable. These six new variables show the growth in achievement across student types. Last, this model excludes previous predictor variables from the larger models. It excludes the average student teacher ratio and school district assessed tax valuation because they are not statistically significant in the larger models. It also excludes the district percent transfer variable. Even though it is statistically significant in the larger models, the impact of the district percent transfer variable is too weak to include in the time interaction models.

Table 6-1C displays the results. It shows the model is statistically significant with a chi-square test of 0.0000. The model explains that 65.6 percent of the variation in MAP test scores occurs at the student level, 23.5 percent of the variation in MAP test scores occurs at the school building level, and 10.9 percent of the variation in MAP test scores occurs at the school district level. The white county student variable remains the constant term and comparative group for student types. The centered year variable represents the growth in achievement of white county students. The five new interaction variables use the centered year variable to compare the growth in achievement across student types. The black county student interaction variable is the only variable that is not statistically significant. The following results address the impact the VICC program has on black transfer students across the six control groups.

Table 6-1C: Time Interaction Model for 2006 Third Graders, by Control Variable (Communication Arts)

Time Interaction Model, by Control Variable						
General Info	IEP	No IEP	LEP	No LEP	FRL	No FRL
Observations	7,847	44,895	744	51,998	23,824	28,918
Number of Districts	24	24	11	24	24	23
Number of Schools	270	277	41	279	276	256
Fixed Effects	IEP	No IEP	LEP	No LEP	FRL	No FRL
Intercept (White County)	652.6***	682.5***	657.3***	678.2***	665.5***	680.1***
	(2.6)	(1.7)	(3.9)	(1.9)	(1.4)	(1.9)
Centered Year	10.2***	12.5***	12.1***	12.7***	11.7***	13.2***
	(.2)	(.2)	(1.9)	(.2)	(.5)	(.3)
Black City	-53.7***	-37.7***	-34.6***	-41.9***	-30.6***	-36***
	(10)	(7.2)	(7.8)	(7.5)	(3.7)	(7.8)
Black Transfer	-29.2***	-27.6***	1.6	-28.2***	-10.6***	-23.8***
	(4.8)	(1.5)	(29)	(1.6)	(2)	(4.7)
Black County	-35.3***	-23.3**	-10	-24.2***	-18.4**	-15.6***
	(1.8)	(.5)	(14.2)	(.5)	(.9)	(.8)
White City	-28**	-25.9***	-24.8***	-21**	-19.4***	-16.2*
	(11.1)	(7.4)	(5.8)	(7.7)	(4.1)	(8)
Black City * Year	-.4	-.6	-5.7	-1.8***	-.9	-2.1
	(1.3)	(.5)	(4.6)	(.5)	(.7)	(1.2)
Black Transfer * Year	1.2	-3.1**	-4.9	-3.8**	-5**	-1.1
	(3.2)	(1.1)	(18.9)	(1.1)	(1.4)	(3.4)
Black County * Year	.7	.1	-8	-.2	-.5	-.8
	(.9)	(.3)	(10.1)	(.3)	(.6)	(.5)
White City * Year	-9.7	-2.1	.3	-4**	-1.9	-4.6**
	(3.3)	(1)	(2.9)	(1.2)	(1.3)	(1.7)
Random Effects	IEP	No IEP	LEP	No LEP	FRL	No FRL
School District	9.5	6.9	0	7.1	3	7.3
	(2.5)	(1.6)	(0)	(1.9)	(1.7)	(1.6)
School Building	14.9	10.9	10.8	12.4	12.6	10.8
	(1)	(.6)	(3.4)	(.7)	(.7)	(.7)
Residual	38.8	29	35.9	33.1	34.5	31.4
	(.3)	(.1)	(1)	(.1)	(.2)	(.1)
Model Fit Statistics	IEP	No IEP	LEP	No LEP	FRL	No FRL
AIC	80,137.8	430,650.6	7,495.8	512,556.5	237,016.7	281,955.9
BIC	80,228.4	430,763.8	7,555.8	512,671.7	237,121.7	282,063.5

IEP vs. No IEP. Students without an IEP score higher on the MAP test on average than students with an IEP, regardless of student type. Black transfer students with IEPs score substantially higher on the MAP test than black city students and black county students with IEPs. When comparing IEP students, black transfer students score 29 points below white county students, while black county students score 35 points below and black city students score 54 points below. Of students without IEPs, black transfer students score 40 points below white county students, while black city students score 51 points below. These results imply that the VICC program is beneficial for black transfer students with or without IEPs because they perform better than black city students in both IEP control groups and better than black county IEP students.

LEP vs. No LEP. Students without a LEP score higher on the MAP test on average than students with a LEP, regardless of student type. Black transfer students without a LEP score substantially higher than black city students without a LEP. Of students without a LEP, black transfer students score 28 points less than white county students in comparison to black city students who score 42 points less. This result reinforces the academic benefits black transfer students receive from their VICC participation.

On the other hand, the achievement gap between black transfer students and white county students grows by 3.8 points each year. This is a slightly smaller achievement gap in comparison to the four point gap between white city and white county students. However, this is a larger achievement gap in comparison to the 1.8 gap between black city and white county students. These gaps do not detract the VICC program's positive effect on black transfer students when compared to black city students. Even though the achievement gap is closing between black city students and black transfer students, the black city students'

average performance is too low to close the gap. In contrast, the VICC program has little to no impact on the achievement gap between black transfer students and white county students. In this situation, the black transfer students' scores are too low to close this gap.

FRL vs. No FRL. The VICC program greatly impacts black transfer FRL recipients. Of FRL students, black transfer students score 8.2 points higher than black county students, 9.2 points higher than white city students, and 20 points higher than black city students on average. In this control group, black transfer students rank second in performance to white county students, to whom they score 10.6 points lower than on average. Additionally, black transfer FRL recipients score slightly higher than black transfer students without FRL. Of black transfer students, those with FRL score an average of 655 points on the MAP test while those without FRL score an average of 656 points.

These results reveal the benefit of the black transfer students' participation in the VICC program. Black city students' scores improve with program participation. Other results disagree with this claim. The scores of black transfer FRL recipients increase by 7.7 points each year, but the achievement gap between them and white county FRL recipients grows by 5 points each year. This lessens the impact the VICC program has on academic growth for black transfer students when compared to white county students. Black transfer students are unable to close this gap if they maintain their average performance.

Time Interaction Model for 2006 Fourth Grade Students

This second time interaction model includes five years of data on 53,482 students. It examines 2006 fourth grade students. By the 2010 school year, these students would have progressed to the eighth grade. The structure of this model is the same as the previous time interaction model. Table 6-1D displays the results.

Table 6-1D: Time Interaction Model for 2006 Fourth Graders, by Control Variable (Communication Arts)

Time Interaction Model, by Control Variable						
General Info	IEP	No IEP	LEP	No LEP	FRL	No FRL
Observations	8,146	45,336	721	52,761	23,162	30,320
Number of Districts	24	24	10	24	24	23
Number of Schools	269	280	34	281	278	257
Fixed Effects	IEP	No IEP	LEP	No LEP	FRL	No FRL
Intercept (White County)	660*** (3)	694*** (2.2)	655.4*** (3.5)	690.4*** (2.2)	676.2*** (1.4)	693.3*** (2.1)
Centered Year	9.5*** (.6)	11.9*** (.2)	9.3 (1.8)	12.1*** (.2)	11*** (.5)	12.8*** (.3)
Black City	-47.5*** (12.4)	-40.4*** (9.7)	-66*** (7.8)	-43.1*** (9.2)	-31*** (4.1)	-42.6*** (8.6)
Black Transfer	-29.3*** (4.4)	-29.5*** (1.3)	-.4 (23.3)	-29.4*** (1.4)	-14.7*** (1.9)	-23.4*** (3.9)
Black County	-26.2*** (1.6)	-20.4*** (.5)	12.9 (13.6)	-21.3*** (.5)	-13.9*** (.9)	-13.1** (.8)
White City	-14.4 (13.8)	-26.3** (9.8)	-6.8 (5.2)	-20.7* (9.4)	-12.5*** (4.4)	-20.2* (8.8)
Black City * Year	-1.9 (1.4)	-1.9** (.5)	11.4* (4.6)	-2.4*** (.6)	-1.5 (.8)	-3.9** (1.3)
Black Transfer * Year	2 (3.1)	0 (1)	11.7 (16.3)	-1.4 (1.1)	-.1 (1.3)	-1.1 (2.8)
Black County * Year	2.2* (.9)	.3 (.3)	-11.3 (8.8)	.6* (.3)	.2 (.5)	-.8 (.5)
White City * Year	9.3* (4.4)	-3.6*** (1)	2.7 (2.7)	-1.9 (1.2)	-.7 (1.4)	-2.2 (1.8)
Random Effects	IEP	No IEP	LEP	No LEP	FRL	No FRL
School District	11.8 (2.7)	9.3 (1.9)	0 (0)	8.9 (1.9)	3.5 (1.9)	8 (1.9)
School Building	13.5 (1)	11.3 (.6)	9.5 (2.4)	12.1 (.6)	12.1 (.7)	13.1 (.8)
Residual	38.5 (.3)	28 (.1)	32.5 (1)	32.3 (.1)	33.6 (.2)	30.7 (.1)
Model Fit Statistics	IEP	No IEP	LEP	No LEP	FRL	No FRL
AIC	82,987.3	431,210.6	7,117	517,343.9	229,096.7	294,298
BIC	83,078.4	431,923.9	7,176.6	517,459.3	229,201.3	294,406.2

The model is statistically significant with a chi-square test of 0.0000. This model explains 63.4 percent of the variation in MAP test scores at the student level, 23.2 percent of the variation in MAP test scores at the school building level, and 13.4 percent of the variation in MAP test scores at the school district level. The black transfer student interaction variable is not statistically significant. Since the model uses their performance to represent the impact of the VICC program, the results of the achievement gaps across student types are absent in this model. However, the impact of the program across student types is present.

IEP vs. No IEP. Across all student types, students without an IEP score higher than students with an IEP. Black transfer students score substantially higher than black city students, regardless of their IEP status. They do not score higher than the other three student types with or without IEPs. Of students with an IEP, black transfer students score 29 points lower than white county students while black city students score 48 points lower. Of students without an IEP, black transfer students score 30 points lower than white county students and black city students score 40 points lower. This is another result that confirms the VICC program is beneficial for black transfer students.

LEP vs. No LEP. Black transfer students have one statistically significant result between these two control groups. Of students without LEPs, black transfer students score 29 points lower than white county students. Black city students score 43 points lower than white county students. Comparatively, black transfer students in this control group score 13.7 points higher on average than black city students. The control group of students without LEPs is the largest black transfer student group. Hence, the analysis suggests VICC program participation is beneficial to the majority of the black transfer students.

FRL vs. No FRL. Black transfer students score substantially higher than black city students on the MAP test, regardless of FRL status. Of FRL recipients, black transfer students score 15 points lower than white county students, while black city students score 31 points lower. Of non-FRL recipients, black transfer students score 23 points lower than white county students, while black city students score 43 points lower. Most notably, black transfer FRL recipients have average test scores similar to black county and white city students. Of FRL recipients, black transfer students score 2.2 points lower than white city students and .8 of a point lower than black county students. The small gap in average test scores suggests that VICC participants score similar to higher performing student types.

Mathematics Results

Three Year Model (Third – Tenth Grades), 2006-2008

Table 6-2A presents the results of the three year mathematics HLM model. This model specifically examines the mathematics MAP test scores of all students who took the MAP test in third through tenth grades between the 2006 and 2008 school year.[7] Three results point to the impact the VICC program has on student achievement. Two of the results are similar to the communication arts three year model. One, none of the variation in MAP test scores occurs at the school district level. Two, school districts with a high percent of transfer students experience growth in their student's achievement. However, the last result differs from the previous two. The black transfer students are the lowest performers of all student types in this model.

[7] First, second, ninth, eleventh, and twelfth grade students are not tested in mathematics.

Table 6-2A: Three Year HLM Results (Mathematics)

HLM Results of Mathematics MAP Test Scores			
General Info	2006	2007	2008
Observations	81,144	79,285	76,169
Number of Districts	24	24	24
Number of Schools	325	327	325
Fixed Effects	2006	2007	2008
Intercept (White County)	687.2*** (5.7)	688*** (5.6)	684.9*** (6.8)
Black City	-28.7*** (5.8)	-32.3*** (5.8)	-34.6*** (5.7)
Black Transfer	-30.9*** (.5)	-42.7*** (2.3)	-34.8*** (.8)
Black County	-31.2*** (.5)	-30.3*** (.5)	-27.6*** (.5)
White City	-6.5 (5.9)	-11.8* (5.9)	-14.4* (5.9)
FRL	-10.4*** (.4)	-10.7*** (.4)	-10.8*** (.4)
IEP	-33.6*** (.4)	-34*** (.4)	-33.1*** (.4)
LEP	-30.9*** (1.4)	-30.3*** (1.5)	-19.2*** (1.4)
Percent District Transfer	1** (.3)	1** (.3)	1.3** (.4)
District Assessed Tax Val.	-3.7E-09* (1.7E-9)	-2.6E-09 (1.7E-9)	-2.8E-10 (1.4E-9)
Student Teacher Ratio	0.2 (.3)	0 (.3)	-0.1 (.4)
Random Effects	2006	2007	2008
School District	0 (0)	0 (-)	0 (0)
School Building	28 (1.9)	28.7 (1.1)	31.1 (1.2)
Residual	37 (.1)	37.5 (.1)	37.1 (.1)
Model Fit Statistics	2006	2007	2008
AIC	818,041.5	801,313.5	768,072.4
BIC	818,171.7	801,434.1	768,201.8

* statistically significant at .05
** statistically significant at .01
*** statistically significant at .00

The model is statistically significant with a chi-square of 0.0000. Across the three year assessment, on average this model explains about 55.9 percent of the variation in MAP test scores at the student level, 44.1 percent of the variation in MAP test scores at the school building level, and none of the variation in MAP test scores at the school district level. All but three variables are statistically significant at the 0.05 level. The district assessed tax valuation and average student teacher ratio are not statistically significant for every year. The white city student variable is not statistically significant in 2006.

White county students are the highest performers. The other student types are compared to them. Students with an IEP, LEP, or FRL have lower scores on average than students without. A student's test score improves in a school district with a high percent of transfer students. In addition, a high average student per teacher ratio improves a student's test score. The district assessed tax valuation has mixed result over the three years.

Each year does not have the same number of observations. There are 81,144 students recorded in 2006, 79,285 students recorded in 2007, and 76,169 students recorded in 2008. While all 24 school districts are present, there are a few missing student records for school buildings. For example, there are 325 school buildings in 2006, 327 school buildings in 2007, and 325 school buildings in 2008. The estimate of the mean score for 2006 is 687.2, for 2007 the mean score is 688, and for 2008 the mean score is 684.9. These are scores in mathematics that equate to students scoring at the advanced level in third grade, at the proficient level in fourth through seventh grades, at the basic level in eighth grade, and at the below basic level in tenth grade.

White county students test scores make up the estimated mean score. On average they score between 685 to 688 points. White city students scored 6 to 14 points lower than -

them on average. Across grade levels this represents third grade students scoring at advanced, fourth and fifth grade students scoring at proficient, sixth through eighth grade students scoring at basic, and tenth grade students scoring at below basic. Black county students score 27 to 31 points lower than white county students on average. This reflects third and fourth grade students at proficient, fifth through seventh grade students at basic, and eighth and tenth grade students at below basic. Black transfer students score 31 to 43 points lower than white county students. These scores reflect third grade students performing at the proficient level, fourth through seventh grade students performing at the basic level, and eighth and tenth grade students performing at the below basic level. Black city students score 29 to 35 points lower than white county students on average. The achievement levels of the black city students match the achievement levels of the black transfer students.

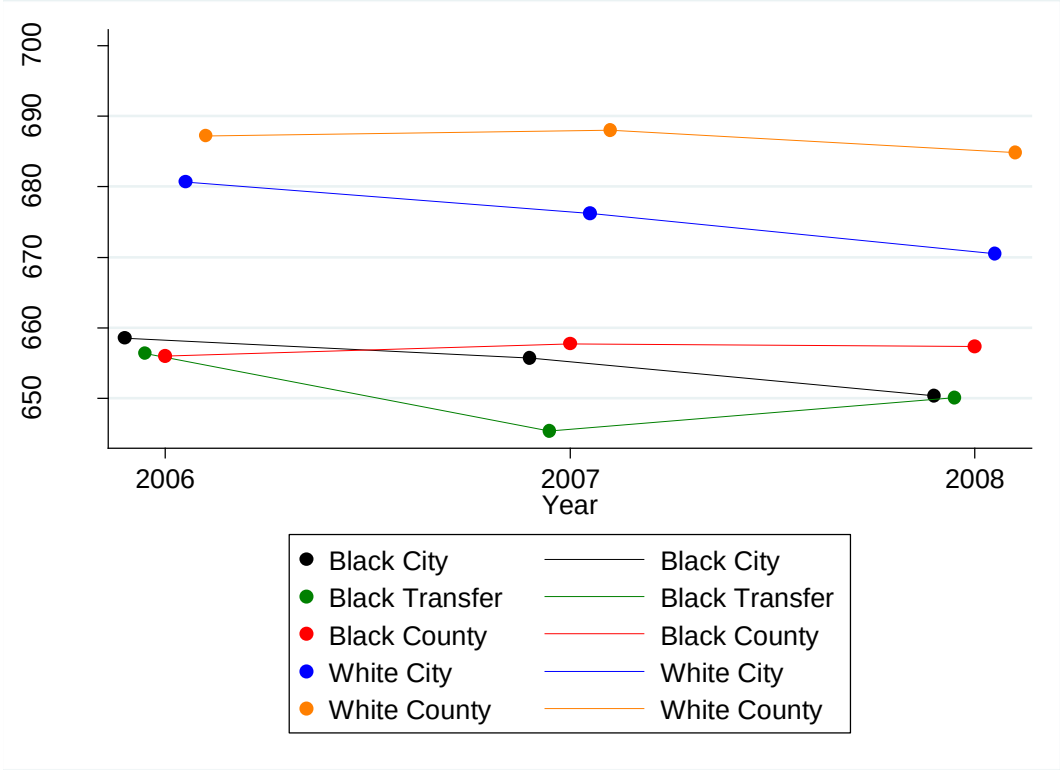
Based on earlier implications from the three year communication arts model, the implications in this model are similar in one instance and not similar in the others. One, there is a larger proportion of white students who score at the advanced and proficient levels than black students on average. Two, one can continue to infer the race of a student and where he or she attends school matters. This is evident from the statistically significant results in this model and the substantial gaps in scores among the five student types. However, three, the black transfer students do not perform better than black city students. Even though the black transfer students and black city students perform in the same achievement level, the black transfer students have substantially lower scores on average in comparison to the black city students. This provides evidence that the program has a negative impact on black transfer student achievement. The time interaction models explain the different ways this impact is experienced.

IEP students score 33 to 34 points lower on average than students without an IEP. LEP students score 19 to 31 points lower on average than students without an LEP, which is a significantly larger range in comparison to the three year communication arts model. FRL students score 10 to 11 points lower on average than students without FRL on average. Across this three year span, all IEP, LEP, and FRL coefficients are statistically significant from zero. These results match the three year communication arts model and confirm that any student who holds any of these three statuses, regardless of student type, will on average have a lower score than students who do not hold any of these three statuses.

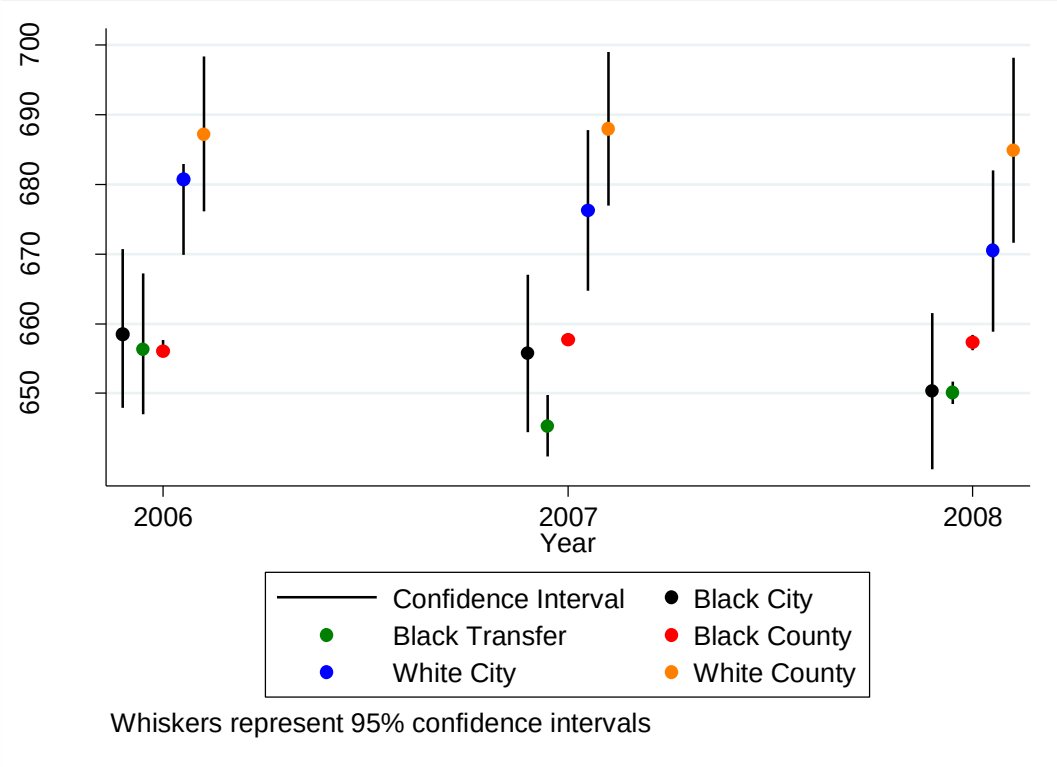
Of the school building and school district level predictor variables, one of the three are statistically significant predictors of test scores: the percent of transfer students in a school district. As a district increases transfer student enrollment by one percent, a student's MAP test score also increases by approximately one point. This result provides evidence of the exogenous impacts the VICC program has on students who attend school districts that accept black transfer students. The student teacher ratio in a building and a district's assessed tax valuation are not statistically significant.

Graph 6-2A plots the expected values of the MAP test scores from 2006 to 2008. Graph 6-2B illustrates those expected values and includes their respective 95 percent confidence intervals. These graphs show from 2006 to 2008, white county and black county students hold pretty stable scores while white city and black city students continuously decline. However, black transfer students have a drastic decline in 2007 and then have a sharp increase in 2008, once more differing in trend from the other student types. A test of the gaps in achievement test scores across all student types confirms every gap is statistically significant.

Graph 6-2A: Gaps in Achievement on MAP Test (Mathematics), 2006-2008



Graph 6-2B: Expected Values of Achievement with Confidence Intervals (Mathematics), 2006-2008



The three inferences from the communication arts graphs agree with these mathematics trend lines. Where a student resides and attends school matters, but there is questionable evidence on how effective the transfer program is in improving MAP test scores. Students who reside in the city have similar trend line patterns to each other and students who reside in the county have similar trend line patterns. The difference in the black transfer students' trend line in comparison to the other student types is highly noticeable. The other student types all have a downward slant with white city and black city students having a sharper decline in scores in comparison to white county and black county students. Black transfer students have the sharpest decline in scores from 2006 to 2007 and a sharp incline in scores from 2007 to 2008. Black transfer students are the only students who recover from any decline in scores on the MAP test in the three year mathematics model. Because of the sharp decline from 2006 to 2007 it is questionable if their trend line provides adequate evidence of a positive or negative effect participation in the transfer program has on student achievement.

In looking at the end results of the achievement gaps among students' 2008 test scores, one might conclude some effectiveness is present. One might infer that the stable decline of the scores in the county and the sharper decline of test scores in the city aid black transfer student's test scores. To elaborate, the black county student's stable scores show their scores passed those of the black city and black transfer students, due to the sharper decline in black city and black transfer students' scores. Therefore, the achievement gaps between the black county students and the black city and black transfer students widen. However, the black transfer students' 2008 increase and the black city students' consistent decrease enabled the black transfer students to recover and end at similar average test scores

of the black city students. This narrows the gap between the black transfer students and all student types. The trend lines in Graph 6-2A also confirm the student type variable is a good gauge of MAP test achievement in St. Louis students from the county and city school districts.

Five Year Model (Third – Eighth Grades), 2006-2010

Table 6-2B displays the results of the five year mathematics HLM model and specifically covers the mathematics MAP test scores from the 2006 to the 2010 school year. This model has the same design as the five year communication arts model. There are two major results. One, black transfer students perform better on the MAP test than black city students, but not consistently. They only achieve higher scores in three of the five years in this model. Two, the impact of a school district's percent of transfer students doubles over time.

The model is statistically significant with a chi-square of 0.0000. This model explains about 65 percent of the variation in MAP test scores at the student level, 34.2 percent of the variation in MAP test scores at the school building level, and approximately one percent of the variation in MAP test scores at the school district level. All but three variables are statistically significant. The white city student variable is not statistically significant in 2006. District assessed tax valuation is not consistently statistically significant across all five years. The student per teacher ratio of a building is not statistically significant for any of the five years.

Table 6-2B: Five Year HLM Results (Mathematics)

HLM Results of Mathematics MAP Test Scores					
General Info	2006	2007	2008	2009	2010
Observations	70,072	68,202	65,521	63,523	62,311
Number of Districts	24	24	24	24	24
Number of Schools	279	280	123	273	262
Fixed Effects	2006	2007	2008	2009	2010
Intercept (White County)	676.4*** (3.8)	678.2*** (3.9)	673.4*** (4.8)	668.3*** (4.8)	671.7*** (5.1)
Black City	-27.7*** (4)	-33.6*** (4.2)	-35.4*** (4.9)	-32.7*** (4.3)	-28.3*** (4.9)
Black Transfer	-26.8*** (5.8)	-41.7*** (2.5)	-31.9*** (.9)	-29.8*** (.8)	-29.3*** (.9)
Black County	-29.3*** (.5)	-29.2*** (.5)	-25.6*** (.6)	-22.9*** (.6)	-22.3*** (.6)
White City	-6.7 (4.2)	-13.3** (4.4)	-15.3** (5.1)	-14.6** (4.6)	-6.6 (5.1)
FRL	-10.8*** (.4)	-10.9*** (.4)	-11.1*** (.4)	-11.5*** (.4)	-13.1*** (.4)
IEP	-31.6*** (.4)	-32.4*** (.4)	-31.4*** (.4)	-31*** (.4)	-31.5*** (.4)
LEP	-29.7*** (1.5)	-28.1*** (1.6)	-18.8*** (1.4)	-22*** (1.5)	-19.5*** (1.7)
Percent District Transfer	0.6* (.2)	0.6* (.3)	0.8** (.3)	1.2*** (.3)	1.3*** (.3)
District Assessed Tax Val.	-3.6E-09** (1.2E-9)	-2.2E-09 (1.2E-9)	-2.3E-10 (1.1E-9)	-1.1E-09 (1.1E-9)	-6E-10 (1.2E-9)
Student Teacher Ratio	0.3 (.2)	0.1 (.2)	.1 (.3)	0.3 (.3)	0.3 (.3)
Random Effects	2006	2007	2008	2009	2010
School District	0 (0)	0 (0)	2.3 (3)	0 (0)	0 (-)
School Building	17.3 (.8)	18.8 (.9)	19.8 (.9)	20 (1)	20.8 (.9)
Residual	36.4 (.1)	37.4 (.1)	36.7 (.1)	36 (.1)	37.6 (.1)
Model Fit Statistics	2006	2007	2008	2009	2010
AIC	703,766.9	688,638.5	659,019.2	637,484.7	629,990.8
BIC	7.3895.1	688,766.4	659,146.4	637,611.6	630,108.4

* statistically significant at .05
** statistically significant at .01
*** statistically significant at .00

This model includes all 24 school districts in each year. However, there are 70,072 students in 2006, 68,202 students in 2007, 65,521 students in 2008, 63,523 students in 2009, and 62,311 students in 2010. As for school building observations, there are 279 school buildings in 2006, 280 school buildings in 2007, 277 school buildings in 2008, 273 school buildings in 2009, and 262 school buildings in 2010.

The estimate of the mean score for 2006 is 676, for 2007 the mean score is 678.2, for 2008 the mean score is 673.4, for 2009 the mean score is 668.3, and for 2010 the mean score is 671.7. These scores reflect the white county students average test scores. They equate to students scoring at the advanced level in third grade, at the proficient level in fourth and fifth grade, at the basic level in sixth and seventh grade, and at the below basic level in eighth grade. Similar to the communication arts model, the estimated mean scores are much lower than ones in the three year models. The absence of the high school student test score ranges is a likely cause.

White city students score 7 to 15 points lower than white county students on average. This range of scores is slightly worse in comparison to the 6 to 14 point range in the three year model. Across grade levels this represents third grade students scoring at advanced, fourth and fifth grade students scoring at proficient, sixth and seventh grade students scoring at basic and eighth grade students scoring at below basic. Black county students score 22 to 29 points lower than white county students on average, which is slightly better than their 27 to 31 point range in the three year mathematics model. These scores reflect third grade students at proficient, fourth through sixth grade students at basic, and seventh and eighth grade students at below basic. Black transfer students score 27 to 42 points lower than white county students, which is a very similar, but slightly better range of points than those in the

three year mathematics model. The achievement levels of the black transfer students are at the basic level for third through fifth grades and below basic for sixth through eighth grades. Black city students score 28 to 35 points lower than white county students on average, which is an almost identical range to the one in the three year mathematics model. More importantly, the black city students' achievement levels match those of black county student.

The previous implications in the three year model are evident here. White students score higher than black students. The student type variable is meaningful to understanding student achievement because it focuses on the race of a student and where he or she attends school. Even more, student achievement levels confirm black transfer student achievement is higher than black city student achievement even though the black city students' average test scores are higher in two of the years.

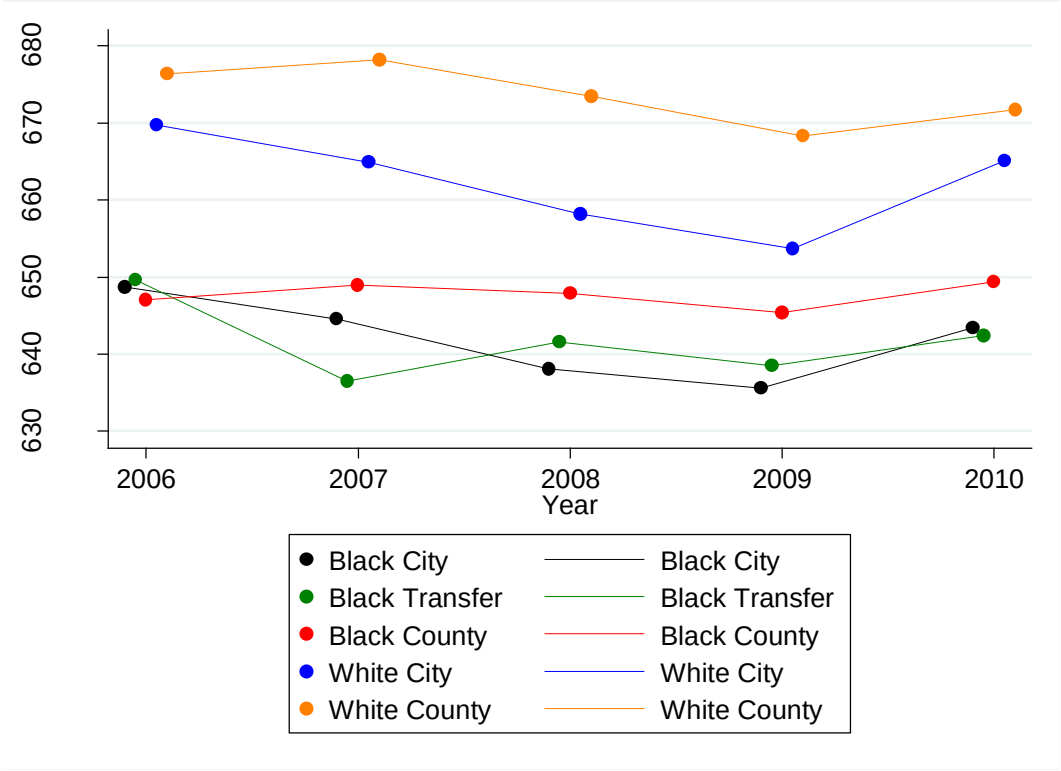
IEP students score 31 to 32 points lower on average than students without an IEP. LEP students score 19 to 30 points lower on average than students without an LEP, which is consistent with the three year mathematics model and inconsistent with the communication arts model. This result could point to the difficulty LEP students have between test subjects. FRL students score 11 to 13 points lower on average than students without FRL. Across this five year span, all IEP, LEP, and FRL coefficients are statistically significant from zero. These results confirm the previous results that any student who holds any of these three statuses, regardless of student type, on average have a lower score than students who do not hold any of these three statuses.

Of the school and district level predictor variables, one is consistently statistically significant: the percent of transfer students in a school district. From 2006 to 2010, as a district increases transfer student attendance by one percent, the average student MAP test

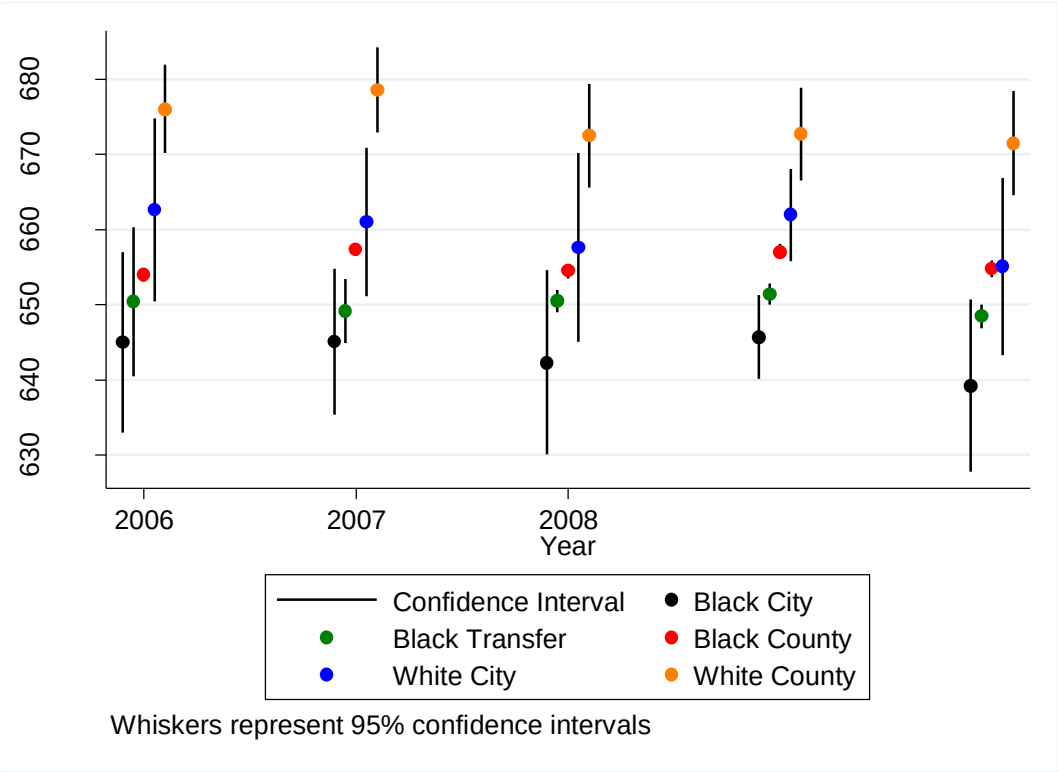
score also increases. This impact on student test scores doubles over the five years as in the five year communication arts model. In this model, it begins at .6 of a point increase and ends 1.3 points. The district assessed tax valuation and student teacher ratio in a building are not statistically significant for any of the years in this model.

Graph 6-2C plots the expected values of the five year mathematics MAP test achievement and Graph 6-2D B illustrates the expected values with their 95 percent confidence intervals. A student's residence and school location continues to have an influence on MAP tests. White and black county students' scores increase from 2006 to 2007, continuously decrease from 2007 to 2009, and then sharply increase in 2010. White and black city students' scores decline from 2006 to 2009 and sharply increase in 2010. Their 2010 increase is a much more drastic increase in comparison to the white and black county students. Black transfer students have a different trend line from the other student types. Their scores drastically decrease from 2006 to 2007, sharply increase in 2008, decrease in 2009, and sharply increase in 2010. Their 2010 increase, like the county students, is not as sharp as the city students' 2010 increase. However, by 2008, the black transfer students' test scores begin to match the pattern of achievement of the county students. The gaps in achievement test scores across all student types are all statistically significant.

Graph 6-2C: Gaps in Achievement on MAP Test (Mathematics), 2006-2010



Graph 6-2D: Expected Values of Achievement with Confidence Intervals (Mathematics), 2006-2010



Whiskers represent 95% confidence intervals

County students and city students have similar trend line patterns, while black transfer students differ from both. In addition, the performance of the black county students reiterates the influence of a student's residential location. The black transfer students' trend line appears to match those of the black and white county students by 2008. Black and white city student trend lines also appear to match. Therefore, even though black transfer students reside in the city, their county schooling has an effect. Again, the transfer program is effective in improving MAP test scores. Even though black transfer student achievement did not maintain its beginning status among the other student types, over time their achievement gap recovers from a drastic widening.

Time Interaction Model for 2006 Third Grade Students

The time interaction models for mathematics have the same structure as the time interaction models for communication arts. This model includes five years of data on 52,789 students. It examines third grade students from the 2006 school year. The analysis follows these students to the seventh grade. Table 6-2C displays the results.

A chi-square test of 0.0000 signifies the model is statistically significant. This model explains 66 percent of the variation in MAP test scores at the student level, 21.2 percent of the variation in MAP test scores at the school building level, and 12.8 percent of the variation in MAP test scores at the school district level. The black county student interaction variable is the only variable that is not statistically significant. The following discussion addresses the impact the VICC program has on black transfer students across the six control groups.

Table 6-2C: Time Interaction Model for 2006 Third Graders, by Control Variable (Mathematics)

Time Interaction Model, by Control Variable						
General Info	IEP	No IEP	LEP	No LEP	FRL	No FRL
Observations	7,862	44,927	758	52,031	23,846	28,943
Number of Districts	24	24	11	24	24	24
Number of Schools	270	277	43	279	276	257
Fixed Effects	IEP	No IEP	LEP	No LEP	FRL	FRL
Intercept (White County)	651.7*** (2.4)	679.3*** (2.1)	654.4*** (4.2)	675.4*** (2.2)	662*** (1.9)	677*** (2.3)
Centered Year	14.7*** (.7)	17.7*** (.3)	13.5*** (2)	17.7*** (.3)	16.6*** (.6)	18.4*** (.3)
Black City	-62.8*** (8.9)	-49.2*** (9.2)	-52.9*** (8.1)	-52.5*** (9.5)	-40.9*** (7.1)	-46.2*** (9.9)
Black Transfer	-42.8*** (4.9)	-39.5*** (1.7)	9.9 (31.1)	-40.4*** (1.7)	-20.9*** (2.1)	-30.3*** (5.1)
Black County	-40.1*** (1.8)	-31.6*** (.6)	-27** (15.5)	-32.1*** (.6)	-26.5** (1)	-21.6** (.9)
White City	-22.5* (10)	-34.6*** (9.3)	-30.2*** (6.4)	-27.1** (9.6)	-23.7** (7.3)	-25.9* (10.2)
Black City * Year	-2.7* (1.4)	-1.4** (.5)	.4 (4.7)	-2.6*** (.5)	-1.5 (.8)	-1.7 (1.3)
Black Transfer * Year	3.3 (3.3)	-2.8* (.5)	-16.8 (20.3)	-3.1* (1.2)	-3.9** (1.5)	-2.8 (3.7)
Black County * Year	-.1 (.9)	.6 (.3)	-4 (10.9)	.2 (.3)	-.1 (.6)	-.3 (.5)
White City * Year	-4.9 (3.3)	-3.6** (1.1)	2.5 (3.1)	-4.2** (1.3)	-1.2 (1.4)	-6.4 (.1.9)
Random Effects	IEP	No IEP	LEP	No LEP	FRL	FRL
School District	8.3 (2.5)	8.9 (1.8)	0 (0)	9.1 (1.9)	6.6 (1.8)	9.5 (1.8)
School Building	13.6 (.9)	10.8 (.6)	12.1 (3.7)	11.6 (.6)	11.7 (.7)	10.3 (.7)
Residual	39.7 (.3)	32.9 (.1)	38.6 (1)	35.9 (1)	36.7 (.2)	34.6 (.1)
Model Fit Statistics	IEP	No IEP	LEP	No LEP	FRL	FRL
AIC	80,620.2	442,292.2	7,744.7	521,155.7	240,081.2	287,823.1
BIC	80,710.8	442,405.5	7,804.9	521,270.9	240,186.3	287,930.7

IEP vs. No IEP. Students without an IEP score higher on the MAP test on average than students with an IEP, regardless of student type. Black transfer students with IEPs score substantially higher on the MAP test than black city students with IEPs. When comparing IEP students, black transfer students score 42.8 points below white county students, while black city students score 62.8 points below. Of students without IEPs, black transfer students score 39.5 points below white county students, while black city students score 49.2 points below. These results provide evidence that the VICC program is beneficial for black transfer students with or without IEPs because they perform better than black city students in both IEP control groups.

There is an achievement gap of 2.8 points between black transfer students without an IEP and white county students without an IEP. This gap rests between the 1.4 point gap black city students without IEPs share with white county students and the 3.6 point gap white city students without IEPs share with white county students. On average, black transfer students increase their MAP test scores by 14.9 points each year. This increase is slightly better than the 14.1 point yearly increase of white city students' scores, but is slightly worse than the 16.3 point increase of black city students' scores. In spite of these narrowing achievement gaps, if these three student types maintain their average performance, the black transfer students will continue to perform better than black city students and poorer than white city students.

LEP vs. No LEP. Black transfer students without a LEP score substantially higher than black city students without a LEP. Of students without a LEP, black transfer students score 40.4 points less than white county students in comparison to black city students who score

52.5 points less. This result reinforces the academic benefits black transfer students receive from their VICC participation.

There is a 3.1 achievement gap between black transfer students without a LEP and white county students without a LEP. This gap in achievement is between the 2.6 point achievement gap between black city and white county students and the 4.2 achievement gap between white city and white county students. If these three student types maintain these average performances on the MAP test, the gaps will narrow, but not close. This is another instance where the black city students' average performance is too low to close their gap with black transfer students., and the black transfer students' scores are too low to close their gap with white city students.

FRL vs. No FRL. The VICC program greatly impacts black transfer FRL recipients in mathematics as well. Of FRL students, black transfer students score 2.8 points higher than white city students, 5.6 points higher than black county students, and 20 points higher than black city students on average. In this control group, black transfer students rank second in performance to white county students, to whom they score 20.9 points lower than on average.

These results reiterate the benefit of the black transfer students' participation in the VICC program for low income students, regardless of the MAP test subject. Black transfer students' scores improve with program participation. Other results disagree with this claim. The scores of black transfer FRL recipients increase by 12.7 points each year, but the achievement gap between them and white county FRL recipients grows by 3.9 points each year. This lessens the impact the VICC program has on academic growth for black transfer students when compared to white county students.

Time Interaction Model for 2006 Fourth Grade Students

The second mathematics time interaction model includes five years of data for 53,190 students. It examines 2006 fourth grade students. By the 2010 school year, these students will have progressed to the eighth grade. Table 6-2D displays the results.

A chi-square test of 0.0000 signifies the model is statistically significant. This model explains 65.4 percent of the variation in MAP test scores at the student level, 24.6 percent of the variation in MAP test scores at the school building level, and 10 percent of the variation in MAP test scores at the school district level. Both the black transfer student interaction variable and the black county student interaction variable are not statistically significant. Therefore, the results of this model only focus on variations in test scores across student types for each control group. It does not assess the growth in achievement.

Table 6-2D: Time Interaction Model for 2006 Fourth Graders, by Control Variable (Mathematics)

Time Interaction Model, by Control Variable						
General Info	IEP	No IEP	LEP	No LEP	FRL	No FRL
Observations	8,116	45,074	732	52,458	22,889	30,301
Number of Districts	24	24	10	24	24	23
Number of Schools	269	280	34	281	278	257
Fixed Effects	IEP	No IEP	LEP	No LEP	FRL	No FRL
Intercept (White County)	664.3*** (2.7)	697.4*** (2.3)	658.6*** (6)	693.5*** (2.2)	676.4*** (2)	696.6*** (2.3)
Centered Year	13.2*** (.7)	16.8*** (.3)	12.2*** (2.3)	16.8*** (.3)	15.3*** (.6)	17.4*** (.3)
Black City	-56.2*** (10.9)	-51*** (9.6)	-76.7*** (10.8)	-53.5*** (9.1)	-38*** (7.2)	-53.4*** (9.6)
Black Transfer	-37*** (4.7)	-39.8*** (1.6)	-18.3 (31.4)	-39.5*** (1.6)	-20.6*** (2.1)	-33.5*** (4.5)
Black County	-35.4*** (1.7)	-29.6** (.6)	4.3 (20.1)	-30.4*** (.6)	-19.8** (1)	-23.5*** (.9)
White City	-22.4 (12.6)	-31.9** (9.7)	-12.7 (8.8)	-28.3** (9.3)	-15.3* (7.4)	-25.1* (9.9)
Black City * Year	-4.1** (1.4)	-.9 (.6)	10.6 (5.5)	-2.1** (.7)	-.3 (.9)	-5.2*** (1.4)
Black Transfer * Year	1 (3.3)	-.8 (1.2)	4.3 (18.7)	-2.2 (1.2)	.1 (1.4)	-2.7 (3.3)
Black County * Year	0 (1)	.5 (.3)	9.7 (11)	.5 (.3)	.5 (.6)	-.7 (.5)
White City * Year	7.4 (4.6)	-1.6 (1.1)	13.2*** (3.6)	-2.4 (1.4)	1.2 (1.5)	-1.1 (2)
Random Effects	IEP	No IEP	LEP	No LEP	FRL	No FRL
School District	10.3 (2.5)	9.2 (2)	0 (0)	8.7 (1.9)	6.6 (1.8)	9 (1.9)
School Building	12.5 (1)	12.8 (.6)	19.5 (3.5)	12.9 (.6)	13.4 (.7)	11.7 (.7)
Residual	40.1 (.3)	33.3 (.1)	37.1 (1)	36.6 (.1)	37.1 (.2)	35.5 (.1)
Model Fit Statistics	IEP	No IEP	LEP	No LEP	FRL	No FRL
AIC	83,586	444,712.3	7,443.6	527,337	230,968.1	302,847.6
BIC	83,677	444,825.6	7,503.3	527,452.3	231,072.6	302,955.7

IEP vs. No IEP. Across all student types, students without an IEP score higher than students with an IEP. Black transfers students score substantially higher than black city students, regardless of their IEP status. Of students with an IEP, black transfer students score 37 points lower than white county students, while black city students score 65.2 points lower. Of students without an IEP, black transfer students score 39.8 points lower than white county students and black city students score 51 points lower. The VICC program is beneficial for black transfer students regardless of whether or not they have learning assistance.

LEP vs. No LEP. As with the communication arts 2006 fourth grade students, black transfer students have one statistically significant result between these two control groups. Of students without LEPs, black transfer students score 39.5 points lower than white county students. Black city students score 53.5 points lower than white county students. Comparatively, black transfer students in this control group score 14 points higher on average than black city students. This confirms that VICC program participation is beneficial to the majority of the black transfer students since black transfer students without LEPs is the largest control group of black transfer students in the model.

FRL vs. No FRL. FRL recipients score lower on average than non-FRL recipients, regardless of student type. Black transfer students score substantially higher than black city students on the MAP test, regardless of FRL status. Of FRL recipients, black transfer students score 20.6 points lower than white county students, while black city students score 38 points lower. Of non-FRL recipients, black transfer students score 33.5 points lower than white county students, while black transfer students score 53.4 points lower. As with the communication arts 2006 fourth graders, black transfer FRL recipients have average test scores similar to black county and white city students. Of FRL recipients, black transfer

students score 5.3 points lower than white city students and .8 of a point lower than black county students. The small gap in average test scores suggests that VICC participants score similar to higher performing student types.

Conclusion

Across the eight models, the VICC program has a greater impact on black transfer students' communication arts test scores than their mathematics test scores. Of the students assessed in the data, the younger students (the 2006 third graders) perform better over time than the older students (the 2006 fourth graders). This might be an indication of the MAP test scoring, but further investigation is necessary to confirm this inference. However, black transfer students almost always perform better than black city students on both MAP test subjects regardless of grade level, which is another testament to their participation in the VICC program.

Seven of the models support the hypothesis that students from the city participating in the transfer program achieve higher scores on the MAP test than city students who do not participate. Additionally, the low number of black transfer students in the 2006 and 2007 school years did not change the outcome of the results. Black transfer students average test scores in these two school years show similar results in the 2008, 2009, and 2010 school years. Because of this consistency in findings, the VICC program shows evidence of being a highly beneficial program to the families of black city students looking to achieve higher.

The time interaction models show the VICC program is highly effective for the majority of black transfer students, especially those with learning deficiencies and whose household has a low socioeconomic status. These two transfer student groups benefit the most from the program with average test score ranks above two or more student types. The

VICC program also proves to have a great impact on black transfer students because they outperform black city students even when the achievement gap between them is narrowing, specifically when comparing the largest control groups of students against each other.

The VICC program shows evidence of being a beneficial program for participating school districts too. The percent of transfer students in a school district has a favorable impact on student MAP test scores. Students who attend a school district that participates in the transfer program fare better on the MAP on average in comparison to those who attend school districts that do not participate in the transfer program. Of the school districts that do participate in the transfer program, the higher the percent of transfer students, the higher the students' MAP test scores are on average. Some may find this result as support for the "brain drain" effect the transfer program has on the city school system. In consideration of this point, students who are better at communication arts make up black transfer students, but they do not fit this description when it comes to mathematics. This finding makes the brain drain response inconsistent when considering the MAP test performances of black transfer and black city students.

Race, residence, and school location matters when it comes to understanding the variations in student performance on the MAP test. White students on average score higher than black students. Students who live in the county on average score higher than students who live in the city. Students who attend county schools score higher on average than students who attend city schools. Therefore, one can expect average student type performance on the MAP test to rank in the following order on average: white county, white city, black county, black transfer, and black city.

Socioeconomic indicators, such as FRL participation, contribute greatly to a student's performance on the MAP test and lead to two major conclusions. One, a student whose family income is at or below the poverty level will not perform as well as those students whose family income is above the poverty level. Two, the higher academic performance of county students (transfer and residential) could be a reflection of their higher socio economic status in comparison to the academic performance of city students (transfer and residential). This conclusion stems from the previous recognition that there are a higher percentage of students in the city that participate in the FRL program than there are in the county school districts. Therefore, a family's financial health has an impact on student achievement.

Educational limitations also have an influence on a student's performance on the MAP test. Three conclusions derive about the impact a student's IEP and LEP status has on his or her achievement. One, a student who needs additional, personalized assistance in school will not perform as well as those who do not need it. Two, the effects of student educational limitations are related to the race of a student. There are a higher proportion of black IEP students than white IEP students. Three, residential location also matters, specifically when it pertains to a student's language barriers. There are a higher proportion of county LEP students than city LEP students.

A district's assessed tax valuation does not have a major impact on a student's MAP test score. At best, the negative relationship between district assessed tax valuation and student performance on the MAP test has a minimal effect. This minimal effect shows the higher a district's assessed tax valuation, the lower a student's MAP test score is on average. The large number of city students might explain why this outcome is such. The city school

district has the largest number of students, one of the highest assessed tax valuations, and lowest MAP test scores on average.

A school building's average student per teacher ratio has changed perspective on what past scholars support. School buildings with higher averages of student per teacher ratio perform better than school buildings with lower averages. Over time, student achievement test scores on the MAP test slightly increase

Assessment of the Methodology

The HLM models measure the explained variation across different levels of observation and provide important directions for future research and action. The majority of the variation in MAP test scores occurs at the student level. Thus, a student's performance is highly attributed to his or her own characteristics, traits, and individual experiences. Additional student level variables might provide greater insights about individual student performance.

A substantial amount of the variation in MAP test scores also occurs at the school building level. Even though the average student per teacher ratio of a school building does not provide statistically or substantially significant results, the manner by which each school building prepares and teaches its students becomes important for considering necessary indicators for future research. Variables that focus on instruction, resources, and building demographics are important here.

Although there is little to no variation explained at the school district level, the percent of transfer students in a school district show school district choices matter.

The time interaction models provide great insights to how the different student types perform on the MAP test over time and the variation in academic achievement gaps across

student types. An improvement to these models considers tracking the length of time a student is a certain type. This would help explain the variation in test scores based on the length of time a student is a program participant.

Comparison to Previous Studies

The results of my models are very consistent with the findings of the six studies discussed in the fourth chapter. There are areas where inconsistencies exist as well. Areas where my results are similar to the previous studies' results include student achievement, academic growth over time, and academic performance based on student types. Areas where my results disagree with the previous studies involve methodological differences and the findings of negative effects.

In all six studies, student achievement results provide evidence that white suburban students are the top performers of all students. Lissitz's (1994) study furthers that conclusion by discovering the highest performers remain the highest performers. All eight models match this result. The white county students are the highest performers and remain as such across all models, years, and testing subjects. Even more, the findings show this is consistent with lower performers too. Academic performance levels seem to maintain across student types. In addition, the models are also consistent with Lissitz's findings that there is a high achievement of black transfer students in comparison to black city students.

The graphs of the larger models and the time interaction models examine academic growth over time. The results from these graphs and models are consistent with Angrist and Lang's (2004) results that find white county students continue to improve academically at a higher rate than other student types do over time. Based on the time interaction models, the white county students do continue to perform better on the MAP test over time in comparison

to the other student types. In addition, Lissitz's (1994) results also discuss parallel trends in achievement for county and city students. He recognizes that county students perform similarly and city students perform similarly regardless of race. The results concur with his results and extend an additional outcome that identifies a changing trend with the black transfer students. The graphs of the larger models exhibit the black transfer students' performance parallels city student achievement in earlier years, and later parallels county student achievement.

When addressing academic performance based on student types, the results are consistent with some of the studies and inconsistent with others. They agree with the Mickelson (2001) study that finds top academic performers are overwhelmingly white and disproportionately black. The white city and white county students outperform the black county, black transfer, and black city students every year. The results are also consistent with the Angrist and Lang (2004) study that finds black transfer students and black county students score similarly over time. Based on the graphs of the larger models, when the black transfer students begin to perform similarly to county students, they perform in the range of black county scores; not white county scores.

On the other hand, the results were mildly inconsistent with the Armor and Duck (2007) study that finds black city students hold a slightly low achievement in comparison to other students. In the analysis, black city students held substantially lower MAP test achievement scores in comparison to the other students.

There are consistencies and inconsistencies with methodology. In comparison to the Lissitz (1994) results, the variables in the models do not remain statistically significant regardless of sample size. Lissitz's change in sample size is minimal in comparison to the

larger changes in sample sizes across the eight models. Larger and smaller sample sizes are specifically used to include and exclude certain grade levels. The analyses is consistent with the Armor and Duck (2007) study that finds school building characteristics are important and lessen the black peer effects. In the larger models, school building characteristics have a sizable impact on the variation of MAP test scores even though the school building level variable did not exude that.

In reference to the negative effects addressed in the previous studies, the results are consistent in part with the Angrist and Lang (2004) study and inconsistent with the Hanushek et al. (2002) study and the Hanushek et al. (2009) study. Angrist and Lang find transfer students do not interrupt the high performance of white county students over time. In the beginning of their time frame, they experience a drop in white test scores that disappears at the end. This is partially consistent with the results. The white county students do not experience a drop in test scores when other students do. In the Hanushek et al. (2002) study, the proportion of transfer students has a negative effect on student achievement. In the results, the percent of transfer students in a school district hold a positive relationship with student achievement. Hanushek's (2009) study finds black transfer students have a negative effect on white and black county students. Even though this is not part of the analysis, the results do not show areas where black county and white county students' achievement is lowered.

Recommendation for Future Research

Because little to no variation is explained at the school district level, one might consider decision making for the transfer program to include school building assessment and planning across all districts. In addition, one level that exists between the school building

and student levels is the classroom levels, which is not part of the research design. Due to the highly sensitive information that comprises classroom data, that information is not present. However, it is necessary for future assessments.

One thing the time interaction HLM models do not take into account is student mobility. Tracking student mobility provides insight into the types of decisions a student's family makes about a student's education. Some students remain in the same student type group the entire five years. Other students move into different student type groups throughout the years. A student's journey throughout the education system is critical to assess as well, especially since the student level of observation explains the most variation in MAP test scores.

Another consideration for change is to address how monetary support impacts student performance. While a district's assessed tax valuation has minimal effect, one might consider the differences among school districts' local, state, and federal funding. Further research might also look into the instruction techniques, curriculum materials, or classroom technology that may cause the student per teacher ratio to have a positive relationship with student performance on the MAP test.

References

Adair, Harriet. 1986. *Trends in School Desegregation: An Historical Case Study of Desegregation in Dayton, Ohio; Denver, Colorado; Los Angeles, California; and Seattle, Washington*. Brigham Young University: Provo, UT

Anderson, Elizabeth. 2010. *The Imperative of Integration.* Princeton: Princeton University Press.

Angrist, Joshua D. and Lang, Kevin. 2004. "Does Integration Generate Peer Effects?: Evidence from Boston's METCO Program" *American Economic Review* 94(5): 1613-1634

Armor, David J. and Duck, Stephanie. 2007. "The Effect of Black Peers on Black Test Scores" *Education Working Paper Archive.* September 12.

Barrett, Malcolm J. 1981. *School Desegregation in the St. Louis and Kansas City Areas: Metropolitan Interdistrict Options.* Washington: U.S. Commission on Civil Rights

Baugh, Joyce A. 2011. *The Detroit School Busing Case: Milliken v. Bradley and the Controversy over Desegregation (Landmark Law Cases and American Society).* University Press of Kansas: Lawrence, KS.

Baum, Howell S. 2010. Brown *in Baltimore: School Desegregation and the Limits of Liberalism* Ithaca: Cornell University Press.

Bell, Derrick. 2004. *Silent Covenants:* Brown v. Board of Education *and the Unfulfilled Hopes for Racial Reform*. New York: Oxford University Press.

Bellamy, Donnie D. 1974. *The Education of Blacks in Missouri Prior to 1861.* The Journal of Negro History, 59 (April) 2: 143-157.

Cannon, Bradley and Charles Johnson. 1999. *Judicial Policies: Implementation and Impact.* Washington, D.C.: CQ Press.

Civic Progress. 1995. *Desegregation: A Report from the Civic Progress Task Force on Desegregation of St. Louis Public School System (Part One).* St. Louis, Missouri. December.

Clark, William A. V. 1988. *Does School Desegregation Policy Stimulate Residential Integration? Evidence from a Case Study. Urban Education.* 23 (1): 51-67.

Coleman, James S. 1996. Equality of Educational Opportunity (COLEMAN) Study (EEOS).

Committee on Quality Education. 1983. *The Quality of Education in the Non-Integrated Schools of the St. Louis Public Schools.* St. Louis: Committee on Quality Education.

Curry, Seretha. 1996. "The Impact of the St. Louis Voluntary Desegregation Program for the Perceptions of Educators in the St. Louis Suburban School Districts." Ph.D. diss. University of Missouri-St. Louis.

Davis, Abraham and Barbara Graham. 1995. *The Supreme Court, Race and Civil Rights.* Thousand Oaks: Sage Publications.

Dwyer, Katherine S. 1993. *Mandatory School Desegregation and Its Impact on Urban Demographics: A Case Study of Denver, Colorado* (Geology Theses)

Godwin, R.K., Leland, S.M., Baxter, A.D., and Southworth, S. 2006. *Sinking Swann: Public School Choice and the Resegregation of Charlotte's Public Schools.* Review of Policy Research, 23(5), 983-997.

Hurst, Charles E. 207. *Social Inequality: Forms, Causes, and Consequences, 6th ed.* Boston: Pearson.

Foote, Edward T. 1981. *An Educational Plan for Voluntary, Cooperative Desegregation of Schools in the St. Louis, Missouri Metropolitan Area.* St. Louis: St. Louis Public Schools.

Frankenberg, Erica and Gary Orfield. 2007. *Lessons in Integration: Realizing the Promise of Racial Diversity in American Schools.* Charlottesville: University of Virginia Press.

Freivogel, William H. 2002. "St. Louis: Desegregation and School Choice in the Land of Dred Scott" Divided We Fail: Coming Together through Public School Choice New York: Century Foundation Press, 209-235.

Grady, Michael K., and Charles V. Willie. 1986. *Metropolitan School Desegregation: A Case Study of the Saint Louis Area Voluntary Transfer Program.* Bristol, Indiana: Wyndham Hall Press.

Gianoulakis, John and Mark J. Bremer. 1994. *The St. Louis Voluntary Interdistrict Student Transfer Program: Its History, Constitutional Underpinnings, and Present Status.* St. Louis Bar Journal. 4 (3): 22, 24-27.

Gusner, William P. and Susan Uchitelle. 1982. *Report of the Committee for an Educational Plan for Voluntary, Cooperative Desegregation in Schools in the St. Louis Missouri Metropolitan Area.* St. Louis: Coordinating Committee for the Voluntary School Desegregation Plan.

Hanushek, Kain, and Rivkin. 2004, 2006. New Evidence about *Brown v. Board of Education*: The Complex Effects of School Racial Composition on Achievement Institute for Research on Poverty. A discussion paper. 1284-1304; Revised March 2006.

Hanushek, Kain, and Rivkin. 2009. "New Evidence about *Brown* v. *Board of Education*: The Complex Effects of School Composition on Achievement" *Journal of Economic Labor*. 27(3)

Heaney, Gerald W., and Susan Uchitelle. 2004. *Unending Struggle: The Long Road to an Equal Education in St. Louis*. St. Louis, MO: Reedy Press.

Jencks, C. 1972. *Inequality.* New York: Harper Books.

Joiner, Robert. 2008. "Grading St. Louis Deseg Program" *St. Louis Beacon,* April.

Jones, Bruce A. 2005. "Forces for Failure and Genocide: The Plantation Model of Urban Educational Policy Making in St. Louis." *Educational Studies,* 37 (February): 6-24.

Jones, Robin R., John Portz, and Lana Stein. 1997. "The Nature of Civic Involvement and Educational Change in Pittsburgh, Boston, and St. Louis." *Urban Affairs Review*, 32 (July): 871-891.

Klugar, Richard. 1975. *Simple Justice: The History of* Brown v. Board of Education *and Black America's Struggle for Equality.* New York: Vintage Books.

Kozol, Jonathan. 2005. *The Shame of the Nation: Separate and Unequal*. New York: Random House.

LaPierre, D. Bruce. 1987. "Voluntary Interdistrict School Desegregation in St. Louis: The Special Master's Tale." *Wisconsin Law Review*, 1987 (November-December): 971-1040.

Lassiter, Matthew D., ed. 2006. *The Silent Majority: Suburban Politics in the Sunbelt South*. Princeton University Press: Princeton, NJ.

Lassiter, Matthew D. and Andrew B. Lewis, eds. 1998. *The Moderate's Dilemma: Massive Resistance to School Desegregation in Virginia.* University Press of Virginia: Charlottesville, VA

Lenhardt, R.A. 2004 Understanding the Mark: Race Stigma, and Equality in Context. *New York University Law Review*. 79: 803.

Lissitz, Robert W. 1991. *Assessment of Student Performance and Attitude: St. Louis Metropolitan Area Court Ordered Desegregation Effort.* A report submitted to the Voluntary Interdistrict Coordinating Council.

Lissitz, Robert W. 1992. *Assessment of Student Performance and Attitude: St. Louis Metropolitan Area Court Ordered Desegregation Effort.* A report submitted to the Voluntary Interdistrict Coordinating Council.

Lissitz, Robert W. 1993. *Assessment of Student Performance and Attitude: St. Louis Metropolitan Area Court Ordered Desegregation Effort.* A report submitted to the Voluntary Interdistrict Coordinating Council.

Lissitz, Robert W. 1994. *Assessment of Student Performance and Attitude: St. Louis Metropolitan Area Court Ordered Desegregation Effort.* A report submitted to the Voluntary Interdistrict Coordinating Council.

Massey, Douglas S. 2004. "Segregation and Stratification: A Biosocial Perspective". *Du Bois Review: Social Science Research on Race* 1(1) (August): 7–25.

Mickelson, Roslyn. 2001. "Subverting Swann: First and Second Generation Segregation in Charlotte-Mecklenburg Schools" *American Education Research Journal* 38(2): 215-252.

Morris, Jerome E. 2004. "Can Anything Good Come from Nazareth? Race, Class, and African American Schooling and Community in the Urban South and Midwest." *American Educational Research Journal*, 41 (Spring): 69-112.

Murray, Dawn, M. 1996. "Voluntary Interdistrict School Desegregation in St. Louis County, Missouri, 1982-1995." Ph.D. diss. St. Louis University.

Norwood, Kimberly Jade. 2012. "Minnie Liddell's Forty-Year Quest for Quality Public Education Remains a Dream Deferred." *Washington University Journal of Law and Policy*. 40 (1): 1-66.

Orfield, Gary. 1978. *Must We Bus?: Segregated Schools and National Policy.* Washington, D.C.: The Brookings Institution.

Orfield, Gary and Susan E. Eaton. 1996. *Dismantling Desegregation: The Quiet Reversal of Brown v. Board of Education*. New York: New Press.

Orfield, Gary and Susan E. Eaton. 1996. *Dismantling Desegregation: The Quiet Reversal of Brown v. Board of Education*. New York: New Press.

Orfield, Gary and Michal Kurlaender, Eds. 2001. *Diversity Challenged: Evidence on the Impact of Affirmative Action.* Cambridge, MA: Harvard Education Pub. Group.

Patton, Richard H. and James H. Laue. 1978. *Resolving the Desegregation Issues in the St. Louis Public Schools.* St. Louis: University of Missouri-St. Louis Center of Community and Metropolitan Studies.

Peltason, J.W. 1971. *Fifty-Eight Lonely Men: Southern Judges and School Desegregation*. Urbana: University of Illinois Press.

Rosenburg, Gerald R. 2008. *The Hollow Hope: Can Courts Bring About Social Change?* Chicago: University of Chicago Press.

Rossell, Christine H. and Willis D. Hawley. 1983. *The Consequences of School Desegregation.* Philadelphia: Temple University Press.

Rossell, Christine H., Davis J. Armor, and Herbert J. Walberg. 2002. *School Desegregation in the 21st Century.* British Library Catalouging.

Savage, W. Sherman. 1931. *The Legal Provisions for Negro Schools in Missouri from 1865 to 1890.* The Journal of Negro History, 16 (July) 3: 309-321.

Skiba, Russell J. et. al. 2006. "Disparate Access: The Disproportionality of African American Students with Disabilities across Educational Environments" *Exceptional Children* 72(4): 411-424.

St. Louis Board of Education. 1988. *Desegregation: 5th Year Report.* St. Louis: St. Louis Post-Dispatch.

Trent, William T. 1997. "Why the Gap between Black and White Performance in School? A Report on the Effects of Race on Student Achievement in the St. Louis Public Schools." *Journal of Negro Education,* 66 (Summer): 320-329.

United States Department of Agriculture. 2015. "National School Lunch Program (NSLP)" *USDA: Food and Nutrition Service.* http://www.fns.usda.gov/nslp/national-school-lunch-program-nslp (March 5, 2015).

University of Missouri, St. Louis, Center for Metropolitan Studies. 1978. *Resolving the Desegregation Issue in St. Louis Public Schools*. (February). Part I.

VICC. 1984. *Annual Report (July).*

Wells, Amy Stuart. 1997. *Stepping Over the Color Line: African American Students in White Suburban Schools.* New Haven, CT: Yale University Press

Wells, Amy Stuart et al. 2009. *Boundary Crossing for Diversity, Equity and Achievement: Interdistrict School Desegregation and Educational Opportunity.* Cambridge, Massachusetts: Charles Hamilton Houston Institute for Race and Justice.

Wilson, D. J. 1997. *Jay Nixon's rush to end the school desegregation plan would result in resegregation and drive city schools in to finance ruins.* The Riverfront Times. (October 1-7).

Court Cases and Legal Documentation

Adams v. the United States 1980. 620 F.2d at 1280

Board of Education of Oklahoma City Public Schools v. Dowell. 1991. 498 U.S. 237

Bolling v. Sharpe. 1955. 347 U.S. 497

Brown v. *Board of Education of Topeka, Kansas.* 1954. 347 U.S. 483

Brown v. *Board of Education of Topeka, Kansas.* 1955. 349 U.S. 294

Constitution of 1875, Article XI, Section 2

Cooper v. Aaron 1958. 358 U.S. 1

Civil Rights Act of 1964. 1964. Pub.L. 88-352, 78 Stat. 241

Crawford v. Board of Education of the City of Los Angeles 1982. 458 U.S. 527

Dayton Board of Education v. Brinkman 1977. 433 U.S. 406

Elementary and Secondary Education Act of 1965. 1965. 20 U.S.C. 6301

Freeman v. Pitts 1992. 503 U.S. 467

Griffin v. Prince Edward County School Board 1964. 377 U.S. 218

Green v. Board of Education of New Kent County. 1968. 391 U.S. 430

Hirabayshi v. United States. 1943. 320 U.S. 81

Keyes v. School District No. 1, Denver, Colorado. 1973. 413 U.S. 189

Korematsu v. United States. 1944. 323 U.S. 214

Laws of the State of Missouri: Revised and Digested, 2vols. (St. Louis, 1825), I

Laws of the State of Missouri (St. Louis, 1847)

Laws of the State of Missouri (St. Louis, 1945)

Liddell v. *Board of Education of City of St. Louis.* 1972. CV No. 72C 100(1)

Liddell v. *Board of Education of City of St. Louis.* 1979. 667 F.2d 643 (8th Cir.).

Liddell v. Board of Education of City of St. Louis. 1980. 491 F. Supp. 351

Liddell, et al. v. Board of Education of City of St. Louis, Missouri et al., (1983). No. 72-100C (4), H(2140) 83. Agreement in Principle, February 22, 1983.

Liddell, et al. v. Board of Education of City of St. Louis, Missouri et al., (1983). No. 72-100C (4), H(2259) 83. State Defendant's response to Settlement Agreement.

Liddell, et al. v. Board of Education of City of St. Louis, Missouri et al., (1983a). No. 72-100C (4) . Agreement in Principle and Settlement Agreement.

Liddell v. Caldwell (Liddell I) 1976. 546 F2d. 768 (8th Cir.)

Limbaugh, Stephen N. 1999. *Desegregation Settlement Agreement.*

McLaurin v. Oklahoma State Regents for Higher Education. 1950. 339 U.S. 637

Meredith v. Jefferson County Board of Education. 2007. 548 U.S. 938

Milliken v. *Bradley.* 1974. 418 U.S. 717

Missouri v. Jenkins. 1995. 515 U.S. 70

Missouri ex rel Gaines v. Canada. 1938. 305 U.S. 337

Missouri Senate Bill No. 360. 1997. 89th General Assembly, 1d Reg. Session (MO).

Missouri Senate Bill No. 781. 1998. 89th General Assembly, 2d Reg. Session (MO).

Parents Involved in Community Schools v. Seattle School District No. 1. 2007. 551 U.S. 701

Plessy v. Ferguson. 1896. 163 U.S. 537

Swann v. Charlotte-Mecklenburg Board of Education. 1971. 402. U.S. 1

Sweatt v. Painter. 1950. 339 U.S. 629

United States v. Fordice 1992. 505 U.S. 717

United States v. State of Missouri. 1973. 306 F.Supp. 739

United States v. State of Missouri. 1973. 388 F.Supp. 1058

Washington v. Seattle School District No. 1 1982. 458 U.S. 457

Appendix: Supplemental Information

Diagram One: Research Design of Communication Arts Content Area

Subjects: Students in St. Louis County and the City of St. Louis.

Independent Variable: Participation in the voluntary transfer program based on student types: black city student, black county student, black transfer student, white city student, and white county student.

Dependent Variable: Student Achievement measured using students' Missouri Achievement Program (MAP) test scale scores of students

Longitudinal Analysis: School Years: 2005-2006 to 2009-2010 (Communication Arts)

Three Level Hierarchical Analysis: Student Level (first level), School Building Level (second level), and School District Level (third level)

Student Level Variables;		
Free & Reduced Lunch (FRL)	Socioeconomic Status	No Separation
Independent Educational Program (IEP)	Learning Status	No Details
Limited English Proficiency (LEP)	Language Status	No Details
School Building Level Variables:		
Student Per Teacher Ratio	Number of students in a classroom per one teacher	
School District Level Variables:		
District Percent Transfer	Percent of transfer students in the district	
Assessed Tax Valuation	Dollar amount of a school district's value	

Comparisons:

1. White County Students vs. Black Transfers Students
2. White County Students vs. Black City Students
3. White County Students vs. Black County Students
4. White County Students vs. White City Students

Hypotheses:

1. Black transfer students will perform better than black city students when compared to white county students.
2. The longer a student participates in the transfer program, the more his/her academic performance will improve.
3. IEP status will hinder academic performance.
4. LEP status will hinder academic performance.
5. FRL participation will hinder academic performance.

Diagram Two: Research Design of Mathematics Content Area

Subjects: Students in St. Louis County and the City of St. Louis.

Independent Variable: Participation in the voluntary transfer program based on student types: black city student, black county student, black transfer student, white city student, and white county student.

Dependent Variable: Student Achievement measured using students' Missouri Achievement Program (MAP) test scale scores of students

Longitudinal Analysis: School Years: 2005-2006 to 2009-2010 (Communication Arts)

Three Level Hierarchical Analysis: Student Level (first level), School Building Level (second level), and School District Level (third level)

Student Level Variables;		
Free & Reduced Lunch (FRL)	Socioeconomic Status	No Separation
Independent Educational Program (IEP)	Learning Status	No Details
Limited English Proficiency (LEP)	Language Status	No Details
School Building Level Variables:		
Student Per Teacher Ratio	Number of students in a classroom per one teacher	
School District Level Variables:		
District Percent Transfer	Percent of transfer students in the district	
Assessed Tax Valuation	Dollar amount of a school district's value	

Comparisons:

1. White County Students vs. Black Transfers Students
2. White County Students vs. Black City Students
3. White County Students vs. Black County Students
4. White County Students vs. White City Students

Hypotheses:

1. Black transfer students will perform better than black city students when compared to white county students.
2. The longer a student participates in the transfer program, the more his/her academic performance will improve.
3. IEP status will hinder academic performance.
4. LEP status will hinder academic performance.
5. FRL participation will hinder academic performance.

List One: List of Hypotheses for Study

Legend:

BCI = Black City Students
BT = Black Transfer Students
BCO = Black County Students
WCI= White City Students
WCO = White County Students

CA = MAP Communication Arts Score
MA= MAP Mathematics Score

FRL = Free and Reduced Lunch
IEP = Individual Learning Program
LEP = Language English Proficiency
STR = Student Per Teacher Ratio
DPT = school district percent transfer student
ATV = District Assessed Tax Valuation

Y6 = 2005-2006 school year
Y7 = 2006-2007 school year
Y8 = 2007-2008 school year
Y9 = 2008-2009 school year
Y10 = 2009-2010 school year

Three Year Models' Hypotheses for Third through Tenth Grade Students

Hypothesis 1: BT participating Y6 through Y8 will have higher CA and MA gains than BCI enrolled Y6 through Y8.
Hypothesis 1A: Y6-Y8 gains will be greater among non-FRL students than FRL students
Hypothesis 1B: Y6-Y8 gains will be greater among non-IEP students than IEP students
Hypothesis 1C: Y6-Y8 gains will be greater among non-LEP students then LEP students
Hypothesis 1D: Y6-Y8 gains will be greater among students in school districts with low STR in comparison to students enrolled in school districts with low STR.
Hypothesis 1E: Y6-Y8 gains will be greater among students in school districts with high DPT in comparison to students enrolled in school districts with low DPT.
Hypothesis 1F: Y6-Y8 gains will be greater among T's enrolled in school districts with ATV in comparison to school districts with low ATV.
Hypothesis 1G: Y6-Y8 gains will be greater among whites than blacks.

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Five Year Model Hypotheses for Third through Eighth Grade Students

Hypothesis 2: BT participating Y6 through Y10 will have higher CA and MA gains than BCI enrolled Y6 through Y10.
Hypothesis 2A: Y6-Y10 gains will be greater among non-FRL students than FRL students
Hypothesis 2B: Y6-Y10 gains will be greater among non-IEP students than IEP students
Hypothesis 2C: Y6-Y10 gains will be greater among non-LEP students then LEP students
Hypothesis 2D: Y6-Y10 gains will be greater among students in school districts with low STR in comparison to students enrolled in school districts with low STR.
Hypothesis 2E: Y6-Y10 gains will be greater among students in school districts with high DPT in comparison to students enrolled in school districts with low DPT.
Hypothesis 2F: Y6-Y10 gains will be greater among T's enrolled in school districts with ATV in comparison to school districts with low ATV.
Hypothesis 2G: Y6-Y10 gains will be greater among whites than blacks.

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Five Year Time Interaction Model for 2006 Third Grade Students

Hypothesis 3: BT participating Y6 through Y10 will have higher CA and MA gains than BCI enrolled Y6 through Y10.
Hypothesis 3A: Y6-Y10 gains will be greater among non-FRL students than FRL students
Hypothesis 3B: Y6-Y10 gains will be greater among non-IEP students than IEP students
Hypothesis 3C: Y6-Y10 gains will be greater among non-LEP students then LEP students
Hypothesis 3D: Y6-Y10 gains will be greater among students in school districts with low STR in comparison to students enrolled in school districts with low STR.
Hypothesis 3E: Y6-Y10 gains will be greater among students in school districts with high DPT in comparison to students enrolled in school districts with low DPT.
Hypothesis 3F: Y6-Y10 gains will be greater among T's enrolled in school districts with ATV in comparison to school districts with low ATV.
Hypothesis 3G: Y6-Y10 gains will be greater among whites than blacks.

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Five Year Time Interaction Model for 2006 Fourth Grade Students

Hypothesis 4: BT participating Y6 through Y10 will have higher CA and MA gains than BCI enrolled Y6 through Y10.
Hypothesis 4A: Y6-Y10 gains will be greater among non-FRL students than FRL students
Hypothesis 4B: Y6-Y10 gains will be greater among non-IEP students than IEP students
Hypothesis 4C: Y6-Y10 gains will be greater among non-LEP students then LEP students
Hypothesis 4D: Y6-Y10 gains will be greater among students in school districts with low STR in comparison to students enrolled in school districts with low STR.
Hypothesis 4E: Y6-Y10 gains will be greater among students in school districts with high DPT in comparison to students enrolled in school districts with low DPT.

Hypothesis 4F: Y6-Y10 gains will be greater among T's enrolled in school districts with ATV in comparison to school districts with low ATV.

Hypothesis 4G: Y6-Y10 gains will be greater among whites than blacks.

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Glossary of Terms

Geographical Assignment – The school district a student is assigned to based on his/her zip code. The schools a student attends are also determined in a similar manner by the board of each school district.

MAP - Missouri Assessment Program

MAP Achievement – The level a student's academic performance is ranked based on his/her performance on the MAP Test. It is an ordinal value that ranges from 1 to 4 and is categorized as Below Basic, Basic, Proficient, or Advanced, respectively.

MAP Scale Score – The score a student receives based on his or her performance on the MAP Test. It is an numerical value ranging from 450 to 910. The content area and a student's grade level dictate the achievement level of the score.

MAP Test – Annual exams used to identify the knowledge, skills, and competencies that Missouri students should acquire by the time they complete high school and to evaluate student progress toward those academic standards.

IEP – (Individualized Educational Program) A program designed specifically to meet the unique educational needs for a child who has a learning disability, as defined by federal guidelines.

Inner-City student – a student who lives in the City of St. Louis and attend school in the St. Louis Public Schools district.

Inner-city Transfer Student – a student who resides in the City of St. Louis and attends, through the voluntary transfer program, a school in one of the St. Louis County school districts. These students are all African American.

Native Student – A student who resides in the school district he or she attends.

Residential Participation – where a student's school district allows the transfer of students to occur, but that student is not enrolled in the transfer process.

SLPS – (St. Louis Public Schools) St. Louis City's school district that covers all of the students who reside in the City of St. Louis.

Suburban School District – County school districts who participate in the voluntary transfer program. There are ten other county school districts which do not participate in the program.

Suburban Student – students who reside in St. Louis County and attend school in their assigned county school district. These students are black and white.

Suburban Transfer Student – A student who resides in St. Louis County and attends, through the voluntary transfer program, a SLPS magnet school in the City of St. Louis.

Voluntary Participation – personal placement in the program. This is where a student is enrolled in the program by the choice of his or her family.

VTS - (Voluntary Transfer Student) Any student who, through the voluntary transfer program, attends school in a district outside of his/her assigned district. VTS students transfer from both the City of St. Louis into St. Louis County school districts and from St. Louis County into St. Louis Public Schools.

VICC – (Voluntary Interdistrict Choice Corporation) The nonprofit corporation the voluntary transfer program became after the 1999 settlement agreement.