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School Accountability and Equal Opportunity in Missouri

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Ed.D. Dissertation

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Abstract

In Missouri, the Missouri School Improvement Plan, generation 5 (MSIP-5) attempts to boil down assessment, attendance, college and career readiness, and graduation rates into a single score (out of 100). Within MSIP-5, Black and Hispanic students are lumped into a super subgroup with English language learners, students in poverty, and students with disabilities. The aggregate of test scores for all in these groups provide the indicators for school success.

There are two concerns with this practice. First, the indicator for subgroup achievement is worth only one-fourth of the points that overall student achievement. In addition, while the highest levels of achievement require the same test scores to obtain, lower levels have lower achievement requirements for the super subgroup in comparison to overall student achievement. The system therefore gives two reasons to value the achievement of White majorities over that of the super subgroup. This study looked to see how Black and Hispanic achievement in relation to White students impacted a school's Annual Performance Report (APR).

Using testing data made public by the Missouri Department of Elementary and Secondary Education (DESE), this study looked at the achievement gaps of Black and Hispanic students compared to White students over a two-year period. Changes in gaps were analyzed for two separate student cohorts (2015/2016 – 2016/2017) for all 8th grade tested subjects to develop a status composite of improvement; and changes in gaps were also analyzed for the same student cohort as they tested in 7th and then 8th grade in English and Math to develop a growth composite of improvement.

The findings from this study demonstrate a lack of transparency in available data, as many schools involved with the study had to be eliminated due to either a lack of reported assessment data or, in the case of eleven schools, an APR score altogether. The findings from this study also suggest that while many schools have success in closing gaps, there is little connection between how well Black and Hispanic students achieve in relation to White students, and the overall APR rating that schools receive. This insignificance raises the need for further research, but also a reexamination of the priorities being set by the school accountability system of Missouri.

Table of Contents

LIST OF TABLES

Chapter 1: Introduction

Background

There was a lot that I was not ready for when I made the move from teacher to administrator. As a teacher, I saw my students every day, took formative assessment data specific to each student, and applied instruction to each student's particular needs. I coached a multitude of sports and activities, stayed late when students needed help, and got to know families as I slowly became a part of the community. Accountability for me extended only as far as making sure my students were successful on the annual standardized tests – and I did not even receive that information until the following year. My career progressed to the point where I felt that the knowledge and experience I had gained as a teacher could help others, and I began to aspire to leadership. As an assistant principal, accountability has come to mean something wholly different.

As an administrator, I receive my building's report card (APR – Annual Performance Report) and based on the results of the previous year's attendance rate and standardized testing scores, I must help produce a building improvement plan. I am no longer responsible for the learning of twenty-five students in an hour of learning, or even one hundred and fifty over the course of seven hours of instruction; but instead, I am counted on to take steps to improve the learning of over seven hundred students housed in my building. Of course, this means nothing to the families that pay my salary, each and every one looks at me the same way they look to their son or daughter's teacher, with the expectation that I will do everything I can for that individual student. Needless to say, when identifying the priorities to try to improve the achievement of all students, the data I use to base my decisions on is critically important.

At the heart of these decisions is making the proper alignment of initiatives and policies. Student performance information received from the state following standardized testing provides a basis to align how standards, curriculum, and assessments are developed in a building (Supovitz, 2009). After all, the goal is being able to demonstrate to my community that their children are smarter at the end of the school year than when it started. My school's APR is what is reported in the St. Louis Post Dispatch, it is what my community will find if they search for my building or my district's state report card. This creates an internal and external pressure for success on the APR.

Coinciding with the need to improve my building, was joining a doctoral cohort which emphasized social justice. Over the course of the three-year program, I was awakened to how ignorant I was to the inequalities between races and communities, and how privileged I was (and foolish to assume that everyone else had the same opportunities I did). To me, leadership means moving everyone forward, and I hoped my education would mean greater opportunities to all students in my school.

As a school leader, and a logical person, I look to the APR and attempt to find deficiencies, areas as a building we need to improve. I find the areas where we scored the lowest, or where we have the most possible points to gain, because therein lie my greatest opportunities to improve. In this search, I constantly remind myself to avoid a cultural deficit lens. Looking at intrinsic deficit as somehow intertwined with cultural or racial differences is unfairly and immorally stacked against African American and Hispanic students (Harry & Klingner, 2007, p. 18). At the same time, if my building, which is populated by an overwhelming majority of White students and teachers, is not meeting the needs of any underrepresented student population, I want to be able to see

that in the data too, so that I can have the conversations and trainings with my staff necessary for the improvement of all students.

I want to believe that these two desires of mine, the achievement of every student, and achievement on the APR, go hand in hand. The current structure of school accountability in Missouri, and potential changes to educational policy at the federal level, however, create concern for me that this might not be the case.

Problem Statement

On February 10, 2017, newly confirmed Secretary of Education Betsy DeVos sent a letter that informed the Chief State School Officer of each state of her intent to follow the Every Student Succeeds Act (ESSA) and provided the "absolutely necessary" elements for each state's accountability plan to meet the ESSA (p.1). There are many elements of the law that attempt to guarantee greater accountability of schools to reach all student subgroups. The Department of Education's (2016) fact sheet on the ESSA states that states cannot replace individual subgroup reporting with a "super subgroup;" and schools with consistently underperforming subgroups must receive a lower summative determination, and more importantly, be targeted for improvement beginning in 2019 – 2020 (p. 2-3). This law was set to go into effect in February of 2017, but changes in federal leadership have already given way to delay and repeal of the law.

On January 20, 2017, the White House Press Secretary issued a press release announcing the freeze of all new regulations, including the ESSA (pg. 1). In February, the United States House of Representatives passed joint resolution 57 (2017) that would render the ESSA to have "no force or effect" (pg. 3). On March 28, 2017, President Trump signed H.J.Res. 57, which nullified the US Department of Education's state

accountability requirements (Berry, 2017). The steps the ESSA would have taken to ensure educational attainment for all students have not only been wiped away, but under the Congressional Review Act, no future policy could be enacted that was "substantially the same" as the law being repealed (Carey, Dolan, & Davis, 2016). At a minimum, this potential change in course for federal law demonstrates the need for the state of Missouri to take control of its own accountability systems and hold all of the schools in the state to the high standard of ensuring that every student achieves. There is plenty of evidence to suggest that schools in Missouri are not doing so.

Missouri applied and received a waiver from the No Child Left Behind's (NCLB) system of accountability in 2012. To receive the waiver, a state must have developed their own system, which is currently known as the fifth cycle of the Missouri School Improvement Plan (MSIP-5). Ostensibly, schools seem to be thriving in the new system. Since its inception in 2013, Missouri schools have scored better and better on the Annual Performance Report (APR) – in 2015, nearly 70% of school districts in the state received at least 90% of the points possible on the APR (Crouch & Block, 2015). Part of the Improvement Plan called for the creation of a super subgroup which looks at the scoring of a school's or district's Black, Hispanic, English Language Learners, disabled, and impoverished students as an aggregated score. This score is used to hold schools and districts accountable for ensuring equity of achievement. In 2015, despite the success of school districts, the percentage of all students testing proficient or advanced on state standardized tests was at least thirteen percent higher than the percentage of students in super subgroup (Singer & Lloyd, 2015).

Rationale for Study

It is not possible that the students who compose the super subgroup are somehow cognitively inferior to white students. According to Weissglass (2001), "many of the assumptions, values, and practices of people and institutions hinder the learning of students of color" (p.49). A meta-analysis conducted by Tenengaum and Ruck (2007) found effects that suggested that teachers "held more positive expectations, and provided more positive referrals and fewer negative referrals, and provided more positive and neutral speech for European American children than for African American and Latino/a children" (p. 267). The perpetuation of this gap is the rationale of this study. It simply is not moral for any school district to continue business as usual when entire groups of students are being left behind. This study hopes to find out if the current MSIP-5 system in Missouri is guilty of just that.

There are two key data points that introduce concern. The first is the amount of the APR that super subgroup achievement accounts for in a school or district's APR. Regular student achievement (across ELA, math, science, and social studies) account for fifty-six points calculated into a district's APR, super subgroup achievement accounts for only fourteen. Simply by how points are awarded, school districts already have four times the incentive to focus initiatives and school improvement plans for their non-subgroup students.

There is another area of concern with the scoring of student achievement and how that relates to scoring on the APR. The MSIP-5 system combines both status and growth elements for student achievement. First, there are four status categories: Floor, Approaching, On Track, and 2020 Target (from the least amount of points awarded to greatest). Meeting the scores for each of these levels grants a district a certain percentage

of the APR points possible in the categories of student achievement or super subgroup achievement. While all students are held to the same standard for the highest level, the 2020 Target, super subgroup students are held to a lower standard, across the board, to meet the second, On Track, tier. For example, according to the 2016 Comprehensive Guide to the MSIP-5, published by the Missouri Department of Elementary and Secondary Education, overall student achievement must have scored between a 368.7 – 385.6 MPI to be On Track in ELA testing in 2016, super subgroup students could score between a 348.3 – 385.6 MPI to be On Track (p. 68). There are two concerns with this. One, there is the notion that super subgroup students are not being held to the same standards as White students, which suggests a belief they are not as capable. The English language learning students and students with disabilities subgroups portion of the super subgroup might be expected to be held to a lower standard. However, the fact that Black and Hispanic students are included into the same super subgroup creates, at least, the appearance that they cannot be expected to achieve at the same level as White students. More directly applicable to the rationale of this study is that since super subgroup students are held to a lower standard, even more incentive is provided to school districts to focus on non-subgroup students, because they have a higher standard to attain.

This second concern is compounded by the Progress element of the MSIP-5 system. MSIP-5 looks at a three year period of time to determine progress. If the average MPI score in a subject/grade level over the most recent two years is higher than the average MPI score in the same subject/grade level in the oldest two years, that district can qualify for progress points that are added to the status score. This progress is also broken down into four levels based on the growth that is demonstrated: Floor (<1%),

Approaching (1%-3%), On Track (3%-5%), and Exceeding (>5%). This further de-incentivizes districts to focus on the specific instructional needs of subgroup students because of the difference in the points needed to move levels. For example, a school in the Status category "Approaching" for student achievement in mathematics would need seven points to receive all of the points possible on the APR. That would necessitate the school to score the highest progress category, "Exceeding," to make those points up. However, if the same school was in Status category "Approaching" for super sub-group achievement for mathematics, it would only two points to receive all of the points possible on the APR. This could be done by scoring into the Progress second tier, "On Track," to make those points up. Across the board, the students in the super subgroup are being held to lower standards which automatically gives school districts reason to prioritize non-subgroup students.

In December of 2015, President Obama signed the Every Student Succeeds Act (ESSA) which required that all students in America be held to high academic standards (U.S. Department of Education, 2017). In June 2015, DESE submitted a waiver to keep the MSIP-5 system as the state's accountability system. In DESE's waiver, it is noted that "while it is possible to achieve a relatively high score within Missouri's system of accountability while earning no points or just a single point on the [super subgroup] achievement indicators, these occurrences are quite rare" (p. 67). However, of the 1842 schools listed as receiving at least 70% of the possible APR points (and therefore achieving the same percentage as full accreditation for districts), 461 schools (25%) received half or less of the super sub-group achievement points in mathematics (DESE,

2015). Simply put, for 1 in 4 fully accredited schools, there was a real gap in school success (as defined by full accreditation) and super subgroup success in mathematics.

All of this points to good reason to examine the success of schools, in terms of their summative APR scores, in conjunction to the gap between student achievement and subgroup achievement. As schools' continue to improve their standing, is it done through achieving the standing of all students? This is the question that serves as the justification for this study.

Significance of Study

There is a large body of research done on different philosophies and practices surrounding educational accountability systems, and an equally rich examination of achievement gaps to include the causes and successful steps taken by schools and districts in reducing those gaps. What this study will contribute to both of these discussions is how they intersect, and more specifically, how they intersect in the state of Missouri.

The conclusions of this study will give insight into the current state of accountability and equity of opportunity for all students in the state of Missouri. More importantly, this study will demonstrate whether the system, as currently constructed, gives schools and districts adequate accountability for the achievement of all students, or if the MSIP-5 system in Missouri gives schools and districts the ability to demonstrate improvement on their own summative evaluations without having to improve the achievement of all students. The insights from this study will provide policy guidance at a time when Missouri, and all states, may find themselves with more control over the design of accountability systems.

Research Question

The central research question that this study attempts to answer is if the current school accountability system in Missouri is effective in closing middle school achievement gaps for subgroup students. This study will also address the following sub question:

1. Are Missouri middle schools able to achieve higher summative evaluations in the MSIP-5 APR calculation regardless of the success of Black/Hispanic students in relation to White students?

Definitions

APR – Annual Performance Report. Each district, and each school within each district, receive a score out of 100 possible points based on the success indicators defined in the MSIP-5 system. A district's accredidation is based upon the percentage of points earned on the APR. Achieving 70% or more of the points possible fully accredits a district.

Missouri Assessment Program (MAP) – This is the system of standardized tests for schools in Missouri. There are grade level exams for grades 3-8 and End of Course exams for varying subjects in high schools.

Middle School – School buildings that house grades 6-8.

MPI – MAP Performance Index. The performance of a group of students is recorded as MPI. Each student receives a point value based on how they achieve on a state test. The sum of those point values, divided by the number of reportable students, provides a composite score between 100 and 500.

MSIP-5 – Missouri School Improvement Plan, 5th Cycle. This is the name of the current accountability system for districts and schools in Missouri. Points are awarded to a district based on academic achievement for all students, academic achievement for students in the super subgroup, college and career readiness, attendance, and graduation rate.

Super Subgroup – A group that is created to account for numerous under-achieving groups of students in a school accountability system. In Missouri, the super subgroup consists of Black, Hispanic, English Language Learning, Disabled, and students on the Free or Reduced Lunch Program.

Chapter 2: Literature Review

Introduction

There are several criticial bodies of knowledge to examine prior to discussing the methodology of this study. This chapter will take a look at the history of school accountability both nationwide, and in the state of Missouri, to establish the basis for how the current systsems of accountability came to be. Alongside the history, attention will also be given to the purpose of school accountability systems and the mechanisms that are used within them to achieve this purpose. This examination will pay particular attention to the use of super subgroups within accountability systems and the potential benefits and disadvantages. Since all accountability programs are based on some degree of student status achievement, or student growth achievement, or a combination of the two, this chapter will also review the literature that exists on the advantages and pitfalls of each approach.

After reviewing school accountability systems, this chapter will then turn its attention to the achievement gap. Particular focus will be placed on how the gap is created and perpetuated, and to a lesser extent, a review of documented instances of how districts and schools have proven effective in closing the gap. To conclude this chaper, a brief summary will tie together all of these different paths of review to establish the foundaton for both the purpose of this study suggested in the introduction, and the methodology that will follow in chapter three.

A History of School Accountability Systems

In the United States.

Though schools have kept internal statistics on students since the late 19th century,

it was not until after World War II, amid debates of the state of public schooling, that government agencies adopted test scores as a way for the public to judge the the effectiveness of schools (Dorn, 1998). In 1965, The Elementary and Secondary Education Act (AESA) was passed as a vehicle to provide federal financial support to public schools, with the expressed purpose to "improve educational opportunities for children from lower socioeconomic backgrounds" (Taylor & Christ, 2015, p. 420). By the 1980's this wanned, as president-elect Reagan had won an election campaigning for a reduced emphasis on educaiton and even the abolishment of the Department of Education (Guthrie & Springer, 2004). Instead, the opposite happened. The 1983 report, *A Nation at Risk*, from the National Commission on the Excellence in Education, brought student achievement back into the forefront of education discussion. Though the report was wrong in its use of student achievement data to suggest that American preeminence was on the decline; it reinforced the use of student performance data as the standard for determining the effectiveness of school systems (Guthrie & Springer, 2004). On the heels of this report, and the conclusions, however flawed, it made, continued support for the use of standardized tests met political will to begin putting accountability into law (Suspitsyna, 2010).

The accountability laws that followed took very different paths. President Clinton signed the Goals 2000: Educate America Act in 1994, which provided grants to states to develop their own standards and assessment policies; however, the lack of accounatability on states to impliment with fidelity caused the act to not be renewed (Superfine, 2005, p. 12). The lingering concern for America's place in the world, and the need to hold schools accountable for this, federally coincided in 2002 when President

Bush signed the No Child Left Behind Act (Hursh, 2007, p.499).

Under the No Child Left Behind Act (NCLB), all students in designated grades would be required to take standardized tests – and those results had to be public informaiton. Whereas there were no mandated accountability measures in Goals 2000, NCLB held that schools had to meet annual performance targets (AYP) in English Language Arts and Math until 2014, when 100% of students were expected to be proficient – with funding consequences if the performance targets were not met. Especially noteworthy was that these consequences were not just for the entire body of students but also for the reporting of achievement for marginalized students such as English language learners, Black and Hispanic students, and those with special needs – something that was simply never the case on a national level previously (Guilfoyle, 2006, p. 8). There were signs of some success. According to Perle, Moran, & Lutkus (2005), three years after the law was enacted, the racial achievement gap on the NEAP for elementary students in both reading and math was the smallest in US history.

Despite this success, states, and the schools within them, quickly became concerned about the ability to meet increasingly challenging performance goals. By the summer of 2005, all but three states had already sent in requests to restructure assessment designs with the intention to reduce the requirements for meeting AYP (Porter, Linn, & Trimble, 2005). In September 2011, President Obama's administration allowed states to apply for waivers to replace NCLB with their own accountability system. The waiver's ability to replace the 100% goal of the NCLB with other "ambitious but achievable" goals created concern due to the lack of standardization across states (Kober & Riddle, 2012, p.3). This creates a need to examine each state's approach to school accountability

separately.

Missouri before, during, and after NLCB.

When the state of Missouri received its waiver from United States Department of Education, state officials were optimistic. Maggie Vaneven, DESE's assistant commissioner told the St. Louis Post Dispatch, "Our system will focus on improvement, not just labeling" (qtd. in Block, 2012). The Missouri School Improvement Program has come a long way from its origins in 1990, and now in its fifth cycle, the program is the accountability and accrediting source for the entire state.

Cycle 1 – 1990/1991 – 1995/1996.

The Missouri State Improvement Program took effect in the 1990 – 1991 school year, and in this first cycle, it looked very different than the system that schools are currently dealing with. This system consisted of a team of field educators and Department of Elementary and Secondary Education (DESE) staff who conducted onsite reviews of schools. Students and staff received a survey ahead of the visit, and during the visit, the onsite team would conduct interviews of teachers, administrators, and even members of the board. Following the visit, the district would receive a report of strengths and concerns, as well as some resources available from the state (DESE, n.d., p. 1).

Cycle 2 – 1996/1997 – 2000/2001.

The process changed, into the second cycle, after the 1993 passing of The Outstanding Schools Act. The law required DESE to set academic achievement standards to be measured by performance assessments. Another milestone of the second cycle was that the new law required DESE to first identify low-performing schools and then gave the state agency the authority to intervene at the building level. To provide

resources for this intervention, the law also created regional professional development centers (RPDC) to provide support during implementation of reform (DESE, n.d., P.1).

Cycle 3 – 2001/2002 – 2005/2006.

The No Child Left Behind Act of 2001 required that all students would be tested in language arts and math by the 2005-2006 school year. By the 2007 – 2008 school year, science would have to be tested at least once in elementary, middle, and high schools. Schools would need to meet state-determined proficiency levels on these tests or face punishments such as giving students options to attend other schools and outside corrective measures including potential changes to school boards (Editorial Projects in Education, 2011).

The third cycle of MSIP also had two major impacts as it measured district performance in test results in content areas and on the ACT test, enrollment in Advanced Placement courses, college placement, attendance, and dropouts; these results were then compiled into an Annual Performance Report (DESE, n.d., P.2). The purpose of these reports were to help districts identify issues within their districts, as well reward successful districts with continued accreditation. For districts that were not accredited, or were at danger of not being accredited, DESE staff teamed up with the RPDC's created in the second cycle to provide assistance in the form of SUCCESS teams (DESE, n.d., P. 3).

Cycle 4 – 2006/2007 – 2011/2012.

In one way, the fourth cycle of MSIP was not much different than the third cycle: standards were not changed measurably. The treatment of districts as a result of how they met those standards did, however. Resources were focused on districts with multiple years' worth of declining APR's, especially those in danger of losing

accreditation (DESE, n.d., P.3). In response to these low APR's, districts were required to complete Accountability Plans. As an example, St. Louis Public Schools submitted an Accountability Plan in response to the 2008/2009 MSIP review and essentially had to answer three questions: 1) steps the district will take within two years to fix issues identified in the review; 2) steps the district will take to regain accreditation; and 3) how will the long range plan be supported (St. Louis Public Schools, n.d.). Districts on these plans had to report regularly on their progress to DESE and if success could be demonstrated, districts could be moved off of their plans.

Accountability Plans from DESE were not the only concern for schools during the fourth cycle of MSIP. Districts across the country were finding it difficult to meet the increasing Adequate Yearly Progress dictated by No Child Left Behind, and Missouri was no different. In the 2011/2012 school year, the year that Missouri received its waiver from No Child Left Behind, only 18% of districts were meeting the required goals (Block, 2012). The fifth cycle of MSIP was the approved system for the state of Missouri to receive the waiver from No Child Left Behind.

Cycle 5 – 2012/2013 – Present.

The current cycle of MSIP is much different from all previous cycles. APR is now determined by a number of factors which add up to 140 possible points. Representing half of the total points available, student achievement is now tracked by looking two different groups: academic achievement and subgroup achievement (56 points for academic achievement/14 points for subgroup achievement). College and career readiness is worth a total of 30 points by looking at the percentage of graduates who met state standards on approved tests for readiness (SAT,ACT,

ASVAB,COMPASS-10 pts); the percent of graduates reaching the DESE approved qualifying score on Advanced Placement, International Baccalaureate, Technical Skills Attainments tests, or dual enrollment courses (10 pts); and through the percentage of graduates who are in college, the military, or career training within 6 months of graduating (10 pts). Likewise, high school readiness is worth 10 points by determining the percentage of students who earn at least one proficient score on a high school assessment while in 8th grade (this measure only counts for school districts that do not contain high schools). Attendance contributes 10 points, and graduation rate is worth 30 points.

The current cycle of MSIP has four stated policy goals. It aims to define what being college and career ready means, identify districts that need improvement as well those whose students achieve at a high level, provide regular and transparent communication, and continuously provide incentive for districts to improve and innovate (DESE, 2015). The next cycle of MSIP (MSIP-6), at the time of this study, is currently under development by DESE and there is no definite time table for when it will replace MSIP-5.

The Purpose of School Accountability Systems

The path to equity in accountability systems begins with the choice of how the state accountability system is set up. According to Carlson (2006), this centers around two foundational questions: "1. How good is this school? 2. Is it getting better?" (pg. 1). Table 1.1 shows how these questions can then be sub-divided by the goals of achievement and effectiveness.

Table 1.1
How achievement and effectiveness are determined by accountability systems.

	Status (How good is this school?)	**Change (Is it getting better?)**
Achievement	What is the achievement level of students?	Is the achievement level of this school improving?
Effectiveness	How much do students learn while they are in school?	What is the change in learning from how they did last year?

Source: Carlson (2006)

Though each block is not mutually exclusive as a basis for accountability, placing the focus on any one of the sub-questions builds bias and inferences in regards to the state it is being applied to. For instance, an accountability system that is based on achievement-status, assumes that the goal of accountability is to remove the problem of low-achieving schools by demanding they reach a minimal level of performance (Carlson, 2006).

The assumptions within an accountability system are not the only points of review for accountability systems. Polikoff et. al (2013) identify four areas to look at when determining the strength of accountability systems: construct validity, reliability, fairness, and transparency. These areas must be under constant review by state Departments of Education because of the potential unintended consequences of teacher retention and penalizing schools for factors they cannot control (Polikoff et al, 2013). This review is critical because accountability systems are state-wide, and there are vast differences in the historic, demographic, and socio-economic make-up of communities. Without review, an accountability system could disproportionately cause difficulties for some schools and communities more than others.

Also important in any accountability system are what will constitute the measures of proficiency for schools and districts. According to Allen (2016), accountability

systems must have two levels: system-level measures and evaluation of teaching/assessment of learning. Standardized test scores, while common as system-level measures, have weaknesses because they are not "organically linked to specific features of the activity of teaching..and [only] generic demand that schools 'raise scores'" (Allen, 2016, p. 22). Foley et al. (2008) highlight the shortcomings of standardized test scores by arguing that the ultimate proof of education provided is not evidenced by standardized test scores but in success after high school ends. These post-high school outcomes (employment, college enrollment and completion) serve as lagging indicators that demonstrate a school district's effectiveness. There are also leading indicators of education effectiveness. Leading indicators are defined as "systematically collected data on an activity or condition that is related to a subsequent and valued outcome" (Supovitz, Foley & Mischook, 2012, p.6). This data can take the form of student grades, course completion, or attendance; success on these measures can lead a school or district to believe that it is having success in educating its children. Leading indicators, accountability systems, and lagging indicators work together to provide a complete system to answer Carlson's fundamental questions: how good is this school? and is it getting better?

Growth vs. Status.

There are a number of different ways to find the answers to Carlson's questions, but in regards to accountability, answers gravitate around two sepearate models: status and growth. Betebenner (2009) defines status models as those that "qualify student performance solely in terms of current status (i.e., achievement level) of the student" (p. 2). This type of accountability model holds an intinsic motivator for schools because all

schools will naturally prefer reporting higher scores (Hanushek & Raymond, 2002).

The issue with status models of achivement is that they fail to consider a student, or group of students' history in its determination of proficiency. According to Betebrenner and Linn (2010), "a school that makes AYP may have students who started the year with relatively high achievement as the result of favorable home conditions and support whereas a school that fails to make AYP may do so because its students start the year with low achievement…" (p. 15). This weakness in status models has led to the creation and adoption of growth models, or at least growth elements, to state accountability systems.

Called growth or value-added models, these accountability systems look towards gains students make over time, instead of where students are at any one specific time, as a more effective way of determining if a school has done a good job or not (Ready, 2013). Growth models have taken on two forms. They are either growth-to-standard formats that use statistical modeling to predict whether a student's growth will likely put them on track to determined status level (i.e. proficient), or student growth percentile scores that track current achievement against others with similar achievement (Betebenner, 2008). In considering school quality, growth is important because so long as it accounts for students' previous levels of achievement, it can provide a more equitable basis for comparison than status models (Betebrenner & Linn, 2010).

There are arguments against the use of growth models as well. On a surface level, holding schools accountable only for the learning that takes place while the student is at school (the growth achieved there), allows for a student that enters a school at a non-proficient level to leave that school still at a non-proficient level (Stone & Lane, 2003).

While educators may see growth as a victory, labels that come from state testing matter to the self-efficacy of students, especially to those who see themselves going to college (Papay, Murnane, & Willet, 2011). For that student, a negative label may have a more lasting effect than simply determining a school's performance. In addition to these concerns, researchers have also found both positive relationships (Stanovich, 1986) and negative relationships (Wright, Horn, & Sanders, 1997) between intial achievement performance and subsequent growth. So while growth models may serve as a more accurate accounting mechanism for school value added, it is still impossible to remove the intrinsic charactersists of the students from that growth.

The Super Subgroup.

Under NCLB, a school or district was held to yearly progress goals for every student population, but also for each of several subgroups. One of the major changes the MSIP-5 made from NCLB was accountability of disadvantaged groups. Where the NCLB required districts to report scores separately, the MSIP-5 has created a super subgroup that lumps achievement levels of students that qualify for at least one of the following: free/reduced lunch, racial/ethnic background, English language learners, and students with disabilities.

The creation of this subgroup has led to a number of concerns. The most prominent of which is that since disaggregated subgroup achievement was one of the central purposes of NCLB, combining all/several of them will mean that specific groups of individuals will no longer receive differentiated interventions (Kober & Riddle, 2012). In this way, the original concern, masking different performances among subgroups through averages, has the potential of reappearing (Hall, 2013). This concern has been

voiced by many. When the US Department of Education announced the availability of waivers to states, a number of civil rights organizations including the Congressional Black and Hispanic Caucuses and the Committee on Education and the Workforce wrote an open letter to Department of Education Secretary Arne Duncan voicing concerns over the super subgroup. Specifically, the letter cited worries that the possibility existed for students to fall "through the cracks of averages and ambiguities" (Miller, 2014, p.1).

A Brief Review of the Education Gap

The role of accountability systems is central to the issue of racial achievement gaps. Accountability systems have been tied to multiple impacts, such as student learning, where strong accountability systems have been shown to have a positive relationship to higher student outcomes on nationwide math assessments – even across students of different races (Carnoy & Loeb, 2002). The extent of the increase is not universal, however, and because White students typically make higher gains than Black or Hispanic students upon implementation of accountability systems; as a result, the racial achievement gap widens (Hanushek & Raymond, 2004). Even when comparisons are adjusted for income, there are still achievement gaps measured in standardized testing, dropout rates, Advanced Placement enrollment, and college enrollment (Ladson-Billings 2006). And though progress was being made following desegregation, since 1990, progress in closing the gap, particularly for African-American students, has leveled off (Morris & Perry, 2016).

Because it is impossible for achievement to be based on race, theories of potential causes of the achievement gap is something that has been greatly studied, but also greatly un-unified. Important to consider is that the achievement gap is not a Black-White, or

Hispanic-White phenomenon. In the early 1900's, immigrating Europeans also demonstrated achievement gaps in comparison to native-born Americans (Lieberson, 1980). Also, during this time period immediately following Reconstruction, the amount of funding for African American schools fell to only 30% of what was being spent on White schools (Norman et al., 2001). This created a legacy of inequality that set the stage for today's achievement gap. Other contributing factors of inequality put forward to help explain the persistence of the achievement gap today have included a gap in teacher quality (Boyd et. al, 2008), a lack of equity in early childhood summer programs (Phillips, Crouse, & Ralph, 1998), a disparity in the application of discipline polices, in particular out of school suspension (Skiba et al., 2011), and institutionalized racial policies and climate (Weissglass, 2001; Mattison & Aber, 2007). Likely, all of these and other contributing factors lead to the current state of the achievement gap, and much more comprehensive policy than standardized testing will be required in order to make significant gains in closing the gap (Kober, 2001).

Even more concern has been raised about basing systems of accountability on standardized tests. According to Giroux and Schmidt (2004), "while testing has become a centerpiece of educational reform, there is nothing to address how student achievement and learning are linked to the distribution of resources, power and politics" (p. 214). The arbitrary nature of cut-scores used to assign a student's test score to a performance category (below basic, for instance) sometimes go against demonstrated, contradictory norm-referenced data (Madaus & Clarke, 2001). These roadblocks to truly understanding student performance will exist for any accountability system that relies heavily on standardized testing.

All of these concerns have led some researchers to regard the goals of raising overall student performance and providing equity across sub groups to be two completely different objectives (Hanushek & Raymond, 2004). This seems somewhat contradictory considering that common intentions for accountability include both increasing student achievement and reducing achievement gaps (Betebenner & Linn, 2010). This paradox of sorts puts a heavy burden on any potential accountability system. The recently rolled back ESSA would account for this discrepancy by not allowing schools and districts to advance without the success of all students, but until this concept is the law of the land, well-intended schools looking to raise student achievement as a whole may unintentionally disregard subgroup populations without any oversight or accountability.

Success in Closing the Gap

Some do not view the achievement gap as an effect from school-related activity, but more so a red flag for other racial disparities in quality of life indicators such as health, access to housing, and employment (Noguera, 2014). Also present in the literature is that other non-academic factors such as disproportionate access to mental health resources for children contribute to the achievement gap (Becker & Luthar, 2002). The height of closing the achievement gap on a national level took place in 1988, which represents the end of a seventeen year period that saw the gap between White and African American students cut in half; and the gap between Hispanic students and White students reduced by a third (Haycock, 2001). Although it would be a mistake to ignore the role of social elements such as social class or family structure in achievement, Grissmer et al., (1994) have found that changes in educational policies towards African-Americans were better predictors for achievement than social elements such as social class or family

structure (as cited in Lee, 2002).

There are a number of interventions and policies that schools have made that have demonstrated progress in reducing the achievement gap. Wenglinsky (2004) found that when a school took time to identify and emphasize instructional methods that benefited Black and Hispanic students, the in-school achievement gap was reduced. While specfic instructional methods will vary from building to building, and perhaps student to student, Hunter and Bartee (2003) assert that clear objectives, adequately aligned practices, and long-term effect data are the three consistent pieces for any school looking to reduce the achievement gap. No matter the specific tool used to help close the achievement gap, there must first be a commitment to make change. According to Johnson and Uline (2005), "schools that have closed achievement gaps have more than mission statements: They have a sense of mission" (p. 46). Missouri's current MSIP goals include fostering improvement and innovation within districts. For this to happen in schools in regards to reducing the achievement gap, the accountability system in place must provide the impetus to do so.

Summary

Accountability in the United States, and in Missouri, has changed considerably since the end of World War II. Most recently, moving away from the 100% success standard set by NCLB to the more vague ambitious but achieveable standard for state-granted waivers from the NCLB immediately creates space for there to be students that do not achieve. Obviously, this is the greatest concern to those who are already on the wrong side of the achievement gap. Because of that, Missouri, as a waiver state, must continually and rigorously evalute the current MSIP system to ensure that all students are

successful. Inclusion of elements such as the super subgroup and inequitable accounting for subgroup students in comparison to all students creates gaps for students to get lost in averages, and gives schools reason not to prioritize subgroup success because there is simply not enough incentive to do so.

Carlson's (2006) two essential questions for school accountability resonate throughout the available literature on this subject: how good is a school – and is it getting better? This study looks to add an additional question: can a school get better if it is not equitably meeting the needs of all students housed within it? At first glance, this question appears to be rhetorical – how could a school be said to be improving if only a certain population of its students are benefiting? There is plenty of research to show that the achievement gap can be combatted, and narrowed, on the local and nation-wide level. School accountability systems need to support those steps, not give incentive to focus on other things. The methodology in the next chapter will detail how this study will look at whether the current MSIP-5 accountability system is defining a good or improving school by ensuring achievement for everyone.

Chapter 3: Methodology

This descriptive study used comparative elements to examine trends in the difference in middle schools' (grades 6-8) mathematics, language arts, and science achievement for White student population in comparison to two major racial groups' (Black and Hispanic) achievement. This is measured by the standardized testing program conducted through the Missouri Assessment Program (MAP) and collected and reported by the Missouri Department of Elementary and Secondary Education during the 2015-2016 and 2016-2017 school years' student cohorts. In addition, the 2015-2016 7th grade student cohort's change in achievement on standardized tests from the 2015-2016 school year to the 2016-2017 school year in ELA and math for White, Black, and Hispanic students were also compared. These changes in the gaps of achievement were compared to the changes in the overall performance of the school the students attended. Finally, trends in each student group data for both the different cohort years (15/16 and 16/17) and the same cohort (15/16 7th and 8th grade years) were then compared to each school's change in APR (Annual performance report).

This comparative descriptive study model was selected for this study because it allowed for clarity into the differences in change in achievement between White and Black/Hispanic students in both a status and growth concept, and how that change related to the overall performance of a middle school in the MSIP-5 accountability system. Also important, it allowed for the ability to determine if achievement in either group more closely associates in the achievement for the school as reported to the public. This study design does have limitations however, as the results are only valuable for descriptive purposes, and do not offer insight into causation for the results. Also, given that this

study was conducted only over a two year period, it is limited in its potential to neglect factors that may be unique to this sampled time period. The description provided may not be representative of the history of the achievement disparities between White and Black/Hispanic students and how it compares to the over-all achievement level of their school.

Data and Measures

Student Data.

The data used for this study is the MAP Performance Index (MPI) score associated with a group of students. In the Missouri Assessment Program, students are required to take standardized tests in ELA and math in grades 3 through 8, and in science in grades 5 and 8. Students are given an achievement level based on their scores on these assessments – Advanced, Proficient, Basic, or Below Basic. To determine MPI, each of these levels are given a point value as follows:

Table 3.1
Point Values for Achievement Levels in Determining MPI.

Achievement Level	**Index Point Value**
Below Basic	1
Basic	3
Proficient	4
Advanced	5

The index point values for a group of students is then added together and divided by the total number of reportable students. This produces an MPI score that will fall between 100 (all students testing at a Below Basic level) and 500 (all students testing at an Advanced level). These MPI scores will be the basis of determining achievement for the

groups involved in this study.

This study isolated the MPI for the White populations of the schools identified for this study; as well as the MPI for Hispanic and Black students as it exists in the reported data, for the 2015-2016 school year in the subjects of 7th and 8th grade ELA, math, and science; and the 2016-2017 school year in the subjects of 8th grade ELA, math, and science. The MPI's for all of the subjects was used to create a profile for each school. If a population does not have any reportable data for a particular year or subject, it was left blank and not used in the calculations of final results. In addition to the student group data, the percentage of APR points and the total number of subgroup points for the school were collected for each year. A sample profile of School 22 is shown in the following table:

Table 3.2
Sample Data Profile for Schools Involved (School 22)

	15/16					16/17		
Race	**7 E**	**7M**	**8E**	**8M**	**8S**	**8E**	**8M**	**8S**
School 22								
Black	226.7	146.9	340.7	240.9	279.3	277.4	131.3	155.6
Hispanic	278.9	295.6	305.3	194.7	147.4	295	226.7	260
White	388.4	395.6	420	351.8	376	412.2	315.2	393.9
APR			91.4				NA	

Notes. Collumns represent grade and subject tested (E=ELA, M=Math, S=Science). Numbers are the agrregated MPI for all students completing the test in each subject. Annual Performance Report (APR) points represent the entire school for the designated year, not any specfic grade level or group of students. The 16/17 APR for School 22 is not available due to a lack of released inforamtion explained in Chapter 4.

These students were selected for this study because they represent an important break in the Missouri Assessment Program. Students in Missouri are tested in ELA and

math in grades 3-8, and then are tested again in certain subjects through End of Course Exams, and not as grade levels. Since students may take EOC's at different times during their high school career, there is a loss of cohort cohesion that would hurt the ability to look at cohort growth. This makes the 8th grade year the cumulative year to look at cohort growth in subject levels.

School Data.

DESE publishes school performance in the MSIP-5 accountability system through the Annual Performance Report (APR). There are four categories that schools and disricts can receive points. For middle schools, there is a possible score of 70 points distributed across four of the five categories (the category of College and Career Readiness does not apply to middle schools). The breakdown for how points are awarded is shown in the following table:

Table 3.3
Points Possible by MSIP-5 Standards for Middle Schools.

MSIP-5 Standard	Points Possible
Academic Achievement	48
Subgroup Achievement	12
College and Career Readiness	NA
Attendance	10

The category Academic Achievement looks at the achievement of all reportable students. Subgroup Achievement looks at the success of students that fall in at least one of the following subgroups: Black, Hispanic, low-income students, students with disabilities, and English language learners.

On a district level, APR is used to determine accrediation – 70% of the possible

APR points earns full accrediation while 90% of APR points labels a district as Accredited with Distinction. While schools are not individually accredited, the APR serves the purpose of school performance as reported to the public through the DESE website. In addition to the student MPI data being collected as previously described, the overall APR for schools involved in the study were also pulled for 2015/2016 school year and the 2016/2017 school year.

Sampling Procedures

In the state of Missouri, there are 280 true middle schools (grades 6-8) and junior high schools (grades 7-8). According to a table derived by Kredjcie and Morgan (1970), to investigate trends in the achievement gap and its correlation to school APR to make observations representational of the population of 280 Missouri middle schools and junior highs with 95% certainty, a sample size of 191 schools would need to be used.

This sample was selected by obtaining a list of middle schools and junior high schools from the DESE website and creating a list that was alphabetical by district. Each school was then be given a numerical value (1-280). Using the Random Integer Set Generator at Random.org, a random list of 191 integers was created and were numbered in order. The schools corresponding to those numbers were chosen to be investigated for this study. Within this random sample, some of the schools needed to be eliminated from the study. If schools have no testing data being available, then they were removed. If there was an absence of reported data on White student achievement, or an absence of reported achievement for either Black or Hispanic students, then those schools were also removed as the comparisons needed for this study were not be able to be conducted. After these removals, the remaining schools with enough of the necessary reporteded data

took part part in the study. A full list of schools, and reasons why they were removed from the study if they were, can be found in Table A-1 in Appendix A.

Data Collection

Results from the 2015-2016 and 2016-2017 MAP and APR were collected from the Missouri Comprehensive Data System kept by the Missouri Department of Elementary and Secondary Education at their website (www.dese.mo.gov).

Data Analysis

The purpose of this study is to identify if the MSIP-5 accountability system allows for schools to demonstrate improvement through increased APR scores without having to improve educational outcomes for subgroup students. Carlson's two questions concerning how good a school is and if it is getting better will serve as the basis of using the data collected in this study to determine the effectiveness of MSIP-5. Subgroup outcomes, and the gap between those outcomes and the the outcomes of white students will drive the answers to those questions.

Status: How good is this school.

For this fundamental element of school accountability, status, the change in MPI of 8th grade ELA, math, and science from the 15/16 cohort to the 16/17 cohort were examined. Though this represents two different cohorts of students, this provides potentially six points of comparison in the overall achievement level between Black, Hispanic, and White students. Black and Hispanic students were chosen for study as these are the ethnic/racial groups that are calculated in the super subgroup score in APR calculation. This was calculated by finding the difference between MPI scores for White students and each studied subgroup (for which data is available) on the 15/16

standardized tests. The same calculation was made with test scores from the 16/17 school year. This data was obtained by retrieving the publically released data on the DESE website.The change in this difference was the significant marker. Schools that keep subgroups at the same (or higher) MPI as White students, or that closed the gap by at least 3% of the 15/16 gap were designated as improving the educational outcomes of subgroup students. Three percent was chosen as the brightline for improving outcomes since this is the same percentage of growth required in the MSIP-5 accountability to qualify a school as being On-Track. Schools that are able to close the 15/16 at a rate between 0 and 3% were designated as maintaining the educational outcomes of subgroup students. Schools that were unable to close the 15/16 gap were designated as not improving the educational outcomes of subgroup students. If a school did not have two years data for a subgroup to compare to White student achievement, the gap calculations were not figured into data analysis.

All of these gap change outcomes contributed towards a composite status score for each school involved. This score reprepresents each school's overall ability to close the gap between the 15/16 cohort of students and the 16/17 cohort of students in terms of final student achievement. Since Black and Hispanic groups are examined in comparison to White students, there was a potential total of six points of comparison for each school's composite status score. Each gap change outcome that qualified for analysis was given a potential point value of 1. If a school met the qualifications as improving educational outcomes for that subgroup, for that stuject, it was awarded one point. If a school is maintaining the educational outcomes, it was awarded a score of zero. If a school is not improving educational outcomes, it was awarded a score of negative one.

Where data is incomplete, schools received a score of "NA" (not applicable). Finally, these scores were added up and divided by the points possible for that school to provide a composite status score that fell somewhere between -1 (not improving educational outcomes) and 1 (improving educational outcomes). The following table demonstrates how this composite score is calculated with the data available for School 22.

Table 3.4
Sample Status Composite Score Calculation (School 22).

Comparison Group	**15/16 Gap**	**16/17 Gap**	**% Change**	**Points Given**
Black/White ELA	79.3	134.82	70	-1
Black/White Math	110.9	183.97	66	-1
Black/White Science	96.7	238.38	147	-1
Hispanic/White ELA	114.7	117.24	02	-1
Hispanic/White Math	157.1	88.55	-44	1
Hispanic/White Science	228.6	133.94	-41	1
Total Points/Points Possible				-2/6
Status Composite Score				-.33

Notes. Gap numbers represent the difference the White student MPI and the named subgroup MPI for the 8th grade subject given.

Growth: Is it getting better.

Where the status composite score isolates the gap outcomes between two successive student cohorts, a growth composite score was also calculated to isolate the gap outcomes between the same student cohort over the course of two successive years. As for status determination, MPI gaps were used to determine change, but there were only four potential points of comparison for growth. To track the cohort gap change over two years, the 7th grade 15/16 cohort was compared with the 8th grade 16/17 cohort. In

the MSIP-5 accountability system, science is only tested in 5th and 8th grade, so there was not any 7th grade data for science in which to base a comparison.

The growth composite score was otherwise calculated similarly to the status composite score. The data used to determine the gaps was again taken from assessment data released for public use by DESE. MPI was calculated from each set of testing outcomes, separated by race. The gaps that existed in the 2015-2016 data set for 7th grade students was compared with the gaps that existed in the 2016-2017 data set for 8th grade students. Subgroup achievement at/above the White MPI, or a reduction of the gap of at least 3% from the 7th grade gap qualified as improving educational outcomes. Reduction of the 7th grade gap between 0 and 3% was considered maintaining educational outcomes, and any growth in the 7th grade gap was considered not improving educational outcomes. Points towards the composite score were awarded in the same fashion as the status composite score. An example calculation of the growth composite score is demonstrated in the following table using the data for School 22:

Table 3.5
Sample Growth Composite Score Calculation (School 22).

Comparison Group	**7th Gap**	**8th Gap**	**% Change**	**Points Given**
Black/White ELA	161.7	134.82	-17	1
Black/White Math	248.7	183.97	-26	1
Hispanic/White ELA	109.5	117.24	07	-1
Hispanic/White Math	118.3	88.55	-25	1
Total Points/Points Possible				2/4
Growth Composite Score				.50

Notes. Gap numbers represent the difference the White student MPI and the named subgroup MPI for the 8th grade subject given. Negative gap numbers demonstrate an area where subgroup MPI was higher than White student MPI.

A third question: Is this school good for everyone

At the conclusion of data analysis, schools had two scores: a status composite score, and a growth composite score. At this point, schools were separated into three categories. A school was be designated as a Category 1 school if both status and composite scores are positive. A school was be designated as a Category 2 school if either composite score is positive and the other is negative. Finally, a school was designated as a Category 3 school if both composite scores are negative. Should a school have a composite score of zero, it was treated as a negative score since no improvement could be demonstrated.

When all examined schools are assigned a category, each school's APR for the 15/16 school year and the 16/17 school year were analyzed. The percentage of APR points obtained in 15/16 was subtracted from the percentage of points obtained in the 16/17 school year to determine if the school improved in APR, decreased in APR, or maintained APR over those two years. The number of schools increasing, decreasing, or maintaining APR, as well as the average change in APR point percentage, were calculated for each category of schools for comparison. This data was then be used to determine if successfully improving outcomes for subgroup students was important to increasing the APR, or overall achievement, of the entire school under the MSIP-5 accountability system.

Limitations

The greatest limitation to this study is that for a descriptive study, a two-year, two grade level window of the schools involved is a very small picture when considering success of a state-wide accountability system. The trends seen in this study may be

unique to the time period being examined. The results and conclusions of this study suggest that further, more comprehensive study be undertaken, but until more longitudinal studies of this data are conducted, it is be impossible to use outcomes as more than a description of the two years being examined.

The other inherent limitation in this study is that its focus is solely on middle schools and junior high schools. APR is calculated differently for high schools, and districts as a whole, because of the additional standards that fall under the category of College and Career Readiness. So while the data may displayed noticeable trends for how the MSIP-5 accountability system rewards achievement of subgroup students in middle schools, it will be difficult to expand those trends to speak for the accountability of entire districts.

Tracking gaps in only Hispanic and Black students also creates a limitation in this study. Students and families are able to identify as multi-racial upon enrolling in a school district. Those students did not fall into the data analyzed within this study since this racial identifier is not included in super subgroup calculation. The suggestions that this study derives are not applicable to these students.

Finally, although the use of the 8th grade year maximized the ability to look at cohort growth, there are still limitations in using a year to year analysis to determine cohort growth. This study does not take steps to control for students who only attended both their 7th and 8th grade year in the same building. A margin of error is then created when looking at cohort growth from the 7th to 8th grade year as the two groups of students not the same group. This margin of error varied between buildings because each bulding is unique in the level of transience that is experienced.

Chapter 4: Findings

This study looked to paint a picture at how effective the MSIP-5 accountability system was at tracking the achievement of all students in public schools and districts in Missouri over the 2015-2016 and 2016-2017 school years. This was done by looking at the change in the achievement gap in Missouri standardized test scores between White students and Black/Hispanic students. Specifically, this study centered on the research question posted in Chapter 1: Are Missouri middle schools able to achieve higher summative evaluations in the MSIP-5 APR calculation regardless of the success of subgroup students? This chapter is organized by the supporting questions that framed the study's methodology.

1. How good is this school? Findings from the composite status scores of Black/Hispanic students.
2. Is this school getting better? Findings from the composite growth scores of Black/Hispanic students.
3. Is this school good for everyone? Findings from analysis of how the composite scores correlate to school APR.

After a brief description of the sample used for this study, and how the availability of data impacted the study, this chapter will provide a report on how the selected schools performed in reducing the MPI achievement gap between White and Black/Hispanic students. First, data is provided that shows how the gaps changed between separate 8th grade cohorts in the subjects of Math, ELA, and Science. Then, data is provided that shows how the gaps changed between the same cohorts in Math and ELA as they went from 7th to 8th grade. Finally, this chapter examines how school's success in

reducing these gaps compares to the available APR data to see if schools that are able to do this are rewarded for doing so.

Sample Information and Availability of Data

This study selected 191 Missouri middle schools and junior high schools at random to investigate the data. Data was taken from the data sets available to the public through the Missouri Comprehensive Data System located on the Department for Secondary and Elementary Education's website. Upon pulling the data sets and calculating MPI for White, Black, and Hispanic students across the grades and subjects required for this study, a number of schools had to be eliminated from the study. Two schools were eliminated due to a complete lack of reported data as they were brand new schools in the first year of the study. Eleven schools had to be eliminated from the study due to insufficient data of White students available in the data set. These schools had results for Black/Hispanic students, but there was not any White student results reported, making any sort of comparison impossible. More impactful to this study was the lack of reported Black/Hispanic data. Eighty-seven schools had to be eliminated from the study due to a lack of reported Black/Hispanic data, making comparison impossible. These schools were not replaced in the study because the availability/validity of information available to the public (specifically Missouri families) is a key point of discussion, so the lack of available information is significant. After these schools were eliminated, there were ninety-one schools remaining that had enough reported White, Black, and Hispanic results data needed to participate. The complete list of schools looked at for this study, along with reasons for elimination, are available in the appendix.

Data was further limited for this study in regards to building APR. While 2016 building APR was publicly available on the DESE website, issues with 2017 standardized testing resulted in changes in calculation of APR. According to a memo dated October 2, 2017 from Deputy Commissioner Stacey Preis, Algebra I and English II End-of-Course exams would be excluded from calculation in 2017 APR. This decision had a number of implications for this study. First, APR results were delayed. District APR scores were not made publicly available until November 15, 2017. Building APR was further delayed for public release until December 15, 2017. More critically, schools where either Algebra I or English II EOC's constituted more than 15% of assessments taken did not have building points calculated – effectively keeping schools from receiving an APR score altogether for the 2017 school year. Many middle schools and junior highs have students who take the Algebra I course and EOC as 8th graders. The impact is that even though Algebra I scores have no direct association with this study, many schools in this study did not receive an APR score for the 2017 school year. Of the ninety-one schools that had the required reportable assessment data, only eighty schools received a 2017 building APR, enabling them to be fully looked at for the research question posed by this study.

Status Composite Results

There were six potential points of comparison for each building's status composite score. Those included changes in the achievement gap between White and Black students, and White and Hispanic students from the 2015-2016 8th grade cohort to the 2016-2017 8th grade cohort in the subjects of ELA, math, and science. Not all schools involved in the study were eligible for all six points. Some schools did not report

information for a student group/course (for example, Hispanic science) which made comparison impossible. Table 4.1 below shows how many of the ninety-one schools had reportable data for comparison between for each of the six points of comparison.

Table 4.1
Number of schools with data available for each point of comparison – status.

Comparison Group	**Data Available**	**Data Unavailable**
ELA: White to Hispanic	62	29
ELA: White to Black	77	14
Math: White to Hispanic	48	43
Math: White to Black	73	18
Science: White to Hispanic	61	30
Science: White to Black	76	15

Across all analyzed subjects, there was more data available to compare changes in the achievement gaps from year to year with successsive 8th grade cohorts between White and Black students in comparison to White and Hispanic students. This was particularly the case in math, where schools were unable to report scores for almost three times the number of Black populations compared to Hispanic populations. Discrepancies across the number of reported data sets also means that schools had different amounts of points possible for status composite score calculation. Points possible ranged from two to six points. A complete list of schools in this study, and the reported scores for each race/course is available in the appendix.

For each race/course gap where data was available to be analyzed, schools were able to show an overal increase or decrease in the gap from cohort to cohort. Each of these increases or decreases are what was looked at when considering points for the

overall status composite score. Table 4.2 shows the number of schools with reported data who increased the 8th grade achievement gap between the 2015-2016 and 2016-2017 school years and the number of schools who were able to decrease that same gap.

Table 4.2
Gap outcomes from 2015-2016 to 2016-2017 – status.

Comparison Group	**Gap Increase**	**Gap Decrease**	**n**
ELA: White to Hispanic	26	36	62
ELA: White to Black	37	40	77
Math: White to Hispanic	21	27	48
Math: White to Black	37	36	73
Science: White to Hispanic	29	32	61
Science: White to Black	41	35	76

Table 4.2 displays a couple of trends. In terms of race, for Hispanic students, the achievement gap in successive cohorts was reduced in the majority of schools across all subject areas(albeit by a small margin in science). This is in contrast to the achivement gap for between Black and White students in successive cohorts, which saw a majority of gaps decreasing only in ELA and two subjects, math and science, where the majority of gaps increased.

In terms of subject matter, both race gaps (White-Hispanic, White-Black) saw the greatest number of schools decreaseing gaps in ELA. Math and science gaps were not decreased at the same rate as ELA, with science being the subject for both race gaps where the fewest number of gaps were able to be decreased.

Determinations made regarding the increase or decrease in the acheivement gaps for each race/course point of comparison, the overall status composite score was able to

be calculated in the way described in Chapter three. Schools were awarded a point if they were able to derease any of the race/course gaps outlined in Table 4.2 by at least 3% of the 2015-2016 gap. Schools received zero points if that gap was decreased by less than 3%, and received a negative point if the gap was increased by any amount from the previous year. Any instance where a negative gap already existed; for example, if Black students outscored White students in science in 2015-2016, that school would receive a point for any score in the 2016-2017 where that negative gap still existed, even if that negative gap decreased. Those points were added together and divided by the points of comparison available to each school, resulting in a score between -1 and 1. Schools were labeled as having an overall positive effect on status achievement gaps for any score better than zero, an overall zero effect on status achievement gaps, or an overall negative effect on status achievement gaps for any score less than zero. Table 4.3 shows how many schools qualified for each designation.

Table 4.3
Outcomes for overall composite score - status.

Outcome	**Number of Schools**
Positive Effect	37
Zero Effect	15
Negative Effect	39

Almost as many schools that were found to have an overall positive effect on the achievement gaps between successive cohorts also had an overall negative effect. Compounding this are the fifteen schools that had an overall zero effect on the race/course gaps. This study looked to see the connection between improving the race/course gaps and school APR, so any school not in the positive effect category will be

considerd to have a negative effect (zero effect and negative effect).

Growth Composite Results

In the Missouri Assessment Program, ELA and math are tested from third grade through eighth grade while science is tested only at fifth and eighth grade. The growth composite score is based off of the 2015-2016 seventh grade cohort's scores in ELA and math and the growth demonstrated in the White/Black and White/Hispanic achievement gaps for the same cohort in 2016-2017 eighth grade ELA and math testing. As a result, there are only four potential points of comparison as science does not have a seventh grade test to serve as a baseline. As with the status composite score, not all schools had the required data in order to complete the comparison. Table 4.4 shows how many schools had the data required for each potential point of comparison.

Table 4.4
Number of schools with data available for each point of comparison – growth.

Comparison Group	Data Available	Data Unavailable
ELA: White to Hispanic	64	27
ELA: White to Black	76	15
Math: White to Hispanic	52	39
Math: White to Black	74	17

The trends reprsented in this table are similar to those in the status data. Across both compared subjects, there was more data to evaluate the change in the White/Black achievement gaps than the White/Hispanic gaps. Again, this was especially the case in regards to math, where the number of schools without data was more than double the number of schools not reporting White/Black data. The available data left schools with between one and four possible points.

As with the status data, for each race/course gap where data was available to be analyzed, schools were able to show an overal increase or decrease in the gap within the cohort as it went from seventh to eighth grade. Each of these increases or decreases are what was looked at when considering points for the overall growth composite score. Table 4.5 shows the number of schools with reported data who increased the cohort achievement gap between the 2015-2016 and 2016-2017 school years and the number of schools who were able to decrease that same gap.

Table 4.5
Gap outcomes from 2015-2016 to 2016-2017 – growth.

Comparison Group	**Gap Increase**	**Gap Decrease**	**n**
ELA: White to Hispanic	26	38	64
ELA: White to Black	28	49	76
Math: White to Hispanic	20	32	52
Math: White to Black	18	56	74

Table 4.5 displays a couple of trends that contrast those that exhibited themselves in the status gap. In terms of race, all race/course comparisons found a majority of schools reporting data to decrease the achievement gap. Also in contrast to the outcomes in status gaps, schools were more successful in math as fewer schools had gap increases in White/Hispanic and White/Black gaps than in ELA. Espeically prominent is the number of White/Black gaps in math, which saw a gap decrease in almost three times the number of schools that saw an increase. As with determining overall status outcomes, these increases/decreases were used to determine the overall growth outcomes, which contributed to an overall growth composite score.

For each point possible, schools received a point if they were able to demonstrate

a decrease in the 2015-2016 achievement gap by at least three percent in the 2016-2017 school year. Schools did not receive any points for any decrease less than three percent, and received a negative point for each gap that increased in the 2016-2017 school year. Those values were combined and divided by the number of points possible, resulting in overall negative effects, overall zero effect, and overall positive effects. Table 4.5 shows how many schools fell into each category.

Table 4.6
Outcomes for overall composite score – growth.

Outcome	**Number of Schools**
Positive Effect	51
Zero Effect	21
Negative Effect	19

Compared to the overall status outcomes, many more schools, the majority of schools, demonstrated an overall positive effect on the 2015-2016 seventh grade cohort as they advanced to eighth grade in the 2016-2017 school year. The number of schools demonstrating an overall negative effect was only half of what was demonstrated with the outcomes for the state composite score. All of this suggests that schools are much more effective in decreasing achievement gaps of students as they move through school than decreaseing achievement gaps in new groups of students.

Composite scores and APR

Once composite status and growth scores were calculated, schools were placed into one of three groups. Schools that demonstrated both positive status and growth scores were given the designation Category One. Schools that demonstrated either a positive status or a positive growth score, and either a negative or zero for the other score

were labeled Category Two. Schools that demonstrated both negative status and growth scores were labeled Category Three. Table 4.7 shows the breakdown of how many schools fell into each category. A full list of schools with composite status/growth scores and category determination are located in the appendix.

Table 4.7
Category Outcomes for Schools

Outcome	**Number of Schools**
Category One	24
Category Two	44
Category Three	23

The initial observation is the even distribution of schools across the three categories. There are approximately the same number of schools that had both positve status and growth scores as there were schools that had both negative status and growth scores. Almost half of schools in the study fell into Category Two; and within that category, seventeen schools had a positive status score but negative growth score, and twenty-nine schools had a positive growth score but negative status score. This tendency for schools to do better with growth measures, compared to status measures, falls in line with the trend seen from overall status and growth outcomes.

Due to the lack of a 2017 APR for schools that tested at least 15% of students with either Algebra I or English II, eleven schools could not have their growth in APR analzyed. The remaining eighty schools had their APR growth analyzed for the number of schools in each category demonstrating a postive growth in APR, negative or zero growth, the average growth, as well as identifying the largest growth and decrease from the following year. Table 4.8 lays out this information for all three categories of schools.

Table 4.8
APR growth analysis for all school categories.

Category	Total	Pos	Neg	AVG	High Growth	High Decrease
One	22	13	9	2.22	20	-12.9
Two	37	26	11	5.72	30	-11.5
Three	21	8	13	2.74	31.4	-5.0

Notes. School total numbers reflect schools that had both 2016 and 2017 APR's reported. Pos and Neg indicate how many schools showed a positive growth in APR, or a negative growth (or zero growth) in APR.

As Table 4.8 shows, there were trends in the three categories of schools in terms of their growth in APR from the 2015-2016 school year to the 2016-2017 school year that would be expected if category designation affected APR. Category One and Two schools were more likely to positviely increase their APR from 2016 to 2017; and Categorey Three schools were more likely to receive a negative growth in APR. Despite this, all three categories had schools that were able to show huge gains over the previous year, and all three categories had schools that were also able to show decreases. Also notable is that all three categories showed an average gain in APR; so even if a school could not reduce either the status or growth gaps between White and Black/Hispanic students, there was still a forty percent chance that school would increase its APR.

Also supporting the notion that category designation affected APR was the fact that category one and two schools were more likely, and especially category two schools, to show a positive gain in APR. Category two schools also had the highest average gain in APR. These discrepancies do not necessarily demonstrate any connection between the category a school belonged to and their growth in APR, however. A Pearson Correlational Index was run between the category number assigned to a school and the

growth in APR that was demonstrated. The correlational index for the eighty schools involved was a .01, which shows almost no correlation, and suggests that there is very little connection between the category a school was assigned and its growth in APR.

This inconsistency was also demonstrated when looking at school category and 2017 APR outcomes. Three category one schools received less than 70% of the points possible on the APR; more incredible was that twelve category three schools received over 90% of the points possible on the APR. A Pearson Correlational Index was run between the category assignment of schools and 2017 APR, and a score of .03 was returned. As with the correlation between category and APR growth, the index shows a very minial positive connection between the category a school was assigned and its 2017 APR. These two correlational indexes suggest that whether or not a school is able to decrease the achievement gap between White and Black/Hispanic students has very little bearing on APR outcomes. The correlational indexes are displayed in Table 4.9 below.

Table 4.9
Pearson correlational index outcomes

Comparison	**Correlation Index**
School category and 2017 APR	.03
School category and 16 – 17 APR growth	.01

Notes: n = 80. The correlation was taken only with schools that had an APR reported for both the 2016 and 2017 school years.

Chapter 5: Summary, Conclusions and Recommendations

Introduction

This chapter presents a summary of the study and its findings as well as important conclusions that were made from the resulting data. How these findings relate to the existing literature are also presented in concert with recommendations for further research. Finally, the conclusions gathered are used as a basis for policy implications and a call to action.

Summary of the Study

The topic of school accountability is one that is at the same time both easy to agree on, and impossible to agree on. Schools and districts must be held accountable for what happens throughout the school year; and the quality of schools is something important to families in our country. According to a 2013 survey done by realtor.com, 91% of prospective home buyers said school boundaries were important to their school search, and one in five would be willing to pay up to 10% more above their budget to have a home in the school district of their choice (Debord 2016). The desire for quality schools extends to state and federal governments as the ability of American students to compete with students from around the world for college seats and employment has increased in step with an increasingly globalized world. Despite this shared desire for accountability, creating an accountability system that everyone can agree on is something else entirely. Every state has its own accountability system, and while the appropriateness of the role that states and federal governments have in school accountability was not a topic addressed in this study, it remains significant because schools all over the country receive federal funding. When Education Secretary Betsy DeVos (2017) was asked at

her confirmation hearing if she believed that schools should be held to equal standards of accountability, her response was only to say that she believed in accountability. Her comment represents the current state of school accountability in the United States. All states want accountability, but there are different schools of thought on the type of data to take accountability on, and how to interpret that data. Most importantly, at the end of every perception or argument, there are the American families who just want to be sure that their children are attending a good school. This is especially true for families of Black and Hispanic children who remember segregated and unequal opportunities being the status quo. If America is a country where everyone is receiving an equal opportunity, then the question is begged: how well are the accountability systems in place measuring that opportunity?

The purpose of this study was to try to find an answer to that question for the state of Missouri. More specifically this research question was posed: Are Missouri middle schools able to achieve higher summative evaluations in the MSIP-5 APR calculation regardless of the success of Black/Hispanic students? This question was asked because of the use of the super subgroup, and how subgroup achievement was not prioritized in APR calculation. Not only is subgroup achievement only worth one-fourth of what overall student achievement was worth, but the scores needed for higher point totals are also less than overall student achievement. This prompted concern that not only did APR not factor in subgroup achievement, but actually provided incentive to focus on non-subgroup students.

The design of the study took a look at the standardized test results for students across a random sampling of middle schools and junior highs across the state and

compare how gaps demonstrated during the 2015-2016 school year between White and Black/Hispanic students grew or decreased during the following 2016-2017 school year. These results were disaggregated between to identify and track the gaps for these race-based groups in the tested subjects of ELA, math, and science in both a status and growth concept. The status concept looked at two separate cohorts, the 2015-2016 eighth grade cohort compared to the 2016-2017 eighth grade cohort. The growth concept looked at how the gaps created in 2015-2016 testing of seventh graders either grew or decreased when that same cohort of students took their eighth grade tests. Once the trends in those gaps were identified, that progress was compared to the percentage of points that schools received in their Annual Performance Review to examine how connected those two data points were.

In terms of school success in closing the status gaps between White and Black/Hispanic students, the data demonstrates that there was a wide range of success and opportunity. Overall, forty-one percent of schools with reportable data were able to show a positive effect in reducing gaps between the 15/16 cohort and 16/17 cohort. Separated across the different subject areas, schools showed a greater ability in reducing ELA gaps between White and Black/Hispanic students. While gaps were not decreased as much across math or science for both compared racial groups, this was especially the case for gaps between White and Black students. In math, just as many schools increased the gap as decreased it; and in science, more schools actually increased the existing gaps than decreased them.

From a growth perspective, schools were more successful in reducing the gaps between White and Black/Hispanic students. Fifty-six percent of schools with reportable

data were able to show a positive effect in reducing the exiting 15/16 7th grade gaps by that same cohort's tests in 16/17. Broken down into subject area, schools were also much more likely to reduce the gaps in math between both White and Black or White and Hispanic students. This was especially apparent in White/Black gaps, where sixty-seven percent of schools decreased gaps. Science could not be analyzed as seventh grade students are not required to take a standardized test in science.

Schools were assigned a label depending on the outcomes of both status and growth gaps. Schools that demonstrated an overall positive effect in reducing gaps for both status and growth perspectives where labeled Category 1 schools. Schools that showed a positive effect in one but not the other were labeled Category 2 schools, and schools that were unable to show a positive effect in either, Category 3. Most schools (48%) were Category 2 schools, and the vast majority of schools within that category (64%) showed positive growth scores. The number of Category 1 and Category 3 schools were almost the same (24 to 23, respectively).

When all schools were labeled, the change in each school's APR from the 15/16 school year to the 16/17 school year was examined to see what connections existed. Category 3 schools were the only category that had more schools decrease in APR than increase. This was not enough to suggest a connection between the ability to reduce racial achievement gaps and school APR, however. Pearson Correlational Indexes were run for the relationship between both school category and 2017 APR and for the relationship between both school category and the growth shown between the 2016 and 2017 APR for schools. These indexes were .03 and .01, respectively. These correlational indexes suggest virtually no correlation between the category a school was assigned to

and either a status APR outcome, or a growth APR outcome. In short, how well schools did in reducing gaps between White and Black/Hispanic students had very little to do with the overall rating a school received during the studied period.

Conclusions

Before data can be analyzed to determine the effectiveness of schools and districts, data must be available and timely. Polikff et al. (2013) refers to this necessary function of school accountability programs as a one of three critical components of transparency: "yearly reports provided to stakeholders should promote the valid interpretation of the results from students' assessment and school classifications" (p.47). In a random sample of 191 middle schools and junior highs, only eighty schools had enough data reported to be involved in the study. Ninety-eight schools were eliminated because they reported no test score outcomes for either White, Black, or Hispanic students. So even if the state, a school, or a family wanted to gain an understanding for how students of a particular race perform in a specific school that was involved in this study (during the years examined), there is only about a 49% chance that the data is even reported. This leaves an enormous responsibility to school APR as a determination for how effective a school is in addressing the educational opportunities of all students.

Concerns for transparency are compounded during the timeline this study examined because of the delay in release of school APR. During the 2017 school year, APR for buildings was not released until December. This meant that anyone concerned about the performance of a school in Missouri had to look to district APR (which itself was released after the beginning of the school year) for an inclination of the quality of that school. Even upon release of building APR, several schools (eleven involved with

this study) will not receive any sort of APR due to testing concerns surrounding Algebra I and English II End of Course exams. The culmination of these facts means that there is a real lack of transparency in how well Black and Hispanic students do in every school in Missouri.

This is unfortunate for families who are interested in the best school for their children, but it is equally unfortunate for the schools in Missouri. While there is definite reason to be concerned about the comparative outcomes of White and Black/Hispanic students, this study did provide evidence that many schools are effective in closing those gaps, especially as students moved from seventh to eighth grade. The vast majority of schools were able to demonstrate a positive outcome on achievement gaps in at least a status or growth concept, and almost one-fourth of buildings were able to demonstrate a positive outcome in both. These findings reinforce the notion put forth by Wenglinsky (2004) that in-school achievement gaps can be reduced when schools took the time to understand what Black and Hispanic students needed instructionally, and then delivered it. The data from this study suggests that during the 15/16 to 16/17 school years, many schools did exactly that. Unfortunately, those schools were not necessarily rewarded in terms of APR score for that accomplishment. As the correlation indexes showed, there was virtually no difference in APR from those schools that were unable to reduce those gaps. When this happens, APR becomes more of what Cheng (2012) refers to as a "soft" accountability system that is driven by the organization's sense of responsibility (p. 786). This creates a dangerous scenario in which schools could de-emphasize super subgroup achievement because it simply does not matter as much as overall student achievement – which is heavily determined by the success of White students.

An accountability system which would be more influenced by the outcome of Black and Hispanic students is important because it would change the conversation about the achievement of White students compared Black/Hispanic students. As the data of this study demonstrates, schools can be effective in reducing the gaps that exist. If those schools were rewarded with higher APR scores, the other schools which were not effective would be forced to look past the existence of the gaps between White and Black/Hispanic students, and would have to understand *why* the gaps exist. Flores (2007) expounded on this very idea: "…while it is important to recognize a symptom such as low achievement, it is even more critical to understand and address its underlying causes" (p. 29). The conversation would naturally shift from an *achievement gap* to an *opportunity gap*. An opportunity gap may exist between schools in the form of availability to qualified teaching staff, as multi-national studies have shown a connection between access to qualified teachers and student achievement, even with varying definitions of what qualified teachers were (Akiba, LeTendre & Scribner 2007). An opportunity gap may exist in how superintendents and schools boards manage resources (monetary and non-monetary), because as Darden and Cavendish (2012) assert, "resources in the aggregate matter. Few proclaim that better resources, a tidier school building, better equipment, and a crackerjack curriculum are irrelevant" (p. 67). Or, an opportunity may exist in the disproportionate funds between districts. Missouri's poorest school districts report a per-pupil spending that is 17% less than the wealthiest school districts – the third worst rate in the country (Brown 2015). Perhaps an opportunity gap exists elsewhere, but if a schoool is able to boast a strong APR, or can grow their APR, without having to show a decrease in the gaps between Black/Hispanic students and

White students, no opporunity gap may ever be addressed because there simply is not enough reason to look.

Limitations and Recommendations for Further Research

This study represents the beginning of a conversation about the connection between APR in the MSIP-5 accountability system and the outcomes of Black/Hispanic testing in comparison to White testing. Two years of data for ninety-one schools' 7th and 8th graders is a very small perch to draw conclusions from. The vast number of schools that had to be eliminated from the sample of 191 schools selected for the study also introduces the possibility for skewed results in this study. So while the results suggest that a greater look be taken on the issue, until comparisons are made across all levels of testing (grades 3-8, high school EOC exams) in a more comprehensive (in terms of the number of schools) and longitudinal way, this study is limited to only being a window into the outcomes of the schools involved in this study during this time, and not an indictment of the entire accountability system.

As mentioned in Chapter Three, this study was further limited in regards to the growth data available due to the transience of students from year to year. Because data is not publicly available on an individual student basis, it was impossible to control growth data to only those students who were in both 7th and 8th grade in the same school over the two years investigated by this study. Further research into the connection of APR and gap outcomes would need to work closely with schools to receive individual student data to eliminate this concern.

To extend the research performed in this study, there is the potential to investigate opportunity gaps and how they are being addressed by schools. This study looked to see

what connection there was between APR and outcomes in testing gaps; not investigated at all was the level of motivation or interventions taken by schools. Simply because a school qualified as a Category Three school for this study does not mean that the school was not interested or working to reduce gaps. With as wild as the outcomes were in terms of increasing/decreasing achievement gaps, there is the likelihood that a number of different approaches were taken. Investigating the difference of how Category One and Category Three schools handle the opportunity gaps faced by their buildings would add to the research base in how opportunity gaps can be overcome.

Concluding Remarks

In April of 2017, the Department of Elementary and Secondary Education began workgroups to build the sixth generation of the Missouri School Improvement Plan. In the publicly published minutes of the most recent meeting, the development team recommended that subgroup achievement as measured by student performance on MAP standardized tests be kept as a standard (Department of Elementary and Secondary Education, 2017). There is no mention of how that achievement will be measured, or how much of a school's or district's APR will be comprised from the results, or even if subgroups will be tracked separately or as a super subgroup. At the time of this study, there was no published start date for MSIP-6.

Business mogul and educator Peter Drucker once postulated that what gets measured gets managed. The components of any accountability system will dictate to schools and districts, but also do families, what is important to the state. In the MSIP-5 system, with the use of the super subgroup and reduced points possible for subgroup achievement, the findings of the study suggest that reducing the academic inequality

between Black/Hispanic students and White students on state testing is not a management priority.

There is hope for an equal opportunity for all students in Missouri – and it is seen in the results of all of the schools that were able to close gaps in student achievement. Improving educational outcomes for all students is not an unreachable goal, schools are doing it now. Building the next accountability system to require schools and districts to measure and manage those equality of outcomes will help ensure the promise of a free and public education for all students.

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Appendix

Table A.1
Schools involved in this study and reasons for elimination (if applicable).

School Name	Elligable?	No Data	White	Black/Hispanic
School 1	Y			
School 2	N			X
School 3	N			X
School 4	Y			
School 5	Y			
School 6	Y			
School 7	Y			
School 8	N			X
School 9	N			X
School 10	N			X
School 11	N			X
School 12	N			X
School 13	Y			
School 14	N			X
School 15	N			X
School 16	Y			
School 17	N			X
School 18	N			X
School 19	N			X
School 20	N			X
School 21	Y			
School 22	Y			
School 23	Y			
School 24	Y			
School 25	Y			
School 26	N			X
School 27	N			X
School 28	N			X
School 29	N			X
School 30	N			X
School 31	Y			
School 32	N		X	
School 33	Y			
School 34	Y			
School 35	N			X
School 36	N			X
School 37	N			X
School 38	Y			

Table A.1 (cont.)
Schools involved in this study and reasons for elimination (if applicable).

School Name	Elligable?	No Data	White	Black/Hispanic
School 39	N			X
School 40	Y			
School 41	Y			
School 42	Y			
School 43	Y			
School 44	N			X
School 45	Y			
School 46	Y			
School 47	Y			
School 48	Y			
School 49	N			X
School 50	Y			
School 51	Y			
School 52	N			X
School 53	N			X
School 54	N			X
School 55	N			X
School 56	Y			
School 57	Y			
School 58	N		X	
School 59	Y			
School 60	N		X	
School 61	N			X
School 62	N			X
School 63	N		X	
School 64	N			X
School 65	Y			
School 66	Y			
School 67	Y			
School 68	Y			
School 69	N			X
School 70	N		X	
School 71	Y			
School 72	Y			
School 73	Y			
School 74	Y			
School 75	N			X
School 76	N			X
School 77	Y			
School 78	Y			
School 79	N			X
School 80	N			X

Table A.1 (cont.)
Schools involved in this study and reasons for elimination (if applicable).

School Name	Elligable?	No Data	White	Black/Hispanic
School 81	N			X
School 82	Y			
School 83	Y			
School 84	N			X
School 85	N			X
School 86	Y			
School 87	Y			
School 88	N			X
School 89	N			X
School 90	N			X
School 91	N			X
School 92	N			X
School 93	N			X
School 94	Y			
School 95	N			X
School 96	N			X
School 97	N			X
School 98	N			X
School 99	Y			
School 100	N			X
School 101	N	X		
School 101	Y			
School 103	Y			
School 104	N			X
School 105	N			X
School 106	N			X
School 107	Y			
School 108	N			X
School 109	N			X
School 110	Y			
School 111	Y			
School 112	Y			
School 113	Y			
School 114	N			X
School 115	N			X
School 116	N			X
School 117	N			X
School 118	N			X
School 119	N			X
School 120	Y			
School 121	Y			
School 122	Y			

Table A.1 (cont.)
Schools involved in this study and reasons for elimination (if applicable).

School Name	Elligable?	No Data	White	Black/Hispanic
School 123	Y			
School 124	Y			
School 125	Y			
School 126	Y			
School 127	N			X
School 128	N			X
School 129	Y			
School 130	N			X
School 131	N			X
School 132	N			X
School 133	N			X
School 134	Y			
School 135	Y			
School 136	Y			
School 137	Y			
School 138	N			X
School 139	Y			
School 140	N			X
School 141	N		X	
School 142	Y			
School 143	Y			
School 144	Y			
School 145	Y			
School 146	Y			
School 147	Y			
School 148	N			X
School 149	N			X
School 150	N			X
School 151	N			X
School 152	Y			
School 153	N			X
School 154	Y			
School 155	N			X
School 156	N			X
School 157	N			X
School 158	N			X
School 159	Y			
School 160	N			X
School 161	Y			
School 162	Y			
School 163	Y			
School 164	Y			

Table A.1 (cont.)
Schools involved in this study and reasons for elimination (if applicable).

School Name	Elligable?	No Data	White	Black/Hispanic
School 165	N			X
School 166	Y			
School 167	Y			
School 168	Y			
School 169	N		X	
School 170	N		X	
School 171	N		X	
School 172	N		X	
School 173	N	X		
School 174	N			X
School 175	N			X
School 176	Y			
School 177	N	X		
School 178	N			X
School 179	N		X	
School 180	N			X
School 181	Y			
School 182	Y			
School 183	N			X
School 184	Y			
School 185	Y			
School 186	Y			
School 187	Y			
School 188	Y			
School 189	Y			
School 190	N			X
School 191	Y			
School 192	N			X

Notes. Psynudonyms given for school names. A list of schools involved can be obtained by contacting the author.

Table A.2
2015-2016 Data profile for schools involved in this study

School Name	7EW	7EH	7EB	7MW	7MH	7MB	8EW	8EH	8EB	8MW	8MH	8MB	8SW	8SH	8SB
School 1	352.4	392.3	303.7	348.3	361.5	270.4	359.3	NA	311.8	294.2	NA	147.1	342.1	NA	182.4
School 4	327.7	NA	288.2	330.8	NA	276.5	361.1	NA	329.4	192.2	NA	220	334.1	NA	182.4
School 5	390.6	416.7	338.7	369.1	316.7	322.6	393.4	361.5	354.5	353.5	320	329.1	380.3	342.3	339.3
School 6	410.7	353.8	338.7	397.7	330.8	238.7	418.6	313.3	354.5	354.7	241.7	228.6	400	286.7	259.1
School 7	358	NA	331.4	361.1	NA	300	414.5	395.2	348.5	362.9	368.8	259.3	363.7	357.1	281.9
School 13	298.4	272.7	NA	295.3	209.1	NA	310.2	200	NA	229.3	180	NA	276.3	208.3	NA
School 16	409.1	NA	239.5	272.7	NA	178.9	347.8	NA	320.9	195.7	NA	251.2	213	NA	265.1
School 21	388.3	NA	264	371.5	NA	166.7	410.6	NA	292.9	336.1	NA	177.3	375.8	NA	253.6
School 22	388.4	278.9	226.7	395.6	277.3	146.9	420	305.3	340.7	351.8	194.7	240.9	376	147.4	279.3
School 23	312.1	NA	162.5	307	NA	193.1	307.2	NA	207.4	208	NA	139.6	310.3	NA	230.9
School 24	298.8	176.2	126.2	292.5	138.1	158.1	372.3	268.8	129.4	246.6	190.9	150	331	175	151
School 25	257.2	308.3	272.4	340.3	283.3	217.2	368	320	286.2	291.7	288.2	185.7	363.3	315	213.8
School 31	311.1	333.3	NA	271.9	275	NA	330.6	250	NA	269.8	180	NA	325.3	270	NA
School 33	325.8	NA	243.2	280.6	NA	223.2	353.6	170	299.1	288.4	130	222.1	327.5	150	247.8
School 34	380	NA	238.8	330	NA	208.8	260	NA	250	253.3	NA	225.9	286.7	NA	260.3
School 38	363.9	240	NA	326.4	360	NA	380.1	390	NA	346.5	NA	NA	412.5	240	NA
School 40	368.2	333.3	320.5	343.8	283.3	273.3	367.3	380	281.8	348.8	333.3	145.2	366.8	386.7	272.7
School 41	399.6	350	NA	399.6	340	255.2	376.2	NA	357.7	300.7	NA	309.5	371.2	NA	350
School 42	363	NA	308.3	392.5	NA	133.3	364.4	NA	306.7	326.3	NA	261.5	381.2	NA	293.3
School 43	378.2	NA	310.5	361.1	NA	278.9	400	NA	282.4	300	NA	186.7	396.7	NA	288.2
School 45	381.3	358.3	317.4	375.4	366.7	310.9	395.4	352.9	366.7	321.8	250	304.5	374.7	335.3	337
School 46	384.7	346.7	226.3	368.3	300	294.7	400	392.3	357.9	325.4	330	318.3	371.8	346.2	331.6
School 47	396.1	400	362.5	375.1	376.9	325	414.1	354.5	368.4	349.2	NA	311.1	384	336.4	342.1
School 48	331.1	NA	138.5	314.1	NA	200	340.5	NA	192.3	286.3	NA	NA	308.4	NA	130.8
School 50	331.3	384.6	NA	337.9	369.2	NA	359.5	390	NA	192.9	NA	NA	363.3	335	NA
School 51	339.3	268.2	348.6	307.1	168	230.1	347.1	336.4	282.5	NA	NA	NA	320.6	305.9	251.1
School 56	323.9	NA	333.3	281.7	NA	143.8	318.2	NA	317.4	220.4	NA	204.3	322.7	NA	296.6

Table A.2 (cont.)
2015-2016 Data profile for schools involved in this study

School Name	7EW	7EH	7EB	7MW	7MH	7MB	8EW	8EH	8EB	8MW	8MH	8MB	8SW	8SH	8SB
School 57	315.7	NA	247.6	308.1	NA	200	323	NA	267.6	306.2	NA	211.8	298.1	NA	208.8
School 59	350	261.5	270.7	336.9	284.6	230	363.6	330	287.8	366.9	270	259.5	340.5	180	175.7
School 65	267.6	273	253.8	266.4	272.4	176.9	277.1	250	265.2	243.8	230.6	176.2	293	267.7	152.2
School 66	323.3	294.9	258.5	303.6	264.4	241.5	322.7	328.4	258.1	273.4	276.7	197.6	342.4	320.3	272.1
School 67	370.7	319.7	279.4	331.6	269.9	238.1	371.1	313.8	302.1	272.9	245.7	181.8	350.2	295	250
School 68	335.2	300	288.7	308.7	284.6	224.5	370.6	210	271.4	283.7	160	191.3	347.9	240	242.9
School 71	320.5	205.9	NA	273	152.9	NA	300.8	268.2	330.8	220.8	177.3	184.6	274.6	159.1	207.7
School 72	323.6	145.5	NA	308.5	163.6	NA	353.9	338.5	354.5	301.1	300	254.5	347.2	346.2	318.2
School 73	153.8	209	125	183.3	215.2	165.1	234.9	196.2	173.6	217.9	173.6	167.8	167.4	164	143.9
School 74	336.8	NA	175	319.7	NA	187.5	329.5	NA	257.9	293.1	NA	207.9	284.3	NA	164.9
School 77	429.9	NA	274.3	408.5	NA	254.3	415.4	NA	345.5	382.7	NA	200	389.1	NA	154.5
School 78	431.3	NA	252.9	420.5	NA	223.5	437.9	NA	271.4	413	NA	246.4	399.4	NA	246.4
School 82	364.4	287	247.5	343.3	276	242.5	364.4	266.7	329.2	282.7	246.4	210.5	353.3	277.4	314.6
School 83	382.8	370.8	335.8	364.4	329.2	296.2	378.9	368.2	288.5	338.9	323.1	173.7	373.7	359.1	311.5
School 86	363.5	347.1	270.6	365	331.3	264.7	363	366.7	330.8	303.4	271.4	341.7	330.6	286.7	307.7
School 87	351.4	NA	271.4	351.5	NA	169.2	379.3	360	315.4	315	321.4	230	371.3	313.3	276.9
School 94	360.9	NA	310.3	347.6	NA	300	382.5	NA	321.4	223.1	NA	176	363.5	NA	264.3
School 99	348.1	362.5	228.6	327.4	337.5	192.9	342.5	306.3	263.6	317.4	293.8	136.4	324.2	306.7	154.5
School 102	372.1	282.3	NA	325	264.6	NA	360.4	319.2	NA	252.7	175.4	NA	319	187.7	NA
School 103	374.3	256.5	NA	331.1	241.7	NA	371.8	238.5	NA	361.5	223.1	NA	348.7	153.8	NA
School 107	301.2	250	NA	318	279.6	NA	324.8	244.1	NA	271.2	246.7	NA	323.8	144.1	NA
School 110	314.3	NA	275.9	287.3	NA	269	335.7	NA	292.3	214.3	NA	200	332.1	NA	180.8
School 111	327.3	315.8	NA	380.2	344.4	NA	398.3	350	NA	367.1	350	NA	400.7	350	NA
School 112	360.2	319.5	264.3	353.3	319.5	264.3	346.3	333.3	317.9	295.7	239.4	272	347.7	313.9	324.1
School 113	327.3	275.5	229.1	303.4	237.3	235.1	291.4	263.3	279.3	254.5	159.1	188.9	342.6	285.7	275.9
School 120	377.4	361.1	236.8	356	325	212.3	376	308	307	330.1	271.7	235.2	368.8	300	264.9
School 121	394.4	361.7	219.4	370.3	316.7	138.7	396.1	351.6	300	344.2	257.7	252.8	382.4	335.5	243.8

Table A.2 (cont.)
2015-2016 Data profile for schools involved in this study

School Name	7EW	7EH	7EB	7MW	7MH	7MB	8EW	8EH	8EB	8MW	8MH	8MB	8SW	8SH	8SB
School 122	409.9	383.3	286.7	418.9	341.7	297.8	419.3	385	293.8	375.9	329.4	243.5	400	328.6	254.2
School 123	406.7	359.1	308.7	388.2	290.9	273.9	397.1	306.7	296.7	338.5	306.7	250	397.8	313.3	280.2
School 124	383.7	293.8	296.2	372.7	275	246.2	416.7	343.8	300	329	231.3	207.1	395.1	262.5	286.7
School 125	382.6	NA	188.9	368.3	NA	183.3	404	NA	240	299.1	NA	160	386.2	NA	170
School 126	416.3	450	319.4	408.9	307.7	272.2	435.8	335.7	297	367.5	323.1	248.3	394.1	321.4	145.5
School 129	327.2	NA	134.9	284.2	NA	244.2	349.8	NA	180.9	266.2	NA	233.3	313.8	NA	154.3
School 134	385	394.7	323.3	354.7	384.2	148.8	386.1	380.8	325	286	300	186.4	376.5	364	292.3
School 135	363.6	310	278.2	326.5	290	241.6	375.3	377.8	303.6	278	352.9	179.2	343.8	344.4	269.6
School 136	334.1	311.8	250.4	289.5	248.5	167.7	340.2	328.6	289.5	287.3	203.8	200.8	344.8	294.1	249.7
School 137	361.7	339.1	259.1	300	265.2	206.6	345.8	325.9	272.2	251.3	225	223.1	314.3	296.3	249.6
School 139	338.4	323.1	313.3	320.8	207.7	320	344.8	327.3	NA	296.3	NA	NA	361.8	310	NA
School 142	404.3	369.2	296.3	385.5	369.2	272.7	422.2	325	300	324.1	240	246.2	390.6	300	178.6
School 143	372.9	NA	214.8	367	NA	237	397.1	NA	267.9	324	NA	218.5	371.3	NA	178.6
School 144	396.4	NA	236.4	406.5	NA	250	386	327.3	274.2	301.2	NA	186.7	361.8	327.3	200
School 145	410.1	NA	235.7	419.8	NA	289.3	420.9	NA	274.1	340.3	NA	222.7	377.3	NA	144.4
School 146	404.1	NA	240	382.5	NA	200	402.8	NA	283.3	317.6	NA	191.3	372.5	NA	266.7
School 147	382.1	NA	273.7	378.2	NA	210.5	400.5	NA	250	347.1	NA	219	379.3	NA	236.4
School 152	330.2	270	276.9	338.7	278	307.7	351.2	272.2	226.3	263.1	230.6	140	346.5	160.4	257.9
School 154	296.2	127.3	187.2	296.9	163.6	192.9	341.1	169.2	229.8	278	175	170.9	339.8	138.5	145.2
School 159	317.4	306.7	282.8	289.8	281.3	275.9	347.5	317.4	253.6	229.1	221.7	168	314.6	269.6	189.3
School 161	316.7	163.6	184.6	300.8	145.5	NA	313.1	NA	268.8	252.3	200	NA	302.8	NA	268.8
School 162	308.4	194.4	259.3	298.3	138.9	240.7	320	330	248.4	221.8	225	192.6	325.6	310	174.2
School 163	268.7	NA	126.9	249.6	NA	159.3	279.3	NA	285.7	163.7	NA	140	177.5	NA	153.6
School 164	340.8	326.7	262.3	336.8	312.5	166	354.8	317.6	295.7	294.4	180	159.1	330.1	288.2	156.5
School 166	349.3	300	137.5	326.9	273.9	164.7	363.5	321.4	141.2	293.7	234.6	188.2	322.7	296.6	164.7
School 167	296.1	226.7	261.1	288.4	238.9	161.1	284.2	180	300	225.8	240	160	286.2	230	157.9

Table A.2
2015-2016 Data profile for schools involved in this study

School Name	7EW	7EH	7EB	7MW	7MH	7MB	8EW	8EH	8EB	8MW	8MH	8MB	8SW	8SH	8SB
School 168	266.7	318.2	258.6	281	181.8	234.5	302.2	315.4	282.5	190.9	230	194.1	253.3	169.2	162.5
School 176	315.7	266.7	157.1	338.9	285.7	221.4	327.1	266.7	168.8	287.2	NA	292.3	322.7	255.6	187.5
School 181	332.4	242.9	NA	311	257.1	NA	327.7	315.4	141.7	228.6	NA	190.6	299.5	238.5	175
School 182	379.9	352.9	NA	374.6	317.6	NA	377.2	372.2	320	286	293.3	258.3	352.1	322.2	286.7
School 184	337.8	331.7	293.3	307.6	272.5	249.3	355.7	330.2	329.9	298.4	283.7	179.4	364.3	320.8	312
School 185	315.4	278.3	NA	316.4	282.6	NA	356.7	356	NA	316.3	284	NA	333.8	292	NA
School 186	406.6	NA	272.4	389	NA	262.1	410.1	153.8	256.5	342.9	163.6	225.8	373.4	138.5	158.1
School 187	382.5	283.3	319.2	358.5	305.9	300	404	NA	288.9	355	NA	162.5	368.1	NA	261.1
School 188	348.7	325	286.8	321	325	278.9	358.9	325	280	299.6	NA	196.7	359.8	350	262.1
School 189	386.2	315.4	271.4	381.9	275	292.9	404.1	382.4	352.9	381.5	312.5	283.3	396.5	358.8	324.2
School 191	351.5	321.4	250	290.2	257.1	200	355	373.3	191.7	328.4	333.3	166.7	367.5	353.3	316.7

Notes. Columns are labeled by grade/subject/race. For example, 7EW stands for 7th grade, ELA, White. Numbers represent MPI calculated as discussed in chapter three of this document from test scores published by the Department of Elementary and Secondary Education (2017).

Table A.3
2016-2017 Data profile for schools involved in this study

School Name	8EW	8EH	8EB	8MW	8MH	8MB	8SW	8SH	8SB
School 1	374.5	407.1	320	283.7	318.2	290.1	352.1	314.3	308.3
School 4	339.1	NA	345	187.5	NA	158.3	342.9	NA	300
School 5	392.2	373.3	354.8	364.4	346.7	281.8	393.8	341.2	335.5
School 6	416.9	427.3	328.1	352.2	NA	175.9	389.3	318.2	156.3
School 7	391.8	364.7	362.1	350.3	314.3	311.5	368.5	331.3	317.2
School 13	330.1	300	NA	286.3	290.9	NA	283.1	245.5	NA
School 16	400	NA	300	246.7	NA	193.6	334.8	NA	169.2
School 21	409.3	358.3	314.3	333.9	NA	176	361.3	333.3	260.7
School 22	412.2	295	277.4	315.2	226.7	131.3	393.9	260	155.6
School 23	331.6	NA	207.9	250.8	NA	150	332.5	NA	165.8
School 24	325.6	275	184.4	278.4	160	168.4	319.8	270	148.9
School 25	347.4	330.1	266.7	280.6	NA	162.1	337.9	323.1	178.8
School 31	288.9	166.7	NA	251.6	180	NA	299.4	320	NA
School 33	341.5	NA	273.5	260.4	NA	198.2	333.9	NA	241.9
School 34	340	NA	253.9	283.3	NA	203.1	300	NA	262.7
School 38	356.7	370	NA	313.1	NA	NA	403.8	NA	380
School 40	369.6	281.8	297.9	326.1	318.2	256.1	375.9	318.2	266.7
School 41	399.6	430	265.6	323.5	NA	237.0	384.9	280	144.8
School 42	391.8	NA	264.7	369.1	NA	166.7	404.1	NA	282.4
School 43	394.7	NA	370	311.4	NA	241.2	380.6	NA	305
School 45	392.1	381.8	363.6	298.1	NA	283.3	386.3	345.5	322.7
School 46	392.8	366.7	338.9	304.7	180	264.7	365.4	335.7	300
School 47	407.8	384.6	366.7	346.8	NA	343.8	386.3	392.3	347.1
School 48	334.3	NA	272.7	302.9	NA	254.6	349.3	NA	190.9
School 50	375.1	346.2	NA	209.3	NA	NA	376.22	292.3	NA
School 51	350	292	287.4	NA	NA	NA	326.7	264	240.6
School 56	312.5	333.3	282.4	195.2	191.7	166.7	334.3	192.3	270.6

Table A.3 (cont.)
2016-2017 Data profile for schools involved in this study

School Name	8EW	8EH	8EB	8MW	8MH	8MB	8SW	8SH	8SB
School 57	303.4	NA	240	315.1	NA	245	NA	292.7	130
School 59	335.9	320	264.3	324.5	290	249.4	325.5	230	237.7
School 65	299.2	291.6	276.9	232	215.6	268	322.9	314.1	285.7
School 66	331.4	288.1	263.5	273.3	247.2	200	346.9	321.7	271.2
School 67	374.9	327.5	283.3	290.2	265.6	155	358.8	300	259.1
School 68	333.8	171.4	262	229.3	242.9	172.5	339	307.1	260
School 71	292	240	NA	230.4	152.4	NA	263.2	123.8	NA
School 72	369.4	340	NA	305.7	230	NA	359.9	310	NA
School 73	246.3	245.3	188.9	202.3	184.9	137.3	202.3	215.5	144.8
School 74	362.3	NA	313.5	317.9	NA	224.3	308.7	NA	181.1
School 77	426.5	NA	290.3	383.7	NA	235.5	390.4	NA	183.4
School 78	437.8	NA	300	406.1	NA	219.4	405.6	NA	154.8
School 82	363.8	313	264.4	301.6	178.9	242.9	344.3	208.7	248.9
School 83	379.9	376.9	318.3	344.5	347.8	300	374.2	353.9	326.7
School 86	372.2	370.6	306.7	320.5	326.7	153.9	345.9	352.9	226.7
School 87	377.8	NA	300	353.3	NA	308.3	372.3	NA	315.4
School 94	384.8	NA	350	284.9	NA	215.8	360.9	NA	311.5
School 99	349.7	383.3	285.7	328.5	306.3	235.7	329.4	326.3	153.3
School 102	380.6	317.7	NA	305.6	250.6	NA	339.8	286.1	NA
School 103	353.3	227.3	NA	336.4	222.7	NA	320.8	127.3	NA
School 107	309.3	262.3	NA	289.8	265.5	NA	296.5	145.5	NA
School 110	310.5	NA	280.1	242.1	NA	203.2	268.4	NA	232.3
School 111	383.3	300	NA	353.7	300	NA	387.3	309.5	NA
School 112	374.4	300	290	324.4	309.1	242.9	383.9	358.5	280
School 113	338.6	304.2	266.7	303.7	262.2	240.5	335.3	289.8	251.3
School 120	399.1	377.3	301.8	307.9	305	200	373.9	340.9	233.3
School 121	393.6	383.7	256.7	343.6	313.9	220.7	381.4	347.7	156.7

Table A.3 (cont.)
2016-2017 Data profile for schools involved in this study

School Name	8EW	8EH	8EB	8MW	8MH	8MB	8SW	8SH	8SB
School 122	417.4	369.2	302.5	381.9	300	294.6	378.1	323.1	287.5
School 123	422.8	378.3	327	344.3	277.3	283.1	429.2	341.7	295.9
School 124	416.5	356.3	340	330.3	233.3	251.6	387.5	312.5	243.3
School 125	376.7	NA	227.8	306.9	NA	194.1	376.1	NA	161.1
School 126	428.7	375	308.1	379	NA	297.3	410.7	266.7	297.3
School 129	338.3	NA	138.6	266.7	NA	226.2	326.2	NA	159.1
School 134	390.5	392.9	288.6	297.2	276.5	197.1	390.5	382.1	288.6
School 135	354.6	344.4	264.5	268	NA	200	350	338.9	247.4
School 136	339.3	345.2	268.5	250.9	187.5	206.4	325.9	254.6	227.7
School 137	347.8	328.6	270.3	189.7	250	177.1	356.5	280.9	169.6
School 139	349.9	353.9	315.4	306.9	175	291.9	364.8	338.5	338.5
School 142	439.6	450	329.1	349.7	NA	264	396.1	345.5	298.2
School 143	392.8	NA	264.3	316.8	NA	192.3	360.7	NA	171.4
School 144	395.8	NA	234.5	300.7	NA	170.4	363.3	NA	175.9
School 145	415.7	NA	264.3	326.6	NA	192.3	370.9	NA	170.4
School 146	422.5	NA	240.9	326.9	NA	180	387.1	NA	186.4
School 147	384.4	NA	215	334.3	NA	194.7	384.4	NA	265
School 152	346.9	306	308.3	261	226.8	NA	361.8	292.3	341.7
School 154	308.1	158.3	215.6	247.8	181.8	194.4	312.1	175	200
School 159	353.5	361.1	309.7	234.3	126.3	160.9	298.8	278.9	154.8
School 161	312.2	270	217.7	196.9	220	129.4	288.9	160	137.5
School 162	303.5	257.9	250	179.4	211.1	169.2	279.1	184.2	196.7
School 163	286.1	NA	150	180.9	NA	155.6	263.4	NA	166.7
School 164	342.4	316.7	306	273.5	153.9	231.1	339.6	284.1	284
School 166	368.5	288	246.7	292.1	209.5	131.3	345.7	300	140
School 167	343.6	240	304.6	182.1	200	281.8	299.3	180	313.6

Table A.3 (cont.)
2016-2017 Data profile for schools involved in this study

School Name	8EW	8EH	8EB	8MW	8MH	8MB	8SW	8SH	8SB
School 168	302.6	385.7	292.6	224.1	227.3	180	168.4	178.6	148.2
School 176	334.5	300	NA	285.6	230	NA	323.2	250	NA
School 181	368.6	333.3	276.9	202.4	NA	190.9	336.4	258.3	184.6
School 182	398	350	NA	302.9	163.6	NA	354.7	287.5	NA
School 184	366.9	363.6	318.2	296.1	280	230.7	362.6	365.9	301.52
School 185	342.8	269.2	NA	305.5	251.9	NA	327.2	270.4	NA
School 186	415.3	410	272.1	340	NA	198.3	384.7	350	234.4
School 187	393.6	363.2	355.2	357.9	317.7	292	370.9	352.6	321.4
School 188	348.4	318.8	315.8	387.6	145.5	231.3	354.9	337.5	297.4
School 189	387.4	361.1	289.3	346.5	300	229.2	387.2	344.4	289.3
School 191	343.8	300	325	326.8	293.3	291.7	353	340	325

Notes. Columns are labeled by grade/subject/race. For example, 8EW stands for 8th grade, ELA, White. Numbers represent MPI calculated as discussed in chapter three of this document from test scores published by the Department of Elementary and Secondary Education (2017).

Table A.4
Status composite scores for schools involved in this study

School Name	EH	EB	MH	MB	SH	SB	Pts	Poss	Comp
School 1	NA	15	NA	-104	NA	-72	1	3	.33
School 4	NA	-38	NA	57	NA	-108	1	3	.33
School 5	-41	-4	-47	240	38	42	0	6	.00
School 6	-110	38	NA	40	-37	65	-1	5	-.2
School 7	40	-55	-700	-63	470	-38	0	6	.00
School 13	-72	NA	-109	NA	-45	NA	3	3	1.0
School 16	NA	272	NA	-196	NA	-472	-3	3	-1
School 21	NA	-19	NA	-1	NA	-18	2	3	.66
School 22	2	70	-44	66	-41	147	-2	6	-.33
School 23	NA	24	NA	47	NA	110	-3	3	-1
School 24	-51	-42	113	14	-68	-5	2	6	.33
School 25	-65	-1	NA	12	-69	7	0	5	.00
School 31	52	NA	-20	NA	-137	NA	1	3	.33
School 33	NA	25	NA	-7	NA	15	-1	3	-.33
School 34	NA	761	NA	192	NA	41	-3	3	-1
School 38	34	NA	NA	NA	NA	NA	1	1	1.0
School 40	791	-16	-49	-66	390	16	0	6	.00
School 41	NA	624	NA	1082	NA	1032	-3	3	-1
School 42	NA	1201	NA	212	NA	36	-3	3	-1
School 43	NA	-80	NA	-38	NA	-30	3	3	1.0
School 45	-76	-1	NA	-15	4	68	0	5	.00
School 46	240	28	2811	463	16	63	-6	6	-1
School 47	-61	-10	NA	-92	-112	-6	5	5	1.0
School 48	NA	-58	NA	NA	NA	-11	2	2	1.0
School 50	195	NA	NA	NA	196	NA	-2	2	-1
School 51	442	-3	NA	NA	326	24	-2	4	-.5
School 56	NA	37	NA	77	NA	144	-3	3	-1
School 57	NA	14	NA	-26	NA	NA	0	2	.00
School 59	-53	-6	-64	-30	-41	-47	6	6	1.0
School 65	-72	87	24	-153	-65	-74	2	6	.33
School 66	859	5	892	-3	14	8	-4	6	-.66
School 67	-17	33	-10	48	7	-1	-1	6	-.17
School 68	1	-28	-111	-39	-70	-25	4	6	.66
School 71	60	NA	79	NA	21	NA	-3	3	-1
School 72	91	NA	6784	NA	4887	NA	-3	3	-1
School 73	-97	-7	-61	30	-489	145	2	6	.66
School 74	NA	-32	NA	10	NA	7	-1	3	-.33
School 77	NA	95	NA	-19	NA	-12	1	3	.33
School 78	NA	-17	NA	12	NA	64	-1	3	-.33
School 82	-48	182	238	-18	79	147	-2	6	-.33
School 83	-71	-32	-121	-73	40	-24	4	6	.66

Table A.4 (cont.)
Status composite scores for schools involved in this study

School Name	EH	EB	MH	MB	SH	SB	Pts	Poss	Comp
School 86	142	103	-119	535	-116	420	-2	6	-.33
School 87	NA	21	NA	-47	NA	-40	1	3	.33
School 94	NA	-43	MA	47	MA	-50	1	3	.33
School 99	-193	-19	-6	-49	-82	4	4	6	.66
School 102	53	NA	-29	NA	-59	NA	1	3	.33
School 103	-5	NA	-18	NA	-1	NA	2	3	.66
School 107	-42	NA	.00	NA	-16	NA	2	3	.66
School 110	NA	-31	NA	172	NA	-76	1	3	.33
School 111	73	NA	2139	NA	53	NA	-3	3	-1
School 112	11	197	-73	244	-25	340	-2	6	-.33
School 113	21	492	-57	-4	-20	26	0	6	.00
School 120	-68	41	-95	14	-52	35	0	6	.00
School 121	-78	42	-66	34	-28	-10	2	6	.33
School 122	40	-8	76	-34	-23	-38	2	6	.33
School 123	-51	-5	111	-31	4	13	0	6	.00
School 124	-17	-34	-1	-36	-43	33	3	6	.50
School 125	NA	-10	NA	-19	NA	-1	2	3	.66
School 126	-46	-13	NA	-31	98	-54	3	5	.60
School.129	NA	18	NA	23	NA	5	-3	3	-1
School 134	-144	67	248	1	-33	20	-1	6	-.17
School 135	504	26	NA	-31	-20	38	-3	5	-.60
School 136	-151	40	-24	-49	41	3	0	6	.00
School 137	-3	5	-329	-56	320	189	-1	6	-.17
School 139	-123	NA	NA	NA	-49	NA	2	2	1.0
School 142	-110	-10	NA	10	-44	-54	3	5	.60
School 143	NA	-1	NA	18	NA	-2	0	3	.00
School 144	NA	44	NA	14	NA	16	-3	3	-1
School 145	NA	3	NA	14	NA	-14	-1	3	-.33
School 146	NA	52	NA	16	NA	90	-3	3	-1
School 147	NA	13	NA	9	NA	-16	-1	3	-.33
School 152	-48	-69	5	NA	-63	-77	3	5	.60
School 154	-13	-17	-36	-50	-32	-42	6	6	1.0
School 159	-125	-53	1359	20	-56	15	0	6	.00
School 161	NA	113	-144	NA	NA	346	-1	3	-.33
School 162	556	-25	892	-65	508	-46	0	6	.00
School 163	NA	2227	NA	7	NA	304	-3	3	-1
School 164	-31	-39	5	-69	33	-68	2	6	.33
School 166	91	-45	40	52	75	30	-4	6	-.66
School 167	-1	347	26	-251	112	-111	1	6	.17
School 168	228	-50	-92	1479	-112	-78	1	6	.17

Table A.4 (cont.)
Status composite scores for schools involved in this study

School Name	EH	EB	MH	MB	SH	SB	Pts	Poss	Comp
School 176	-43	NA	NA	NA	10	NA	0	2	.00
School 181	187	-51	NA	-70	28	22	-1	5	-.20
School 182	860	NA	2009	NA	125	NA	-3	3	-1
School 184	-87	85	10	-45	-1076	17	0	6	.00
School 185	1040	NA	66	NA	36	NA	-3	3	-1
School 186	-98	-7	NA	21	-85	-30	3	5	.60
School 187	NA	-67	NA	-66	NA	-54	3	3	1.0
School 188	-13	-59	NA	-45	78	-41	3	5	.60
School 189	21	92	-33	20	13	35	-4	6	-.66
School 191	339	-89	784	-78	-9	-45	2	6	.33

*Notes.*Numbers represent the percent change in the gap from the 2016 tested year (8th graders) to the 2017 tested year (8th graders), rounded to the whole number. Columns indicate the subject and race group being examined (i.e. EH is the gap in ELA between White and Hispanic students). Positive numbers indicate an instance where the gap is being widened, negative numbers indicate where a gap is being reduced. NA was used when data was not included in the public testing data released by DESE. Schools were awarded a point if either a gap was reduced by more than 3%, or if the school maintained a score where the racial group being examined tested better than the White counterpart.

Table A.5
Growth composite scores for schools involved in this study

School Name	EH	EB	MH	MB	Pts	Poss	Composite
School 1	-18	12	-161	-109	3	4	.75
School 4	NA	-115	NA	-46	2	2	1.0
School 5	172	-28	-66	78	0	4	0.0
School 6	-118	23	NA	11	-1	3	-.33
School 7	NA	12	NA	-37	0	2	0.0
School 13	19	NA	-105	NA	0	2	0.0
School 16	NA	-41	NA	-43	2	2	1.0
School 21	NA	-24	NA	-23	2	2	1.0
School 22	7	-17	-25	-26	2	4	.50
School 23	NA	-17	NA	-12	2	2	1.0
School 24	-59	-18	-23	-18	4	4	1.0
School 25	-66	-5	NA	-4	3	3	1.0
School 31	651	NA	2508	NA	-2	2	-1.0
School 33	NA	-17	NA	9	0	2	0.0
School 34	NA	-39	NA	-34	2	2	1.0
School 38	-111	NA	NA	NA	1	1	1.0
School 40	151	50	-87	-1	-1	4	-.25
School 41	-161	NA	NA	-40	2	2	1.0
School 42	NA	132	NA	-22	0	2	0.0
School 43	NA	-64	NA	-15	2	2	1.0
School 45	-55	-55	NA	-77	3	3	1.0
School 46	-31	-66	83	-46	2	4	.50
School 47	695	22	NA	-94	-1	3	-.33
School 48	NA	-68	NA	-58	2	2	1.0
School 50	154	NA	NA	NA	-1	1	-1.0
School 51	-18	-31	NA	NA	2	2	1.0
School 56	NA	421	NA	-80	0	2	0.0
School 57	NA	-7	NA	-35	2	2	1.0
School 59	-82	-10	-34	-30	4	4	1.0
School 65	242	62	388	-140	-2	4	-.50
School 66	52	5	-33	18	-2	4	-.50
School 67	-7	0.0	-60	45	1	4	.25
School 68	361	54	-156	-33	0	4	0.0
School 71	-55	NA	-35	NA	2	2	1.0
School 72	-83	NA	-48	NA	2	2	1.0
School 73	101	100	154	257	-4	4	-1.0
School 74	NA	-70	NA	-29	2	2	1.0
School 77	NA	-12	NA	-04	2	2	1.0
School 78	NA	-23	NA	-05	2	2	1.0
School 82	-34	-15	82	-42	2	4	0.5
School 83	-75	31	-109	-35	2	4	0.5

Table A.5 (cont.)
Growth composite scores for schools involved in this study

School Name	EH	EB	MH	MB	Pts	Poss	Composite
School 86	-90	-29	-118	66	2	4	0.5
School 87	NA	-4	NA	-75	2	2	1.0
School 94	NA	-31	NA	45	0	2	0.0
School 99	-133	-46	320	-31	2	4	0.5
School 102	-30	NA	-10	NA	2	2	1.0
School 103	07	NA	27	NA	-2	2	-1.0
School 107	-08	NA	-36	NA	2	2	1.0
School 110	NA	-22	NA	112	0	2	0.0
School 111	48	NA	50	NA	-2	2	-1.0
School 112	-65	-12	-55	-09	4	4	1.0
School 113	-34	-27	-37	-08	4	4	1.0
School 120	34	31	-90	-25	0	4	0.0
School 121	-70	-22	-45	-47	4	4	1.0
School 122	81	-07	06	-28	0	4	0.0
School 123	-07	-02	-31	-46	3	4	.75
School 124	-33	-13	-01	-38	3	4	.75
School 125	NA	-23	NA	-39	2	2	1.0
School 126	259	24	NA	-40	-1	3	-.33
School.129	NA	04	NA	01	-2	2	-1.0
School 134	-76	65	170	-51	0	4	0.0
School 135	-81	05	NA	-20	1	3	.33
School 136	-126	-15	55	-63	2	4	.50
School 137	-15	-24	-273	-87	4	4	1.0
School 139	-126	37	17	177	-2	4	-.50
School 142	-130	02	NA	-24	1	3	.33
School 143	NA	-19	NA	-04	-2	2	1.0
School 144	NA	01	NA	-17	0	2	0.0
School 145	NA	-13	NA	03	0	2	0.0
School 146	NA	11	NA	-19	0	2	0.0
School 147	NA	56	NA	-17	0	2	0.0
School 152	-32	-28	-44	NA	3	3	1.0
School 154	-11	-15	-51	-49	4	4	1.0
School 159	-171	27	117	428	-2	4	-.50
School 161	-73	-29	-115	NA	3	3	1.0
School 162	-60	09	-120	-82	2	4	.50
School 163	NA	-04	NA	-72	2	2	1.0
School 164	82	-54	392	-75	0	4	0.0
School 166	63	-43	56	-01	-1	4	-.25
School 167	49	12	-136	-178	0	4	0.0
School 168	133	24	-103	-05	0	4	0.0

Table A.5 (cont.)
Growth composite scores for schools involved in this study

School Name	EH	EB	MH	MB	Pts	Poss	Composite
School 176	-30	NA	05	NA	0	2	0.0
School 181	-61	NA	NA	NA	1	1	1.0
School 182	79	NA	144	NA	-2	2	-1.0
School 184	-45	10	-54	12	0	4	0.0
School 185	98	NA	59	NA	-2	2	-1.0
School 186	NA	07	NA	12	-2	2	-1.0
School 187	-69	-39	-23	13	2	4	0.5
School 188	25	-47	365	34	-2	4	-.50
School 189	-63	-15	-57	32	2	4	0.5
School 191	45	-82	-01	-61	1	4	.25

*Notes.*Numbers represent the percent change in the gap from the 2016 tested year (7th graders) to the 2017 tested year (8th graders), rounded to the whole number. Columns indicate the subject and race group being examined (i.e. EH is the gap in ELA between White and Hispanic students). Positive numbers indicate an instance where the gap is being widened, negative numbers indicate where a gap is being reduced. NA was used when data was not included in the public testing data released by DESE. Schools were awarded a point if either a gap was reduced by more than 3%, or if the school maintained a score where the racial group being examined tested better than the White counterpart.

Table A.6
Composite scores, category, and APR outcome for schools in this study

School Name	Status	Growth	Category	2016 APR	2017APR
School 1	.33	0.75	One	77.9	80.7
School 4	.33	1.0	One	92.9	88.6
School 5	0.0	0.0	Three	98.6	97.1
School 6	-.20	-.33	Three	98.6	97.1
School 7	0.0	0.0	Three	100	96.4
School 13	1.0	0.0	Two	50.7	59.3
School 16	-1	1.0	Two	77.9	87.9
School 21	.66	1.0	One	97.1	NA
School 22	-.17	0.5	Two	91.4	NA
School 23	-1	1.0	Two	40.0	48.6
School 24	.33	1.0	One	57.1	61.4
School 25	0.0	1.0	Two	87.1	77.9
School 31	.33	-1	Two	65.7	78.6
School 33	-.3	0.0	Three	58.6	58.6
School 34	-1	1.0	Two	55.7	68.6
School 38	1.0	1.0	One	90.7	95.7
School 40	0.0	-.3	Two	98.6	97.1
School 41	-1	1.0	Two	95.7	95.7
School 42	-1	0.0	Three	100	100
School 43	1.0	1.0	One	95.7	100
School 45	0.0	1.0	Two	98.6	100
School 46	-1	0.5	Two	100	97.1
School 47	1.0	-.3	Two	98.6	100
School 48	1.0	1.0	One	63.6	83.6
School 50	-1	-1	Three	82.1	NA
School 51	-.5	1.0	Two	63.6	NA
School 56	-1	0.0	Three	71.4	92.9
School 57	0.0	1.0	Two	50.7	59.3
School 59	1.0	1.0	One	60.0	60.0
School 65	.33	-.5	Two	47.1	71.4
School 66	-.67	-.5	Three	90.0	85.7
School 67	-.17	.25	Two	86.4	80.7
School 68	.67	0.0	Two	65.0	67.9
School 71	-1	1.0	Two	57.1	62.9
School 72	-1	1.0	Two	82.9	95.7
School 73	.66	-1	Two	NA	NA
School 74	-.3	1.0	Two	45.7	64.3
School 77	.33	1.0	One	94.3	92.9
School 78	-.33	1.0	Two	91.4	94.3
School 82	-.3	0.5	Two	73.6	NA
School 83	.67	0.5	One	95.7	NA

Table A.6 (cont.)
Composite scores, category, and APR outcome for schools in this study

School Name	Status	Growth	Category	2016 APR	2017APR
School 86	-.3	0.5	Two	60.7	79.3
School 87	.33	1.0	One	90.0	92.9
School 94	.33	0.0	Two	95.7	85.7
School 99	.67	0.5	One	77.1	81.4
School 102	.33	1.0	One	67.9	77.9
School 103	.67	-1	Two	78.6	84.3
School 107	.67	1.0	One	75.7	81.4
School 110	.33	0.0	Two	54.3	84.3
School 111	-1	-1	Three	98.6	98.6
School 112	-.3	1.0	Two	89.3	96.4
School 113	0.0	1.0	Two	75.0	87.9
School 120	0.0	0.0	Three	98.6	93.6
School 121	.33	1.0	One	98.6	93.6
School 122	.33	0.0	One	91.4	92.9
School 123	0.0	.75	Two	94.3	100
School 124	0.5	.75	One	95.7	97.1
School 125	.67	1.0	One	100	98.6
School 126	.60	-.3	Two	98.6	100
School.129	-1	-1	Three	52.9	84.3
School 134	-.2	0.0	Three	92.1	NA
School 135	-.6	.33	Two	89.3	79.3
School 136	0.0	0.5	Two	47.1	55.7
School 137	-.2	1.0	Two	51.4	57.1
School 139	1.0	-.5	Two	97.1	97.1
School 142	0.6	.33	One	91.4	97.1
School 143	0.0	1.0	Two	94.3	91.4
School 144	-1	0.0	Three	90.0	87.1
School 145	-.3	0.0	Three	90.0	91.4
School 146	-1	0.0	Three	94.3	92.9
School 147	-.3	0.0	Three	94.3	92.9
School 152	0.6	1.0	One	84.3	88.6
School 154	1.0	1.0	One	70.0	70.0
School 159	0.0	-.5	Two	67.9	56.4
School 161	-.3	1.0	Two	55.7	55.7
School 162	.00	0.5	Two	61.4	51.4
School 163	-1	1.0	Two	24.3	54.3
School 164	.33	0.0	Two	67.1	80.0
School 166	-.7	-.3	Three	72.9	77.1
School 167	.17	0.0	Two	50.0	55.0
School 168	.17	0.0	Two	71.4	71.4

Table A.6 (cont.)
Composite scores, category, and APR outcome for schools in this study

School Name	Status	Growth	Category	2016 APR	2017APR
School 176	0.0	0.0	Three	73.6	77.9
School 181	-.2	1.0	Two	77.9	NA
School 182	-1	-1	Three	76.4	82.1
School 184	0.0	0.0	Three	80.0	90.7
School 185	-1	-1	Three	84.3	85.7
School 186	0.6	-1	Two	85.7	NA
School 187	1.0	0.5	One	97.1	97.1
School 188	0.6	-.5	Two	89.3	89.3
School 189	-.7	0.5	Two	98.6	98.6
School 191	.33	.25	One	95.7	95.7

Notes. APR outcomes were retrived from the Missouri Department of Elementary and Secondary Educaiton (2017).