The Impact of Reading Programs as a Map Project Strategy

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THE IMPACT OF READING PROGRAMS AS A MAP PROJECT STRATEGY

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THE IMPACT OF READING PROGRAMS AS A MAP PROJECT STRATEGY

Tena Jones August, 9, 2006  48 Pages

Directed by: Jacqueline Pope-Tarrence, John Bruni, and Judy Davison

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The No Child Left Behind (NCLB) Act of 2001 was enacted to protect the United States’ most vulnerable students and was signed into law in January 2002 (U.S. Department of Education, 2002). For many years, black, Hispanic, special education, and limited English proficient students were not achieving at the same level as their white, middle-class counterparts because schools were not held accountable for their individual progress. The achievement gap is well documented in previous research at all levels of education. Scores on the National Assessment of Educational Progress (NAEP) from 1996 to 2000, obtained from a national sample of 8th- and 12th-grade students indicated that for each grade level, black and Hispanic students scored significantly lower than whites in reading, mathematics, and science (Braswell, Lutkus, Grigg, Santapau, Tay-Lim, & Johnson, 2001; Grigg, Daane, Jin, & Campbell, 2003; O’Sullivan, Lauko, Grigg, Qian, & Zhang, 2003). In Kentucky, the Minority Student Achievement Research Project (MAP) is an educational initiative formed to address the achievement gap and progress all students toward proficiency within the state. Seven school districts (partnership sites) were selected for participation in the program, and individual schools within the districts were selected for participation based on the criteria that at least 25% of their student population was minority (KDE, 2000).
This study was designed to determine if the implementation of reading programs as a MAP strategy impacted 4th- and 7th-grade students’ reading scores on the Kentucky Core Content Test (KCCT) of achievement, as well as the 6th-grade level of the Comprehensive Test of Basic Skills 5 (CTBS/5). The researcher was also interested in how the implementation of these programs may affect the achievement gap between black and white students in the sample. The sample was comprised of 338 4th-grade Kentucky students enrolled in a public elementary school within MAP participating districts during the 2002-03 school year. Archival data of 4th-grade students’ scores on the KCCT reading section from 2000 through 2005 were requested and obtained from the Kentucky Department of Education (KDE). Analyses revealed that MAP students did not perform significantly better than Non-MAP students on the KCCT at any grade levels. Likewise, results showed that MAP students did not obtain significantly higher percentiles on the reading test of the CTBS/5 at the 6th-grade level. The analyses also did not show a convergence of achievement scores between black students and white students regardless of MAP participation on either the state reading test or the norm-referenced test across administrations. The implications of the findings are discussed.
Introduction

The No Child Left Behind (NCLB) Act of 2001 was enacted to protect the United States’ most vulnerable students and was signed into law in January 2002 (U.S. Department of Education, 2002). For many years, black, Hispanic, special education, and limited English proficient students were not achieving at the same level as their white, middle-class counterparts because schools were not held accountable for their individual progress. Under NCLB, accountability is strengthened because states are required to initiate statewide accountability systems covering all public schools (U.S. Department of Education, 2005). These systems must be grounded in challenging standards for reading and mathematics, yearly assessments for all students in grades 3-8, and yearly statewide progress goals that ensure that all students will reach the level of “proficient” by 2014 (U.S. Department of Education, 2005). Testing results and state progress goals must be disaggregated according to poverty, race, ethnicity, disability, and limited English proficiency to ensure that no group is underachieving (U.S. Department of Education, 2003). School systems and individual schools that fail to make adequate yearly progress (AYP) toward state goals will eventually confront penalties and restructuring actions designed to help them meet state goals (U.S. Department of Education, 2003).

With the implementation of the NCLB and its stringent accountability standards, educators have a heightened awareness of the achievement gap that exists between subgroups of minority and disadvantaged students. NCLB asserts that all students will make adequate yearly progress toward established goals, regardless of race or socioeconomic status, with the ultimate goal being that all students will perform at the
proficient level by the year 2014. NCLB seeks to accomplish this task not only with the
aforementioned accountability standards placed on individual states, but by allowing
more flexibility for states and individual communities, emphasizing proven educational
methods and providing more choices for parents (U.S. Department of Education, 2002).
Flexibility is increased for states and school districts which allows them to use federal
education funds to address their own particular needs such as hiring new teachers, or
improving teacher training and professional development (U.S. Department of Education,
2004). NCLB emphasizes utilizing educational methods that have been successful at
improving learning and achievement through strenuous scientific research and supports
these methods with federal money (U.S. Department of Education, 2002). Finally,
parents have increased choices for their children’s education. In schools that fail to meet
state standards for two consecutive years, parents have the option of enrolling their child
at a better-performing public school within the same district (U.S. Department of
Education, 2003). In schools that fail to meet state standards for three consecutive years,
students then also have the additional option of obtaining educational support such as
tutoring or after-school services at the expense of the school district (U.S. Department of
Review of the Literature

According to the Council of the Great City Schools (1999), a commonly accepted definition for the term *achievement gap* is “the tendency for minority students (i.e., Blacks, Hispanics, Native Americans) or students from lower socioeconomic backgrounds to score lower, as groups, than Caucasian students or students from middle-to upper-class socioeconomic backgrounds on standardized achievement tests” (p.15). The achievement gap between whites and minorities has varied throughout the decades. Between 1970 and 1988, minority performance greatly improved. The achievement gap between white and black students decreased by half; the gap between whites and Hispanics decreased by one third (Haycock, 2002). Also, trends shown in the National Assessment of Educational Progress (NAEP), a national assessment of students’ learning, were indicative of blacks’ progress in academic achievement since the 1970s (National Center for Education Statistics, 2000).

The National Center for Education Statistics (1997) reported that the average NAEP mathematics score of 17-year-old blacks rose by 6% between 1973 and 1996, while the average mathematics score of 17-year-old whites remained constant. This trend was more dramatic in reading scores: the average NAEP score of 17-year-old blacks rose by 11% between 1971 and 1996 while the average NAEP reading score of whites remained stable (National Center for Education Statistics, 1997). A report by the Education Trust (2003a) acknowledges a reduction in achievement gap between whites and minorities throughout the 1970s and 1980s but asserts that minority progress was stagnant throughout the 1990s. The report states that currently only 12% of black 4th-graders reach at least the proficient level in reading and 7% of black 8th-graders reach
proficient in math; additionally, only 14% of 4th-grade Hispanics obtain a level of proficiency in reading as compared to 9% of Hispanic 8th-graders reaching the proficient level in math (Education Trust, 2003b).

The achievement gap is well documented in previous research at all levels of education. Scores on the National Assessment of Educational Progress (NAEP) from 1996 to 2000, obtained from a national sample of 8th- and 12th-grade students indicated that for each grade level, black and Hispanic students performed significantly lower than whites in reading, mathematics, and science (Braswell, Lutkus, Grigg, Santapau, Tay-Lim, & Johnson, 2001; Grigg, Daane, Jin, & Campbell, 2003; O’Sullivan, Lauko, Grigg, Qian, & Zhang, 2003).

According to the National Center for Educational Statistics (2000), by the end of high school, most black and Hispanic students have both reading and mathematics skills that are essentially equal to those possessed by white, 8th-grade students. This statistic has remained unchanged since Mingle first reported this in 1987. Bali & Alvarez (2004) reported in their longitudinal study on achievement gap differences that on the California Stanford 9, a nationally-normed achievement test, 23% of black 2nd-graders were categorized as proficient or higher on the reading assessment, while 50% of white 2nd-graders were classified as proficient or higher. Among California’s Hispanic students’, 17% were assessed as proficient or higher in reading. Bali & Alvarez (2004) also reported that on the California Stanford 9 mathematics test 29% of black and 30% of Hispanic 2nd-graders were categorized as proficient or higher, relative to 61% of their white same-grade peers.
Similarly, in an analysis of Kentucky’s state accountability tests, the CTBS/5 and KCCT, Lyons (2004) reported that there was a significant discrepancy in scores evident at the elementary, middle, and high school levels between minority and economically disadvantaged students when compared to their peers. Lyons reported that in areas of mathematics and reading achievement, the achievement gap between groups was smaller on the KCCT than the CTBS/5.

School Correlates and Achievement

In an attempt to explain the significant difference in achievement between groups, Barton (2003) identified 14 correlates of elementary and high school student achievement. Of the 14 correlates, almost half were under the school’s direct control: rigor of curriculum, teacher preparedness and experience, attendance, class size, technology-assisted instruction, and school safety. The remaining correlates are environmental factors that fall outside of the school’s direct control: parent participation, student mobility, birthweight, lead poisoning, hunger and nutrition, reading to young children, television watching, and parent availability.

Studies have supported Barton’s (2003) identified correlates as having a direct impact on achievement for students who are at-risk (Finn, 1998; Haycock, 2002; National Center for Educational Statistics, 2001; National Commission on Teaching & America’s Future, 1996). One correlate of achievement is the rigor of the academic curriculum. Haycock (2002) reports the quality and intensity of high school instruction is the most important predictor of who succeeds in college, more than a student’s class ranking or individual performance on college entrance exams. According to the National Center for Educational Statistics (NCES, 2001) the percentage of high school graduates with
substantial credits in academic courses in 1998 (four years of English, three years of both social studies and mathematics, and two years of a foreign language) are: 46% of white students, 40% of black students, 32% of Hispanic students, and 28% of Native American students. Across the nation, Advanced Placement exams are used to award college credit and are considered to be rigorous. The NCES reported that in 2002 the distribution of Advanced Placement Examinations taken compared to the distribution of high school population was: 66% of white students (out of 62% total population), 4% of black students (out of 17% total population), and 10% of Hispanics (out of 16% total population) (Barton, 2003).

Another correlate that can be controlled directly by the schools is teacher preparedness and experience. Many poor and minority children are taught by teachers with little knowledge or background in the subjects in which they are teaching (Haycock, 2002). According to the National Commission on Teaching and America’s Future (1996), in all subject areas, students in high poverty areas have a greater chance of being taught by a teacher who does not possess a major in the subject in which he or she is teaching; and in the subjects of mathematics and science, approximately half of the teachers at schools with 90% or more minority student enrollment do not meet their particular state’s qualifications to teach those subjects, which is about 30% fewer than in schools with a majority enrollment.

Research has also demonstrated that smaller class sizes seem to have a positive effect on achievement (Finn, 1998). Tennessee’s Project STAR (Student/Teacher Achievement Ratio) began in 1985 with some kindergartners being randomly assigned to classrooms containing only 13 to 17 students; the remaining kindergartners were placed
in one of two control classrooms containing 26 children (Finn, 1998). The findings indicated that children in the experimental group scored higher on tests of achievement than their control counterparts and that the improvements were often greater for minority students and inner-city children than for white students (Finn, 1998).

**Student Achievement and Reading**

It is a likely assumption that student achievement in reading is important because reading is a predictor of overall student success (Juel, 1988; Torgesen, 2002). Students’ reading ability permeates their ability in every other subject in school. For example, Juel (1988) found that poor readers also tend to be poor writers, have lower comprehension of written text, and have slower vocabulary development than that of good readers. If students demonstrate poor reading performance, then their ability to comprehend other subject matter in written text will be diminished making success unlikely. Torgesen (2002) goes further to state that children who develop into adults with poor reading skills are at an extreme disadvantage because demands for high levels of literacy are accelerating in society, which increases the demands for high levels of literacy skills within the workplace.

To ensure that children are developing necessary literacy skills to succeed, the U.S. Department of Education measures and reports the reading performance of students in each state based on a representative sample of that state. The selected students take an assessment comprised of reading material that could be commonly found in or outside of school settings and are considered to be typical reading materials encountered by students (U.S. Department of Education, 2005). Each participant in the sample was asked to complete 2 sections, each comprised of a reading passage and associated comprehension
questions used to measure the student’s understanding of the passage (U.S. Department of Education, 2005). According to the 2002 state reading results, out of 47 jurisdictions, Kentucky students earned a scaled score that was higher than 17 jurisdictions, lower than 13 jurisdictions, and insignificant for 17 jurisdictions (U.S. Department of Education, 2005). The report also found that in 2002, only 30% of Kentucky students performed at the “proficient” level or better; which indicated a 23% gain over the 1992 report. Unfortunately, the 2002 report indicated no significant difference from the 1998 report which reported 29% of Kentucky students were “proficient” or higher (U.S. Department of Education, 2005).

As such, many programs have been developed to strengthen and progress students’ reading skills. Schools that employ the use of Reading Recovery and Read 180 have demonstrated the effectiveness of these programs in improving the reading abilities of at-risk students. Reading Recovery was developed in 1985 as an intervention by Marie Clay to assist children experiencing difficulty reading, after a year of reading instruction (Tunmer & Chapman, 2003). It is designed for 1st grade students who have been identified as “below grade level” (generally the lowest 20%). These children were pulled from their regular classrooms for intensive, 30-minute sessions with highly-trained Reading Recovery teachers in addition to receiving their regular reading instruction (Department of Defense, 1998). The program is discontinued for a child when he or she becomes an independent reader, which generally takes approximately 20 weeks (Pinnell, 1990).

The Department of Defense Education Activity released a report in 1998 with five significant implications for Reading Recovery: (a) children in the Reading Recovery
program outperformed students in the control group in reading and language arts; (b) on reading and language arts subtests, differences were evident between the Reading Recovery group and the control group for black, white, and multiethnic samples; (c) students in Reading Recovery most often scored in the 3rd quartile, while those in the control group most often scored in the 2nd quartile; (d) students' participation in Reading Recovery had an effect on reading scores, while ethnicity and socio-economic variables did not; and (e) 2nd-grade students who had participated in Reading Recovery during the 1st grade but were discontinued from the program before entering the 2nd grade continued to perform at an average level during the school year.

Another program, Read 180, developed by Ted Hasselbring at Vanderbilt University, is a comprehensive reading intervention designed to aid 4th- through 12th-graders who are having difficulty reading (Florida Center for Reading Research, 2005). There are three stages: Stage A is aimed at elementary students, Stage B is for middle school students, and Stage C is for high school students. The goals of the intervention are to improve each student's decoding, fluency, and comprehension skills. Each daily plan “consists of one whole-group instruction session, three small-group, rotating sessions, and whole-group wrap-up time” (FCRR, 2005, p.1). Read 180 is consistent with current literacy research by incorporating phonics, fluency, vocabulary, and comprehension in varying degrees (FCRR, 2005).

Although Reading 180 is a fairly new program, there is current research that suggests that it produces desirable results. In a study conducted with 8th-graders in the Los Angeles Unified School District, 537 low performing students from 58 schools were designated as the experimental group in which Read 180 was implemented (FCRR,
A control group of 536 students, matched on gender, ethnicity, percentage of LEP students, and prior Stanford 9 (SAT-9) performance level, were selected from other eligible 8th-grade students in the district (FCRR, 2005). Results of the SAT-9, administered in the spring, indicated that the treatment group scored significantly higher on the NCES than the control group, even though the two groups had equivalent SAT-9 results the previous spring (FCRR, 2005). Significant results were obtained because although the treatment group performed only moderately better in the post-test, the control group’s NCES scores decreased on the Reading and Language Arts SAT-9 subtests (FCRR, 2005). According to the FCRR this study needs to be replicated to increase the strength of findings since the children utilized in this study were not randomly assigned to conditions.

Another reading program, the Wilson Reading System (WRS) is a research-based program designed for children who experience difficulty with decoding and spelling (Education Commission for the States, 2002). WRS was originally intended for older students with learning disabilities, but the program has since been expanded to target the needs of a variety of students at every level (Education Commission for the States, 2002). WRS utilizes five components for teaching at-risk students: “direct teaching of alphabetic code, direct instruction in language analysis, coordination of reading and spelling instruction, intensive instruction, and teaching for mastery” (Education Commission for the States, 2002, p. 5). These components are utilized in a 12 step program that usually takes 1 to 3 years to complete (Wilson & O’Connor, 1995).

Research has demonstrated the effectiveness the WRS with students identified with learning disabilities (Wilson & O’Connor, 1995). In a study with 220 3rd- and 4th-
grade learning disabled students, the WRS was implemented in their special education pull-out classroom for one year. Pre- and post-test data from the Woodcock Reading Mastery Test –Revised or the Woodcock Reading Mastery Test indicated that the students demonstrated significant growth in word attack, reading comprehension, total reading, and spelling (Wilson & O’Connor, 1995).

Another reading program, Direct Instructional System for Teaching (Distar), has demonstrated little success in improving achievement (Sexton, 1989). Distar is a phonics-based reading program developed by Carl Bereiter and Seigfried Engelmann in the 1960s to help students from lower income families who were behind their peers in language skills (Sexton, 1989). Distar utilizes the following instruction methods: lessons are scripted without deviation, there is rapid teacher/student interaction, teacher provides immediate feedback to mistakes, students are engaged in small groups (similar ability), and skills are tested frequently (Sexton 1989).

In a study by Mosley (1997), 30 6th graders were randomly selected to receive Distar instruction. A control group of 42 students received no additional training outside of the regular classroom. To assess the success of Distar on the experimental group, the results of student performance on the reading comprehension and vocabulary section of the Iowa Test of Basic Skills was analyzed. Results indicated that there were no significant differences between group scores on the reading comprehension or vocabulary sections of the Iowa Test of Basic Skills.

In an effort to identify children who may be at-risk for failure, many schools have begun to implement diagnostic reading tools to assist teachers in delivering early intervention. One such assessment is the Group Reading Assessment and Diagnostic
Evaluation (GRADE). The GRADE is group-administered reading assessment for pre-kindergarten through high school students (Williams, 2001). The GRADE is intended to be used as a diagnostic tool to see what reading skills a child already possesses and what he or she has yet to master. Alternate forms allow teachers to administer the test again at the end of a school year to determine what progress students have made (Williams, 2001).

As aforementioned, the achievement gap between white students and their minority counterparts in areas of reading, mathematics, and science are still areas of great concern within our educational system (Braswell et al., 2001; Grigg et al., 2003; O’Sullivan et al., 2003). Some school districts have begun to address the issue with the formation of programs designed to reduce the achievement gap.

Initiatives to Reduce the Achievement Gap

A study of four successful Texas school districts (Aldine Independent School District (ISD), Brazosport ISD, San Benito Consolidated Independent School District (CISD), and Wichita Falls ISD) was conducted to assess what these districts have done to lead to their overall success with all students. The student profile of these schools is as follows: Aldine ISD- population of almost 50,000 students, 47% Hispanic, 36% black, 14% white, 71% economically disadvantaged; Brazosport ISD- population of 13,247 students, 56% white, 33% Hispanic, 9% black, and 39% economically disadvantaged; San Benito CISD- population of 8,697 students, 97% Hispanic, 3% white and 87% economically disadvantaged; and Wichita Falls ISD- population of 15,293 students, 63% white, 18% Hispanic, 16% black and 46% economically disadvantaged (Skrla, Scheurich, & Johnson, 2000).
The results revealed that each of the districts possessed strongly held equity beliefs that were intertwined with focused equity practices (Skrla, Scheurich, & Johnson, 2000). Personnel (from the superintendent down) at these districts strongly believed that 1) all children have the potential to learn and achieve at high levels, 2) it is the responsibility of the adults to ensure that all students succeed academically, and 3) that equitable and excellent classroom learning is the district’s primary focus (Skrla, Scheurich, & Johnson, 2000). The districts’ key practices were to 1) maintain their primary focus (success for all children), 2) align curriculum to allow smooth transition from grade to grade, 3) develop and nurture the ability of personnel to both contribute and lead, 4) align resource utilization with district beliefs, 5) collect and analyze data to monitor results of student performance, 6) hold personnel accountable for student performance, 7) ensure continued success through evaluation of classroom practices, and 8) form alliances with agencies to further the progress of the school (Skrla, Scheurich, & Johnson, 2000).

The aforementioned Texas school districts have demonstrated tremendous success. Aldine ISD, San Benito CISD, and Wichita Falls were all “Recognized” schools in the state of Texas and Brazosport ISD were honored as “Exemplary” (Skrla, Scheurich, & Johnson, 2000). To be rated “Recognized” at least 80% of all students, as well as, 80% of minority and low-income students must pass the reading, math, and writing sections; to be rated as “Exemplary” the district must have a pass rate of 90% on the same measures (Skrla, Scheurich, & Johnson, 2000). These findings are important because the results may have implications for other schools with significant gaps among student achievement. Specifically, schools with diverse populations may find it
beneficial for all students to participate in programs designed to address issues that affect achievement.

In Kentucky, the Minority Student Achievement Research Project (MAP) was an educational initiative formed to address the achievement gap and move students toward proficiency within the state. The Minority Student Achievement Task Force (MSATF) was established in 2000 with the main purpose of analyzing existing data about the academic performance of Kentucky students, with a particular focus on the achievement gap between students of all different racial backgrounds (Kentucky Department of Education, 2005). MSATF were also charged to examine best practices utilized by schools that were effective in closing the achievement gap between majority and minority students, with the ultimate goal of identifying practices that could later be implemented in Kentucky schools with significant gaps in achievement (Kentucky Department of Education, 2005).

MAP is a collaborative effort between the Kentucky Department of Education (KDE), AEL's Higher Education Co-Venture (University of Kentucky, University of Louisville, and Western Kentucky University), and seven cooperating school districts. The task force was provided demographic information by KDE regarding Kentucky's 176 school districts which indicated that 73% of the state's black students reside within five school districts. This information indicated a subset of school districts for initial implementation of the MAP project. Seven school districts (partnership sites) were selected for participation in the program and individual schools within the districts were selected for participation based on the criteria that at least 25% of their student population was minority (Kentucky Department of Education, 2000). Through a needs assessment at
educators (Bjork, 2002; Pope-Tarrence, 2002). District D also planned for the implementation of leadership and mentoring programs (Bjork, 2002); District E implemented a discipline program to decrease the amount of referrals to the office (Pope-Tarrence, 2002); and District F developed a community-wide committee to address achievement gap issues (Pope-Tarrence, 2002). Finally, one district (District G) conducted a self-evaluation by identifying high achieving/high gap schools and comparing them to high achieving/low gap schools within their own district to possibly identify best practices to reduce the gap between ethnic groups (Bjork, 2002).

The purpose of this study is to determine if the implementation of reading programs as a MAP strategy impacted 4th grade students’ reading scores on the Kentucky Core Content Test (KCCT) of achievement, as well as to determine if the schools that participated in the MAP project demonstrated a convergence of achievement scores over time between their black and white students when compared to non-MAP schools as evidenced later by the same sample’s 7th grade KCCT reading scores. Additionally, the cohort’s 3rd and 6th grade CTBS/5 reading scores will be examined to determine if there is a decrease in the achievement gap on the norm referenced test between black and white students attending MAP schools when compared to the non-MAP schools.
Method

Sample

The sample was comprised of 338 fourth-grade Kentucky students enrolled in a public elementary school within the A, B, or C school districts during the 2002-03 school year. District A is located in the southwestern region of Kentucky, while Districts B and C are located within central Kentucky. The gender composition of the sample included 179 (53%) males and 159 (47%) females, while the ethnic make-up of the sample included: 10 Asian students (3%), 100 black students (29.8%), 7 Hispanic students (2.1%), 6 students classified as other (1.8%), and 213 white students (63.4%).

Within the sample, 159 students attended a MAP school, while 179 students attended a Non-MAP school. The gender composition of the MAP students included 81 males (50.9%) and 78 females (49.1%). The ethnic composition included 5 Asian students (3.1%), 46 black students (28.9%), 4 Hispanic students (2.5%), 5 students classified as other (3.1%) and 99 white students (62.3%). The gender composition of the Non-MAP students included 98 males (54.7%) and 81 females (45.3%). The ethnic composition included 5 Asian students (2.8%), 54 black students (30.5%), 3 Hispanic students (1.7%), 1 student classified as other (.6%) and 114 white students (64.4%).

Materials

The KCCT is a criterion-referenced assessment used to measure students’ academic performance against Kentucky’s educational standards. Each spring, Kentucky students in grades 4, 5, 7, 8, 10, 11, and 12 take the KCCT assessment (Kentucky Department of Education, 2005), which assesses different subjects depending upon one’s
current grade level. For example, a 4th-grade student will take the reading and science subtests (Kentucky Department of Education, 2005).

The KCCT reading subtest for 4th and 7th grade students is comprised of 24 multiple choice items and 6 open-response questions. Within the reading subtest are four domains: Literary reading (e.g., short stories, novels, poetry), Informational reading (e.g., journals, magazines, references materials), Persuasive reading (e.g., newspaper articles, magazines, brochures), and Practical/Workplace reading (e.g., articles, letters, memos, forms) which correspond to Core Content reading standards.

The entire collection of test packets is devised to include 144 different multiple choice items and 36 different open-response questions grounded in 36 different reading passages, which ultimately allows for thorough testing of the reading Core Content each year. The 4th grade reading subtest distributes as follows: Literary reading (50%), Informational reading (25%), Persuasive reading (10%), and Practical/Workplace reading (15%), while the 7th grade reading test distributes as: Literary reading (40%), Informational reading (25%), Persuasive reading (15%), and Practical/Workplace reading (20%).

On the KCCT reading test, each student earns a scaled score that falls between 325-800. Kentucky uses eight performance levels to give these scores meaning: Novice Non-performance, Novice Medium, Novice High, Apprentice Low, Apprentice Medium, Apprentice High, Proficient, and Distinguished (see Table 1). The Novice and Apprentice levels are subdivided into low, medium, and high categories merely to provide a more concise indicator of how close a student’s work level is to the next
Table 1

*KCCT Novice, Apprentice, Proficient & Distinguished Scale Score Ranges (KDE, 2002)*

<table>
<thead>
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<th>Content</th>
<th>Performance Level</th>
<th>Elementary Level</th>
<th>Middle School Level</th>
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<tbody>
<tr>
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<td>Novice Non-Performance</td>
<td>325</td>
<td>325</td>
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<tr>
<td>Reading</td>
<td>Novice Medium</td>
<td>326-451</td>
<td>326-426</td>
</tr>
<tr>
<td></td>
<td>Novice High</td>
<td>452-514</td>
<td>427-477</td>
</tr>
<tr>
<td></td>
<td>Apprentice Low</td>
<td>515-523</td>
<td>478-488</td>
</tr>
<tr>
<td></td>
<td>Apprentice Medium</td>
<td>524-532</td>
<td>489-500</td>
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<tr>
<td></td>
<td>Apprentice High</td>
<td>533-541</td>
<td>501-511</td>
</tr>
<tr>
<td></td>
<td>Proficient</td>
<td>542-601</td>
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<td></td>
<td>Distinguished</td>
<td>602-800</td>
<td>562-800</td>
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</table>

Note. Minimum score = 325, Maximum score = 800


A student’s performance is classified as Novice if the student demonstrates limited, undeveloped, or inaccurate content knowledge, utilizes ineffective communication, and uses inappropriate strategies for problem-solving (Kentucky Department of Education, 2002). The Apprentice level is characterized by the demonstration of some content knowledge, reasonable communication skills that lack a strong conclusion or only partially solves a problem, and effective problem-solving.
strategies with limited success (Kentucky Department of Education, 2002). The Proficient level is described as the demonstration and utilization of a broad base of content knowledge, clear, organized communication, and the utilization of appropriate problem-solving strategies and critical thinking skills (KDE, 2002). Finally, a student’s performance may be classified as Distinguished if he or she demonstrates a comprehensive knowledge of content material, uses complex communication through the use of explicit examples, uses a variety of appropriate problem-solving strategies, and demonstrates insightful reasoning (Kentucky Department of Education, 2002).

**KCCT Correlations**

Data were not available to assess the reliability within the present study, however previous studies have shown the KCCT’s reliability coefficients are similar in magnitude to those reported by the Scholastic Aptitude Test (SAT), the American College Test (ACT), and the Comprehensive Test of Basic Skills (CTBS/5) (Bacci, Koger, Hoffman, & Thacker, 2003). For example, on the 2002 4th grade reading subtest, the reliability coefficient ranged from .86-.88 (Bacci, Koger, Hoffman, & Thacker, 2003). In a report assessing the KCCT’s reliability and validity, the Human Resources Research Organization (HumRRO) stated that correlations between same-subject subtests on the KCCT and the CTBS/5 ranged from .50 to .74 (Sinclair & Thacker, 2004).

Analyses were also conducted to compare performance on both the KCCT and the CTBS by students of various backgrounds. Overall, results indicated that variables such as gender, ethnicity, and socioeconomic status did not differ in impact between the KCCT and the CTBS (Sinclair & Thacker, 2004).
Procedure

Archival data of 4th-grade students' scores on the KCCT reading section from 2000 through 2005 were requested and obtained from the KDE. First, it was determined that students attending school in Districts A, B, and C would comprise the sample since these districts implemented reading components to their curriculum as a result of their participation in the MAP program; Districts D, E, F, and G were eliminated from the sample since strategies to improve reading scores were not implemented.

Schools that participated in the MAP project in districts A, B, and C were matched with Non-MAP schools within the same district on ethnicity and the students' performance on the 3rd-grade CTBS/5 reading section. Schools were determined to be an appropriate match if the ethnic make-up of each school matched on a criteria of + or - 5% for black and white students\(^1\). Schools also were matched on ability level prior to the implementation of the MAP program. If significant differences were not detected between school means on the 2001 CTBS/5 reading section, then schools were determined an appropriate match. Matching the schools on the 3rd-grade level of the CTBS/5 prior to the implementation of the MAP program would also provide an indicator of student achievement pre- and post- MAP. Two school districts had one MAP school each that was deemed to be unmatchable based on the set criteria (District A and District B) and were therefore excluded from analyses. Also, excluded from the sample were the remaining schools in Districts A, B, and C that were not identified as a

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\(^1\) Researchers examined ethnicity matches at + or − 3% and 4%. Prior to 5% was a significant drop-off in the number of matches that could be obtained.
MAP school or a school that had been matched with a MAP school. Therefore, eight elementary schools remained in the sample.

The data files were combined to contain each student’s 3rd-grade CTBS reading scores, 4th-grade KCCT reading scores, 6th-grade CTBS reading scores, and 7th-grade KCCT reading scores. To be included in the data set, each child had to remain accountable to the elementary school he or she attended when the MAP project was implemented until he or she transitioned to the middle school level. This would allow the researcher to compare the same cohort for differences between their 4th- and 7th-grade KCCT reading scores and 3rd- and 6th-grade CTBS reading scores.
Results

To help determine whether the implementation of reading programs influenced student performance on the 4th and 7th grade levels of the KCCT reading subtest, several analyses were conducted. First, students’ performance on the KCCT reading subtest was examined to determine if students in the MAP schools performed higher than students attending Non-MAP schools. Next, the effects of ethnicity on KCCT performance were analyzed to determine if there was a significant difference in performance based on a student’s ethnicity. Then analyses were conducted to determine the effects of MAP participation and ethnicity on performance on the reading subtest of the KCCT. Finally, analyses were performed to determine if there was a change in the achievement gap between black and white students between the 4th and 7th grade administrations of the KCCT reading subtest. These analyses were also replicated for student performance on the CTBS/5.

Reading Performance by MAP Schools VS Non-MAP Schools

To examine the testing performance of MAP students compared to Non-MAP students, independent sample t tests were performed between the groups across measures. Two-tailed tests were used because although we may expect to see an increase in performance as a result of the MAP strategies, a decrease was possible. To protect against significant results occurring by chance, the Bonferroni procedure was used to obtain an adjusted p value (adjusted p = .005). In this set of analyses, whether a student attended a MAP school or Non-MAP school is the independent variable and the student’s reading scores are the dependent variable (See Table 2).
Table 2

*Mean Scores on the KCCT Reading Subtest by Groups*

<table>
<thead>
<tr>
<th>Group</th>
<th>4th grade</th>
<th>7th grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean score</td>
<td>SD</td>
</tr>
<tr>
<td>MAP Participation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAP Schools</td>
<td>546.11</td>
<td>37.331</td>
</tr>
<tr>
<td>N = 158</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-MAP Schools</td>
<td>540.10</td>
<td>29.740</td>
</tr>
<tr>
<td>N = 177</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black students</td>
<td>526.05</td>
<td>33.687</td>
</tr>
<tr>
<td>N = 99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White students</td>
<td>550.85</td>
<td>31.375</td>
</tr>
<tr>
<td>N = 212</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Minimum score = 325, Maximum score = 800

Results indicated that 4th grade students in the MAP program did not perform significantly better on the KCCT reading section than 4th grade students in a Non-Map school \(t(333) = -1.638, p > .005, \text{ns.}\) Similarly, results also indicated no significant findings between MAP students and Non-MAP students on the 7th grade level of the KCCT reading section \(t(334) = -1.425, p > .005, \text{ns.}\)

*Reading Performance by Ethnicity*

The effects of ethnicity on testing performance were also compared. In this set of analyses, a student’s ethnic background (whether he or she is black or white) is the independent variable and the students’ reading scores remain the dependent variable.

Results indicate that at each grade level, white students performed significantly higher than their black counterparts (see Table 2). On the 4th grade KCCT reading section, white students performed significantly higher than black students \(t(309) = -6.341, p < .005.\) A small effect size of \(\eta^2 = .15\) was found. According to Cohen (1988), any

\(^2\) SEM was not available for KCCT 4th or 7th grade reading subtests.
correlation larger than .5 is considered a large effect, .3-.5 is considered a moderate effect, and .1-.3 is considered a small effect. These results were also replicated at the 7th-grade level $t(309) = -7.317, p < .005, \eta^2 = .15$. Both means obtained by white students fell in the “Proficient” category for performance level, while both means obtained by black students fell in the “Apprentice Medium” category.

**Reading Performance by MAP and Ethnicity**

The effects of a student’s ethnicity and whether he or she attended a MAP or Non-MAP school were examined to determine what differences in testing performance were observed. For this set of analyses, ethnicity and MAP participation were the independent variables and reading test results were the dependent measure. For this set of analyses, ethnicity and MAP participation were the independent variables and reading test results were the dependent measure. Overall, no significant results were indicated when comparing group scores regardless of MAP participation and ethnicity (see Table 3). On the KCCT reading section, white students in a MAP school did not perform significantly higher than white students attending a Non-MAP school at either the 4th or 7th grade levels $t(210) = -1.912, p > .005$, ns, $t(210) = -1.966, p > .005$ ns respectively. Similarly, results also showed no difference between black students who attended a MAP school and those who attended a Non-MAP school at both the 4th and 7th grade levels of the KCCT reading test $t(97) = -.738, p > .005$ ns, $t(97) = -.212, p > .005$ ns.

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3 Additional analyses conducted to examine the interaction between MAP participation and ethnicity revealed no significance. Therefore only independent samples t tests were reported to remain consistent throughout the document.
Table 1

Mean Scores on the KCCT Reading Subtest by MAP Participation and Ethnicity

<table>
<thead>
<tr>
<th>Group</th>
<th>4th grade Mean score</th>
<th>SD</th>
<th>7th grade Mean score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAP Schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black students</td>
<td>526.83</td>
<td>36.301</td>
<td>493.78</td>
<td>29.546</td>
</tr>
<tr>
<td>N = 46</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White students</td>
<td>555.27</td>
<td>35.779</td>
<td>527.47</td>
<td>30.701</td>
</tr>
<tr>
<td>N = 98</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-MAP Schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black students</td>
<td>525.38</td>
<td>31.581</td>
<td>498.59</td>
<td>30.881</td>
</tr>
<tr>
<td>N = 53</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White students</td>
<td>547.05</td>
<td>26.604</td>
<td>519.48</td>
<td>28.421</td>
</tr>
<tr>
<td>N = 114</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Minimum score = 325, Maximum score = 800

Change in Achievement Gap Between Test Administrations

The differences in achievement between black and white MAP students, and black and white Non-MAP students, were compared at both the 4th and 7th grade levels to determine if there was a decrease in the gap between the two ethnic groups related to MAP participation on the KCCT reading test across administration years. Since the performance scale changes between the 4th (elementary level) and the 7th grade (middle school level), the groups’ mean scores could not be statistically compared and the determination of convergence was based on the groups’ performance level. The findings indicate that there was no difference in the magnitude of the achievement gap between ethnic groups, regardless of MAP participation, across test administrations.

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4 Analyses could not be performed to determine a significant difference between the 4th grade and 7th grade levels of the KCCT reading subtest because it would appear that the students' scores significantly decreased between the two test administrations, even though the students' scores remained consistent and it was the scale that changed. See Table 1 for scale differences.
Results indicate that white students in a MAP school performed significantly higher than black students in a MAP school on the 4th-grade KCCT reading test, \( t(142) = -4.427, p < .005, \eta^2 = .12 \). On the 7th-grade level of the KCCT reading test, the white MAP students continued to score significantly higher than the black MAP students \( t(142) = -6.166, p < .005, \eta^2 = .21 \). On both test administrations, the white MAP students’ mean score fell in the “Proficient” range and the black MAP students’ mean score corresponded to the “Apprentice Medium” range, indicating that there was not a change in the magnitude of the gap between black and white MAP students across years.

These results were replicated when making the same comparisons for the Non-MAP students. Results indicate that on both the 4th- and 7th-grade KCCT reading sections, white Non-MAP students performed significantly higher \( t(165) = -4.612, p < .005, \eta^2 = .05 \) than black Non-MAP students \( t(165) = -4.326 p < .005, \eta^2 = .11 \). The white Non-MAP students’ mean scores across both grades fell in the “Proficient” level; while the black Non-MAP students’ mean score remained in the “Apprentice Medium” across years, indicating again no decrease in the achievement gap between ethnic groups.

\textit{Results of Cohort’s Performance on the CTBS/5}

In an effort to provide a comprehensive view of what effects the MAP program may have had on student achievement across years, the cohort’s performance on the CTBS/5, a nationally normed achievement test, was also examined. The findings from the previous set of analyses were supported by replicated results of the students’ performance on the CTBS/5. Therefore only a brief explanation is provided. The students’ 3rd-grade CTBS/5 results were only obtained in order to match the MAP schools with the Non-MAP schools on ability level prior to the implementation of the
MAP program. Sixth grade CTBS/5 results were analyzed and later compared to the 3rd-grade results to determine if any decrease in the magnitude occurred across test administrations. This also provided an indicator for student performance pre- and post-MAP implementation.

There was no significant difference in performance between MAP students and Non-MAP students on the 6th-grade CTBS/5 reading test \( t(334) = -1.244, p > .005, \text{ns} \) (see Table 4). Results by ethnicity indicated that white students, regardless of MAP participation, outperformed black students on the 6th-grade CTBS/5 \( t(309) = -7.412, p < .005, \eta^2 = .15 \) (see Table 4).

Table 4

*Mean Percentiles on the CTBS/5 Reading Subtest by Groups*

<table>
<thead>
<tr>
<th>Group</th>
<th>3rd grade Mean scores</th>
<th>3rd grade SD</th>
<th>6th grade Mean scores</th>
<th>6th grade SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAP Participation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAP Schools</td>
<td>54.91</td>
<td>28.802</td>
<td>53.59</td>
<td>27.930</td>
</tr>
<tr>
<td>N = 158</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-MAP Schools</td>
<td>48.93</td>
<td>27.244</td>
<td>49.88</td>
<td>26.757</td>
</tr>
<tr>
<td>N = 178</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black students</td>
<td>38.61</td>
<td>24.746</td>
<td>35.91</td>
<td>23.769</td>
</tr>
<tr>
<td>N = 100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White students</td>
<td>58.85</td>
<td>27.841</td>
<td>58.80</td>
<td>26.079</td>
</tr>
<tr>
<td>N = 212</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Scores reported in national percentiles.

On the CTBS/5, analyses indicated that 6th-grade white students who attended a MAP school obtained percentiles that were no different than white students who attended a Non-MAP school \( t(210) = -.664, p > .005, \text{ns} \). There was also no difference between

\(^5\) SEM for the 3rd grade level of the CTBS/5 = 2.85, SEM for the 6th grade level of the CTBS/5 = 3.00 (CTB Macmillan, 2001).
performance of black students attending a MAP school and black students attending a Non-MAP school \( t(97) = -.738 \) \( p > .005 \), ns (see Table 5). Finally results indicated that white students in a MAP school performed significantly higher than black students in a MAP school on both the 3rd and 6th grade forms of the CTBS/5, indicating that there was not a convergence of the gap between ethnic groups across years \( t(142) = -5.971 \) \( p < .005 \), \( t(142) = -4.709 \) \( p < .005 \), respectively. Effects sizes for these analyses were small \( \eta^2 = .20 \), \( \eta^2 = .13 \) respectively. These findings were also true of the Non-MAP students, in which white students performed significantly higher than black students at both the 3rd and 6th grade levels \( t(166) = -3.050 \) \( p < .005 \), \( \eta^2 = .05 \), \( t(166) = -5.733 \) \( p < .005 \), \( \eta^2 = .17 \) respectively.

Table 5

Mean Percentiles on the CTBS/5 Reading Subtest by MAP Participation and Ethnicity

<table>
<thead>
<tr>
<th>Group</th>
<th>3rd grade</th>
<th>6th grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean score</td>
<td>SD</td>
</tr>
<tr>
<td>MAP Schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black students</td>
<td>36.48</td>
<td>25.307</td>
</tr>
<tr>
<td>N = 46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White students</td>
<td>64.57</td>
<td>26.785</td>
</tr>
<tr>
<td>N = 98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-MAP Schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black students</td>
<td>40.43</td>
<td>24.347</td>
</tr>
<tr>
<td>N = 54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White students</td>
<td>53.94</td>
<td>27.904</td>
</tr>
<tr>
<td>N = 114</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Scores reported in national percentiles.
Discussion

The main purpose of this study was to determine whether reading programs implemented as a strategy of the MAP program impacted 4th graders’ reading scores on the KCCT reading test. Additionally, the researcher was interested in whether the reading programs would lead to a decrease over time in the magnitude of the discrepancy between black and white children’s achievement between the 4th and 7th grade levels of the KCCT reading test, as well as between the 3rd and 6th grade levels of the CTBS/5 reading test. Unfortunately, this study indicated that MAP students did not perform significantly better than Non-MAP students on the KCCT at any grade levels. Results also indicated that MAP students did not obtain significantly higher percentiles on the reading test of the CTBS/5 at the 6th grade level.

Findings also indicated that white students regardless of MAP participation performed significantly higher than black students across all grades and testing measures. This is consistent with previous literature concerning the disaggregated data of Kentucky students. According to Clements and McIntyre (2003), on the reading section of the KCCT, 65% of white 4th graders scored in the “Proficient” or “Distinguished” categories, while only 43% of same-aged black students scored in the top two performance categories. These results are also supportive of Lyons’ (2004) findings indicating a significant reading gap between Kentucky’s white and minority students at the elementary, middle, and high school levels.

When determining the effects of MAP and ethnicity on testing performance, white MAP students did not perform significantly higher than white Non-MAP students on the 4th or 7th grade KCCT reading test, or on the 6th grade CTBS/5 reading subtest. There
were also no significant findings when comparing black MAP students’ achievement scores across test measures and grade levels to those obtained by black Non-MAP students. Finally, the analyses did not show a convergence of achievement scores between black students and white students regardless of MAP participation on either the KCCT reading test or the CTBS/5 across administrations.

The fact that the MAP project did not appear to be effective at reducing the achievement gap between Kentucky’s black and white students is not a surprise. The achievement gap persists in every state despite many efforts (Solomon, 2006). According to Lee (2006), there has been no systematic indication that students’ average achievement has improved or that a reduction in the gap has occurred since the passage of NCLB. In his study, Lee compared the results from the National Assessment of Educational Progress (NAEP) to state assessment findings and concluded that high stakes testing and sanctions are not functioning as intentioned. Although state assessment results indicate an improvement in math and reading, the students are not showing similar gains on the NAEP or a convergence of the gap between whites and minorities (Lee). Therefore, Lee predicts that if the current trend continues, that by the year 2014 less than 25% of poor and black students will achieve NAEP proficiency in reading, and less than 50% will achieve proficiency in math.

There are several possible reasons that that this study did not see a decrease in the magnitude of the gap due to the MAP project. First, the MAP project was designed as a pilot program to begin addressing the achievement gap in Kentucky schools. Research has yet to discern promising methods that could be successful anywhere. The purpose of this program was for schools to begin implementing strategies that may be effective at
reducing the gap and then report their progress. Since research has not identified
standard methods for solving this problem, individual schools may not have known what
types of programs and/or strategies they should employ. However, the schools in this
study implemented research-based reading programs and strategies (Literacy First,
Wilson Reading System) that have been found to be effective at improving students’
reading performance over time (Wilson & O’Connor, 1995). Therefore, the lack of
positive findings may be a function of other factors.

Holdzkom (2002) examined the effects of a comprehensive school reform (CSR)
initiated within 12 schools in Kentucky, Tennessee, Virginia, and West Virginia. The
researchers were interested in determining what effects the CSR had on school
improvement, as well as the differences the reform model produced in the schools over
time (Holdzkom). Holdzkom found that the improvements made through the CSR were
not evident in student achievement levels until the 3rd year of implementation. This is of
particular interest to our findings because the students that comprise the sample were 4th-
graders during the first year of implementation for the MAP program. Therefore they
only received two years of the strategies implemented as a part of the MAP project at the
elementary level before transitioning to the middle school level. It would appear unlikely
then, based on Holdskom’s findings, that we would see a positive change in the sample’s
achievement level after only two years.

Another factor that may account for the findings include individual school
differences. The differences in achievement found between MAP schools and Non-MAP
schools and ethnic groups, are not completely dependent on project participation but are
also reliant on individual school differences. School differences such as school climate,
teacher preparedness, school expectations, and parent participation are all indicators of student achievement (Barton, 2003; Haycock, 2002).

Cotton (2001) reports that research indicates effective schools are characterized by strong leadership which focuses on the acquisition of basic skills for all students, high expectations for all student achievement, effective teachers who internalize the need for their students to succeed and modify instruction to ensure all students are learning, safe school environments, the implementation of incentive programs to provide external motivation for the students to want to succeed, and regular monitoring of student progress. Cotton also indicates that research has identified ineffective practices that have been utilized by unsuccessful schools: tracking, grade retention of students without providing them with additional support, the overuse of pullout programs, and carelessly assigning students to special education programs.

Limitations

Due to the nature of this project, there are several limitations of this study to discuss. First, Kentucky has 176 school districts in total. However, the MAP project was implemented in seven districts and this study only focused on three of the participating districts. As previously stated, these three districts were targeted because the strategies implemented were similar in nature and therefore would make a more logical comparison.

Another possible limitation of this study is that the researcher is unaware of how the reading programs were implemented. The reading programs have explicit instructions for effective implementation. If the programs were not implemented as instructed, any deviation could account for the lack of significant findings.
A final consideration is that the schools lacked standardization in the implementation of the MAP strategies. It is understandable that schools have individual needs and being able to address those needs is extremely important when choosing strategies and programs to impact student achievement. However, monitoring the progress made by each of these schools and the effectiveness of their efforts in closing the achievement gap are difficult to determine because each district did something different from the other districts. It is also somewhat difficult to discern if a convergence of the gap occurred longitudinally at the individual level because the programs and strategies implemented changed and/or evolved across years.

Future Research

There are several implications for future research. First, it would be beneficial to look within groups to determine where the achievement gap may exist. Previous literature (KDE, 2000) concerning Kentucky student performance regarding ethnicity and gender revealed that white female students obtained the highest mean score on the KCCT reading subtests, followed by white males, black females, and black males. This may provide pertinent information for developing strategies to target specific needs of Kentucky students.

One possible strategy that could be utilized to promote academic achievement among black students is the participation in a diversity program or other initiative designed to instill the importance of education in minority students. Currently there is little research to determine the effectiveness of these types of programs at raising the achievement of black students. One such initiative is Project AIMS (Activating Interest in Minority Students) whose goal is to foster the value of education in middle school
minority students to establish long-term educational goals beyond high school (Western Kentucky University, 2006). The goals of Project AIMS are to promote the benefits of a college degree to minority students, to provide both students and parents with skills that will facilitate college enrollment and persistence through graduation, to provide activities that will foster the development of versatility and expose students to new things, to provide academic enrichment opportunities that develop analytical skills, and facilitate transition to secondary educational settings and beyond (Western Kentucky University, 2006). However, care must be taken when implementing strategies with only certain groups. By looking within groups to identify where the gap may exist, and then implementing strategies to target those groups, we must be careful to not foster the incorrect belief that this is a minority problem instead of an educational problem.

Secondly, it would also be useful to look at socioeconomic variables to determine what effects they have on student achievement in Kentucky. There were not variables in the current study due to missing student data. However, current research has consistently demonstrated a positive relationship between SES and student achievement (Barton, 2003; Haycock, 2002; U.S. Department of Education, 2002).

According to a Pritchard Committee report, in 2002, 54% of 4th grade students in high poverty schools (schools that have 75% or more free and reduced lunch students) scored below basic on NAEP reading assessments, while only 23% of students at low poverty schools (fewer than 25% free and reduced lunch students) did the same. Forty-two percent of the students at the low poverty schools scored proficient or advanced in 4th grade reading, while only 17% of the students in high poverty schools scored at the same level (Clements & McIntyre, 2003).
Finally, it would be beneficial to look at the achievement performance of the MAP districts not included in this study. The achievement performance of those schools may indicate more successful strategies for closing the gap that could later be implemented in other schools and districts with similar needs.

Implications

The findings of this study indicate that schools still have a lot to accomplish before the achievement gap will begin to converge between white and minority students. Solely implementing new programs for a short time does not appear to be effective in the long-term at decreasing the gap. The question still remains, what is effective?

School districts across the United States have worked arduously to improve achievement for all students. Districts are utilizing a variety of strategies such as high-stakes testing to promote accountability among their schools and track student progress, as well as, forming networks through which they can share information and data to help other cooperating districts find ways to improve the gap (Rothman, 2001). For example, Fort Wayne, Indiana has implemented several initiatives to address the disproportionate achievement scores among its students. One strategy utilized in the Fort Wayne schools is participation in the Network for Equity in Student Achievement which cooperates with other urban districts to share data and possible solutions (Rothman). Data suggest that Fort Wayne may be on the right track, as evidenced by a decrease in the achievement gap between black and white 8th-grade students of 2.8 percentage points for reading, 1.4 points for math, and 1.5 points for the full battery of tests in the past three years (Sadowski, 2001). In Milwaukee, researchers have analyzed school achievement data to determine characteristics of successful schools, with a high proportion of minority and
low SES students, to possibly implement those strategies in unsuccessful schools with similar demographics (Rothman). According to the SchoolMatters website, Milwaukee’s percentage of students achieving at the proficient level in reading has remained relatively stagnant from 2003 (54.4%) through 2005 (55.7%) (SchoolMatters, 2006).

Districts are also implementing strategies at the school level. In Delaware, the framework of Barton’s correlates of achievement is being used in an initiative to address the achievement gap (Janerette & Fifield, 2005). Delaware schools are implementing an indicator system in which they will collect and study school information pertaining to the in-school correlates (rigor of curriculum, teacher preparation, teacher experience and attendance, class size, technology-assisted instruction, and school safety) to improve the school environment (Janerette & Fifield). The initiative may later expand to include some or all of the external correlates: birthweight, lead poisoning, hunger and nutrition, reading to young children, television watching, and parent availability (Janerette & Fifield).

However, research suggests that the achievement gap cannot be closed by district and school efforts alone. It must be a collaboration between the home and school environment. Research indicates that children whose parents are involved in their education are more inclined to enjoy school and earn higher grades, at both the elementary and secondary levels, than those children who have uninvolved parents (Henderson & Beria, 1994).

Barton indicates that black and Hispanic parents are less likely than their white counterparts to attend a school function or to volunteer and/or join a committee in their child’s school (2004). Therefore, our schools must find and utilize creative means to get
all parents involved in the educational process for their children. According to Maholmes (2001), one way to accomplish this would be provide trainings, similar to staff development opportunities, for parents to become more familiar and involved with the curriculum so as to increase their comfort level in assisting their child with school work. This could help establish a strong relationship between the home and school environments and lead to a more comprehensive understanding of how to improve academic outcomes (Maholmes).

Although the correlates identified by Barton (2003) are real factors in the explanation of minority academic underachievement, he fails to recognize another compelling element which focuses on the student and is supported by a substantial amount of research. Stereotype threat has been identified as another possible explanation for the lack of academic success in minority populations. Although this research is usually associated with students at the secondary and postsecondary levels, a study by Marchant (1991) indicated that a sample of black children at the elementary level perceived school and academic achievement as incompatible with their racial-cultural goals.

Individuals belonging to a stereotyped group often feel anxiety in contexts in which their behavior can affirm negative beliefs about their group as a whole lacking a certain skill (Aronson, Lustina, Good, Keough, Steele, & Brown, 1999). Aronson et al. allege that stereotype threat can adversely affect the academic performance of “anyone whose group is targeted by stereotypes alleging a lack of intellectual ability in some domain” (p.30). Almost all Americans have been exposed to a variety of cultural stereotypes by the time they reach age 6 and merely being exposed to their content is
sufficient enough to bias their perceptions and reactions to those of stereotyped groups (Devine, 1989). Steele (1997) asserts that for a child to maintain academic success, he or she must internalize the need for achievement as a part of the self, and in which they hold themselves accountable. Upon self-evaluation, good achievement results in sustained motivation for academic success; whereas, poor achievement may result in academic disengagement (Steele). Finally, Steele contends that it is more difficult for minority students to identify with academic domains because of the societal boundaries, such as “socioeconomic disadvantage, segregating societal practices, and restrictive cultural orientations” (p. 613) that have limited their access to education.

Overcoming an obstacle of this magnitude in student achievement will take a cultural shift, in which the parents, teachers, and students themselves begin to internalize the notion that all children can be successful academically and become high achievers. One suggestion for addressing this concern at the student level is in the form of mentoring programs. The specific goal of mentoring a child involves pairing a mentor, who may be an adult or another youth, with a student in need of some type of assistance (de Anda, 2001). The goal of most mentoring programs is to increase the likelihood of a desirable behavior while connecting the child in need to a person in the school or community; the mentor then serves as a positive role model while providing the child with social and emotional support and academic assistance (King, Vidourek, Davis, & McClellan, 2002).

In a study assessing one mentoring program, King, Vidourek, Davis, and McClellan (2002) found that the Healthy Kids Mentoring Program resulted in significant increases in “student self-esteem, academic achievement, and positive school, peer, and
family connectedness” (p. 298). A second study by Martinek, Schilling, and Johnson (2001) reported some positive findings on a program targeted at underserved youth called Project Effort. The goals of Project Effort included increasing 1) self-control and respect for others, 2) effort and participation, 3) self-motivation, and 4) prosocial behavior among the participants and, then ultimately for them to transfer these behaviors into the classroom setting (Martinek, Schilling, & Johnson). Results indicated that the children were able to transfer the goal of effort and participation into the classroom, however, they struggled to set personal goals for themselves (Martinek, Schilling, & Johnson). The researchers speculated that this type of goal would take more time for the children to internalize and then utilize in the classroom setting (Martinek, Schilling, & Johnson).

In conclusion, while our results demonstrated no change in the discrepancy of reading scores obtained between white and minority students on the KCCT, Kentucky school districts continue to strive to meet the educational needs of all students through a variety of strategies. Further investigation is necessary of those schools which chose to implement other strategies as part of the MAP initiative to determine the effectiveness of the other strategies utilized. School initiatives must be joined with home and community efforts to provide programs that can effectively address students’ needs, because research has indicated that schools cannot accomplish this task alone. Only after collaborative efforts between the home, school, and community are effectively and consistently utilized, may we begin to reach our goal of having all of Kentucky students achieving at high levels.
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the district level, each district designed and implemented their own individual plan to meet the needs of their students. Individual plans included strategies such as: 1) professional developments to promote cultural awareness for teachers, 2) implementation of reading programs to benefit students, 3) improvement and expansion of existing programs, 4) implementation of mentoring programs, 5) and implementing strategies that impact the organization of school, such as class size (Kentucky Department of Education, 2004).

Districts could utilize a combination of strategies depending on the primary needs of their students. Three districts (Districts A, B, and C) implemented strategies to improve the reading achievement of their students. District A implemented the Wilson Reading System and the GRADE diagnostic program into three elementary schools, as well as, offering professional training opportunities for staff about the achievement gap between students (Pope-Tarrence, 2002). District B implemented into one elementary school an extended block of reading for all students regardless of ability and lowered class size (Bjork, 2002). In addition, a reading specialist was utilized to provide intensive intervention for students who were identified as at-risk (Bjork, 2002). District B also provided professional development training for personnel regarding minority achievement (Bjork, 2002). Finally, District C implemented the research-based program Literacy First into 2 elementary schools at grades K-3 with planned grade expansion in later years (Petrosko, 2002). District C also expanded Project Read, a previously implemented program, from grades 3 to 5 to also include grades 6 to 8 (Petrosko, 2002).

Three other districts (Districts D, E, and F) utilized funds for professional development training to promote culturally responsive teaching methods among their