

Black Student Performance on Advanced Placement Exams: A Multiyear, Multistate Comparison

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ABSTRACT

In this investigation, we analyzed the overall performance of Black students on Advanced Placement (AP) exams in three states (i.e., Texas, New York, and Florida) for the past 16 years (i.e., 1997 through 2012). For all 16 years, statistically significant differences were present as a function of state residency. Black students in New York outperformed Black students in Texas and in Florida on AP exams for all 16 years. As such, equity was clearly not present in the overall AP exam performance of Black students. Furthermore, the majority of Black students' AP exam scores were failing scores, such that no potential for college credit was present. Implications of our findings are discussed.

Keywords: Advanced Placement, Black students, Texas, New York, Florida, equity

Introduction

Over the past 10 years, Advanced Placement (AP) program involvement and exam achievement have been attributed to college and career readiness as well as college admission decisions (Klopfenstein & Thomas, 2009). Additionally, some states allocate additional weight to AP grades, which affect GPA calculations and simultaneously modify class rank (Klopfenstein & Thomas, 2009). Specifically, on a 4-point scale, one point is added to the grade and given a 25% weight; or 10-points are added to grades on a 100-point scale, thus a 10% weight (Klopfenstein & Thomas, 2009).

Klopfenstein and Thomas (2009) claimed that the national perception on AP involvement increased following President George W. Bush's 2006 State of the Union Address. Moreover, Section 1702 (Access to High Standards Act) of NCLB (2002) acknowledged federal confirmation of AP coursework as college prep curriculum and encouraged states and school districts to incorporate AP programs as a means of elevating academic standards and expanding AP participation (U.S. Department of Education, 2004). In September 2006, U.S. Secretary of Education Margaret Spellings announced that 33 grants in the amount of \$17 million were awarded to increase the participation of low-income students in AP courses and exams. In 2006, an additional \$5,867,284 was awarded to 26 states to fund AP exam subsidies programs (U.S. Department of Education, 2006).

In a policy brief for the Education Commission of the States (ECS), Dounay (2006) revealed that the ECS recommended an all-inclusive state policy on Advanced Placement. First, each state and school district should require a minimum number of AP courses to be offered. As a result, state policy would provide consistency in AP content and leverage AP curriculum offerings in low-income and high minority schools. Second, a state-wide AP framework would establish standards and opportunities for all students to gain access to college preparatory courses (Dounay, 2006).

In 2012, Arne Duncan, the current Secretary of Education, announced that federal support of AP program incentives and exam subsidies were reinstated (U.S. Department of Education, National Center for Education Statistics, 2012). Through these supportive efforts, over \$21.5 million was budgeted to subsidize AP exam fees (U.S. Department of Education, National Center for Education Statistics, 2012). As the result of these financial awards, the federal government continued to acknowledge AP course and exam participation as curriculum of college readiness and success.

Although funding for AP programs and exams was approved, researchers (Davis, Joyner, & Slate, 2011; Davis, Slate, Moore, and Barnes, 2013; Moore & Slate, 2008) recognized the persistent AP achievement and participation gaps among Black students in the United States. Specific to this study, fewer researchers (Davis et al., 2011; Koch; 2012) investigated AP involvement and compared AP performance of ethnically diverse, primarily lower

socioeconomic, student groups across states. Previous to this study, Koch (2012) is the only researcher to date who compared AP exam performance across states over multiple years for any ethnic group.

More important, at the center of the educational and political agendas and threatening the global economic and social competitiveness of the United States is the growing achievement gap prevalent among the country's lowest performing ethnic groups. In this case, Black students, compared to Hispanic and other student groups, are not showing improvement in their access to and performance outcomes in AP programs (College Board, 2012c; Davis et al., 2013). Although participating in AP programs has been connected to elevated academic performance, Black students are not demonstrating progress in these areas (College Board, 2012c).

Purpose of the Study

The purpose of this study was to investigate the extent to which overall differences might be present in AP exam scores among Black students in three researcher-selected states (i.e., Texas, New York, and Florida). With the AP program being touted as a national college preparatory curriculum and education being a state responsibility, we contend it is important to examine the extent to which differences might be present in the education provided by these three states. Due to an inequitable access to advanced courses, the difference in education provided to Black students in these three states affects their college readiness.

Significance of the Study

Federal and state mandates are clear in directing academia toward preparing college and career ready students who will fill 21st century jobs. School districts and higher education leaders are engaged in collaborative efforts to develop strategies that will expedite closing the achievement gap among its underserved population. However, the College Board (2012c) revealed that more states are working toward improving the educational attainment of Hispanic students with less successful outcomes for Black students. Therefore, this research investigation will be meaningful to educators and legislators representing Texas, New York, and Florida in recognizing the level of attainment when compared to states of similar characteristics, aspirations, and opportunities. Additionally, the findings will be beneficial in revealing how far the three states represented in this study are in supporting the long-term economic well-being of the United States, in general, and the states involved in this research, specifically.

Research Questions

The following research question was used to guide this investigation of Black students' overall performance on AP exams in Texas, New York, and Florida over a 16-year period from 1997 through 2012: What is the difference in the overall AP exam performance for Black students as a function of state residency (i.e., Texas, New York, and Florida)?

Method

Sampling and Participant Selection

Participant data were retrieved using archival data from the College Board on overall AP exam performance for Black student residents in Texas, New York, and Florida between the 1997 and 2012 school years. According to the College Board (2012c) Report, the above mentioned states were among those states with the largest number of Black students who took AP exams during 2011 administration year.

Rationale for Variable Selections

Several analyses were completed to determine which of the 50 states to include in this study. First, an analysis of the United States Census (2010) data for Black Americans was completed to ascertain which of the 50 states had the most citizens from this ethnic group. Second, the College Board (2012c) AP exam data for Black students were reviewed. Third, Achieve, Inc. (2011) and Alliance for Excellent Education (n.d.) data were examined to ascertain current information on state accountability measures, initiatives directed towards increasing college readiness, and progress on closing the achievement gap. Using Texas as the benchmark state, five additional states (i.e., California, Florida, Georgia, Illinois, and New York) were selected based on (a) number of Black citizens, (b) number of students participating in AP courses and exams in 2011, (c) noted progress on developing state accountability measures, (d) identifiable progress on closing the achievement gap, and (e) developed initiatives directed towards increasing readiness. Part II of the analysis and rationale resulted from a persistent achievement gap.

The term accountability has been resonating among lawmakers and educators (e.g., Achieve, Inc, 2011; Alliance for Excellent Education, n.d.; NCLB, 2002; Texas Higher Education Coordinating Board, 2010, 2012) and refers to the number of college and career ready accountability measures accomplished (Achieve, Inc., 2011). The College Board (2011) developed the AP Equity and Excellence Report as a challenge to school districts to make AP courses and exams inclusive of all ethnic groups. The goal of the College Board's program is to propel school districts to 100% closure of the AP Equity and Excellence gap (College Board, 2011).

For this reason, the AP Equity and Excellence Report was examined to ascertain which of the five states was the closest to Texas in the percentage of Black students who had earned an AP exam score of 3 or higher in the 2011 administration year. As the result of the above analyses, two states, New York and Florida, were selected based on characteristics that were similar to Texas (i.e., Black population, Black student AP participation in core courses, Black AP exam-takers earning 3+, accountability measures, and percentage to equity and excellence).

Results

In this investigation, the College Board assigned exam scores of 5, 4, 3, 2, or 1 to student performance on each AP exam. For an overall AP performance measure, the College Board aggregates all of the student AP exam scores so that a summary of the 5, 4, 3, 2, and 1 scores is available by ethnic group and by gender for each exam year. Furthermore, the College Board calculates an overall AP exam mean by ethnic group and by gender. For Black students in Texas, the highest AP exam mean score (2.10, out of a possible 5) was attained in 1999. In contrast, the lowest AP exam mean score (1.82) was achieved during the 2008 and 2011 exam years. Thus, the average AP exam score for Black students in Texas from 1997 through 2012 was 1.94. Among the three states included in this study, New York had the highest percentage (15.36%) of Black students to achieve a 4 or 5 on an AP exam, followed by Texas (10.90%), and Florida (10.49%). However, over 60% of Black students in these three states received failing AP scores (i.e., Texas [68.57%; New York, 62.73; and Florida 69.93%).

For the 1997 exam year, a statistically significant difference was revealed, $\chi^2(6) = 75.31, p < .001$, with a Cramer’s V of .05, for the overall AP exam comparison. Using Cohen’s (1988) criteria, the effect size was trivial. Specifically, New York had the highest percentage (15.36%) of Black students to achieve a 4 or 5 on an AP exam; followed by Texas (10.90%) and Florida (10.49%). Exhibited in Table 1 are the percentages and frequencies of overall exam scores for Black students in Texas, New York, and Florida.

Table 1

Percentages and Frequencies of Overall Advanced Placement Exam Scores for Black Students by State Residency for the 1997 Through the 2001 Exam Years

Year and Exam Score	Texas		New York		Florida	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
1997						
5	68	(2.85)	216	(4.99)	110	(2.78)
4	192	(8.05)	449	(10.37)	305	(7.71)
3	490	(20.54)	949	(21.92)	775	(19.58)
2/1	1,636	(68.57)	2,716	(62.73)	2,768	(69.93)
1998						
5	70	(2.50)	207	(4.06)	116	(2.78)
4	256	(9.16)	503	(9.86)	325	(7.71)
3	537	(19.21)	1,072	(21.02)	729	(19.58)
2/1	1,933	(69.13)	3,318	(69.06)	2,694	(69.63)
1999						
5	68	(1.92)	214	(3.93)	154	(3.52)
4	279	(7.90)	571	(10.50)	407	(9.32)

3	694	(19.64)	1,151	(21.16)	887	(20.30)
2/1	2,492	(70.53)	3,504	(64.41)	2,921	(66.86)
2000						
5	115	(2.37)	270	(4.38)	194	(3.80)
4	381	(7.84)	579	(9.39)	418	(8.20)
3	920	(18.94)	1,354	(21.96)	1,040	(20.39)
2/1	3,441	(70.85)	3,963	(64.27)	3,448	(67.61)
2001						
5	124	(2.20)	225	(3.46)	170	(2.85)
4	410	(7.27)	615	(9.46)	465	(7.80)
3	950	(16.85)	1,302	(20.02)	1,179	(19.77)
2/1	4,153	(73.67)	4,362	(67.07)	4,150	(69.58)

Concerning the 1998 overall AP exam comparison, the sample included 2,796 Black students in Texas, 5,100 Black students in New York, and 3,864 Black students in Florida. The differences were statistically significant, $\chi^2(6) = 34.49$, $p < .001$, with a Cramer's V of .04. Using Cohen's (1988) criteria, the effect size was trivial. Again, New York had the highest percentage (13.92%) of Black students to earn 4s and 5s on an AP exam followed by Texas (11.66%) and Florida (10.49%). Delineated in Table 1 are the percentages and frequencies of the 1998 overall AP exam scores for Black students in Texas, New York, and Florida.

Again in 1999, the differences were statistically significant $\chi^2(6) = 57.72$, $p < .001$, Cramer's V of .05, trivial effect size (Cohen, 1988), with 14.43% of Black students in New York (14.43%) achieving AP exam scores of 4 and 5, in comparison to Florida (12.84%) and Texas (9.82%). Once again, the percentage of AP exam failures exceeded 60% for Black students in the three states represented in this study. Texas had the highest percentage (70.53%) of Black students who received failing exam scores.

Relative to the 2000 overall AP exam comparison, the differences were statistically significant, $\chi^2(6) = 69.89$, $p < .001$, Cramer's V of .05, trivial effect size (Cohen, 1988). Black students in New York (13.77%) outperformed Black students in Florida (12.00%) and Texas (10.21%) on achieving AP exam scores of 4 and 5. Texas had the largest percentage (70.85%) of Black students who did not succeed on an AP exam. Florida had the second highest percentage (67.61%) of this student population who failed an AP exam. New York followed in third with 64% of Black students who did not pass an AP exam. Concerning 2001, the differences were statistically significant, $\chi^2(6) = 74.35$, $p < .001$, Cramer's V of .05, a trivial effect size (Cohen, 1988). Black students in New York (12.92%) outperformed Black students in Florida (10.65%) and Texas (9.47%) on achieving AP exam scores of 4 and 5. The percentage of Black students in Texas (73.67%), New York (67.07%), and Florida (69.58%) who did not pass an AP exam was far greater than the percentage of this population succeeding.

For 2002, the differences were statistically significant, $\chi^2(6) = 94.24$, $p < .001$, Cramer's V of .05, trivial effect size (Cohen, 1988). Again, compared to Black students in Florida (12.12%) and Texas (10.27%), New York had the highest percentage (13.78%) of Black students who earned AP exam scores of 4 or 5 on an AP exam. Nevertheless, the percentage of Black students who did not pass an AP exam persisted in this exam year, with 71.93% of Black students in Texas receiving failed AP exam scores; followed by Black students in Florida (67.67%), and Black students in New York (64.50%). Present in Table 2 are the percentages and frequencies for the 2002 overall AP exam scores for Black students in Texas, New York, and Florida.

Table 2

Percentages and Frequencies of Overall Advanced Placement Exam Scores for Black Students by State Residency for the 2002 Through the 2006 Exam Years

Year and Exam Score	Texas		New York		Florida	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
2002						
5	176	(2.70)	300	(4.30)	241	(3.30)
4	493	(7.57)	661	(9.48)	644	(8.82)
3	1,159	(17.80)	1,514	(21.72)	1,477	(20.22)
2/1	4,685	(71.93)	4,496	(64.50)	4,943	(67.67)
2003						
5	174	(2.14)	268	(3.68)	277	(2.95)
4	578	(7.11)	677	(9.29)	669	(7.12)
3	1,429	(17.58)	1,578	(21.66)	1,706	(18.15)
2/1	5,948	(73.17)	4,764	(65.38)	6,750	(71.79)
2004						
5	247	(2.50)	366	(4.78)	337	(3.28)
4	662	(6.70)	818	(10.68)	836	(8.15)
3	1,549	(15.67)	1,622	(21.17)	1,856	(18.09)
2/1	7,424	(75.13)	4,856	(63.38)	7,230	(70.47)
2005						
5	227	(2.01)	356	(4.30)	342	(2.82)
4	720	(6.38)	812	(9.82)	959	(7.91)
3	1,700	(15.07)	1,572	(19.01)	1,984	(16.36)
2/1	8,636	(76.54)	5,530	(66.87)	8,845	(72.92)
2006						
5	245	(2.01)	382	(4.08)	367	(2.53)
4	791	(6.48)	933	(9.96)	1,008	(6.95)
3	1,754	(14.38)	1,741	(18.59)	2,170	(14.95)
2/1	9,410	(77.13)	6,309	(67.37)	10,967	(75.57)

Regarding 2003, the differences were statistically significant, $\chi^2(6) = 139.85, p < .001$, with a Cramer's V of .05, trivial effect size (Cohen, 1988). Again, compared to Black students in Florida (10.07%) and Texas (9.25%), New York had the highest percentage (12.97%) of Black students who earned an AP exam score of 4 or 5 on an AP exam. In addition, a decline in the percentage of Black students in all three states (i.e., Texas, New York, and Florida) who earned AP exam scores of 4 or 5 was indicated. Texas had the largest percentage (73.17%) of Black students with failing AP exam scores. Florida had the second highest percentage (71.79%) of this student group who were not successful in reaching the goal of AP (i.e., college credit), followed by Black students in New York (65.38%).

Concerning 2004, the comparison revealed statistically significant differences, $\chi^2(6) = 306.09, p < .001$, Cramer's V of .07, a trivial effect size (Cohen, 1988). Black students in New York achieved the highest percentage (15.46%) of AP exam scores of 4 or 5; followed by Black students in Florida (11.43%) and Texas (9.20%). In contrast, the percentage of failures among Black students in Texas, New York, and Florida remained high. Once again, Texas had the highest percentage (75.13%) of Black students who did not pass an AP exam. Pertaining to 2005, the differences were statistically significant, $\chi^2(6) = 265.39, p < .001$, Cramer's V of .06, a trivial effect size (Cohen, 1988). Black students in New York achieved the highest percentage (14.12%) of AP exam scores of 4 or 5; followed by Black students in Florida (10.73%) and Texas (8.39%). Compared to the previous year's AP exam scores, the percentage of Black students who accomplished AP exam scores of 4 and 5 declined for all three states represented in this study. Thus, Black students in Texas had the largest percentage (76.54%) of Black students who failed an AP exam, followed by Florida (72.92%) and New York (66.87%).

For 2006, the differences were statistically significant, $\chi^2(6) = 329.53, p < .001$, Cramer's V of .07, trivial effect size (Cohen, 1988). Compared to the percentage of Black students in Florida (9.48%) and Texas (8.49%), Black students in New York achieved the highest percentage (14.04%) of AP exam scores of 4 and 5. Once again, the percentage of Black students in all three states herein who failed an AP exam was extremely high: New York (67.37%); Florida (75.57%); and Texas (77.13%).

Relative to 2007, the differences were statistically significant, $\chi^2(6) = 514.34, p < .001$, Cramer's V of .08, a trivial effect size (Cohen, 1988). Compared to the percentage of Black students in Florida (9.27%) and Texas (8.89%), Black students in New York achieved the highest percentage (14.65%) of AP exam scores of 4 and 5. Florida had the greatest percentage (76.43%) of Black students who did not pass an AP exam scores. Texas followed with 76.14% of Black students who failed an AP exam. Delineated in Table 3 are the percentages and frequencies for the 2007 overall AP exam scores for Black students in Texas, New York, and Florida.

Table 3

Percentages and Frequencies of Overall Advanced Placement Exam Scores for Black Students by State Residency for the 2007 Through the 2011 Exam Years

Year and Exam Score	Texas		New York		Florida	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
2007						
5	321	(2.24)	472	(4.38)	444	(2.39)
4	955	(6.65)	1,105	(10.27)	1,281	(6.88)
3	2,150	(14.97)	2,122	(19.71)	2,662	(14.30)
2/1	10,932	(76.14)	7,065	(65.64)	14,226	(76.43)
2008						
5	359	(2.14)	453	(3.94)	481	(2.00)
4	1,005	(5.99)	1,116	(9.71)	1,294	(5.37)
3	2,383	(14.19)	2,103	(18.30)	2,961	(12.29)

2/1	13,044	(77.68)	7,818	(68.04)	19,358	(80.34)
2009						
5	491	(2.63)	562	(4.36)	586	(2.05)
4	1,225	(6.57)	1,359	(10.54)	1,572	(5.50)
3	2,692	(14.45)	2,454	(19.03)	3,579	(12.51)
2/1	14,227	(76.35)	8,518	(66.07)	22,865	(79.94)
2010						
5	603	(2.73)	652	(4.67)	654	(1.90)
4	1,533	(6.95)	1,432	(10.25)	1,835	(5.34)
3	3,148	(14.28)	2,623	(18.77)	4,032	(11.74)
2/1	16,766	(76.04)	9,269	(66.32)	27,820	(81.01)
2011						
5	704	(2.70)	710	(4.72)	818	(2.22)
4	1,723	(6.61)	1,705	(11.33)	2,229	(6.04)
3	3,562	(13.66)	2,889	(19.20)	4,633	(12.56)
2/1	20,096	(77.04)	9,740	(64.74)	29,211	(79.18)

Pertaining to 2008, the differences were statistically significant, $\chi^2(6) = 719.89, p < .001$, Cramer's *V* of .08, trivial effect size (Cohen, 1988). Black students in New York had the highest percentage (13.65%) of AP exam scores of 4 and 5, followed by Black students in Texas (8.13%) and Florida (7.37%). Compared to the previous year, the percentage of Black students who accomplished AP exam scores of 4 or 5 declined in Texas, New York, and Florida. Thus, Florida had the highest percentage (80.34%) of Black students who failed an AP exam during 2008. For the first time, Texas placed second with 77.68% of its Black students failing an AP exam. New York placed third with 68.04% of this group not succeeding on an AP exam.

For 2009, the differences were statistically significant, $\chi^2(6) = 993.37, p < .001$, Cramer's *V* of .09, a trivial effect size (Cohen, 1988). Black students in New York had the highest percentage (14.90%) of AP exam scores of 4 and 5, followed by Black students in Texas (9.20%) and Florida (7.55%). Compared to the previous year, the percentage of Black students in all three (researcher selected) states who accomplished AP exam scores of 4 or 5 increased. Conversely, the percentage of Black students who passed an AP exam was diminutive compared to the percentage of those individuals from the group who failed. For instance, 79.84% of Black students in Florida were unsuccessful on their AP exam; 76.35% of this student population in Texas failed an exam; and 66.07% of this ethnic group in New York experienced the same negative exam outcomes.

Regarding 2010, the differences were statistically significant, $\chi^2(6) = 1265.89, p < .001$, Cramer's *V* of .09 a trivial effect size (Cohen, 1988). Black students in New York attained the highest percentage (14.92%) of AP exam scores at or above a 3, followed by Black students in Texas (9.68%) and Florida (7.24%). Once again, the percentage of Black students in Texas, New York, and Florida who failed an AP exam was extremely high. Florida has the highest percentage (81.01%) of Black students who failed an AP exam; Texas had the second highest exam failure rate (76.04%) among Black students; and Black students in New York (with a 66.32% failure rate) continued to outperform Black students in the other two states.

Relative to 2011, the differences were statistically significant, $\chi^2(6) = 1317.04, p < .001$. Cramer's *V* of .09, trivial

effect size (Cohen, 1988). Black students in New York had the highest percentage (16.04%) of AP exam scores of 4 and 5; followed by Black students in Texas (9.31%) and Florida (8.26%). Compared to the previous year, an increase in the percentage of Black students in New York and Florida who accomplished AP exam scores of 4 and 5 occurred. However, the percentage of Black students in Texas with AP exam scores of 4 and 5 decreased. Once again, Florida experienced the lowest percentage (77.04%) of Black students who failed an AP exam during this test administration. Texas with 77.04% and New York with 64.74% were second and third in the percentage of Black students who did not succeed on an AP exam.

For 2012, the differences were statistically significant, $\chi^2(6) = 1539.93, p < .001$, Cramer's *V* of .10, small effect size (Cohen, 1988). Black students in New York had the highest percentage (18.35%) of AP exam scores of 4 and 5, followed by Black students in Texas (10.56%) and Florida (9.36%). Compared to the previous year, an increase occurred in the percentage of Black students in Texas, New York, and Florida who achieved AP scores of 4 and 5. Negating the increase was the persistently high AP exam failure rates among Black students in Texas (74.49%), New York (60.68%), and Florida (76.69%). Depicted in Table 4 are the percentages and frequencies for the 2012 overall AP scores for Black students in Texas, New York, and Florida.

Table 4

Percentages and Frequencies of Overall Advanced Placement Exam Scores for Black Students by State Residency for the 2012 Exam Year

Exam Score	Texas		New York		Florida	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
5	786	(3.01)	894	(5.80)	894	(2.59)
4	1,973	(7.55)	1,933	(12.55)	2,339	(6.77)
3	3,908	(14.95)	3,231	(20.97)	4,825	(13.96)
2/1	19,467	(74.49)	9,347	(60.68)	26,512	(76.69)

As previously shown in the Tables 1 through 4, a considerable increase occurred in the number of Black students who took an AP exam between 1997 and 2012. In contrast, the number of Black students in Texas and Florida who achieved an AP exam score of 4 or 5 declined during these 16-years. In the overall comparison, the percentage of Black students' in New York who achieved a 4 and 5 on an AP exam was consistently higher than the percentage of Black students in Texas and Florida. Between 1999 and 2007, the overall percentage of Black students in Florida who accomplished AP exam scores above the benchmark of 3 was higher than the percentage of Black students in Texas who had these scores. However, for the 1997, 1998, and subsequently 2008 through the 2012 test administrations, the percentage of Black students in Texas who attained AP exam scores of 4 and 5 surpassed the percentage of Black students in Florida reaching these levels. Figure 1 illustrates the overall average AP exam scores for Black students in Texas, New York, and Florida over a 16-year period from 1997 through 2012.

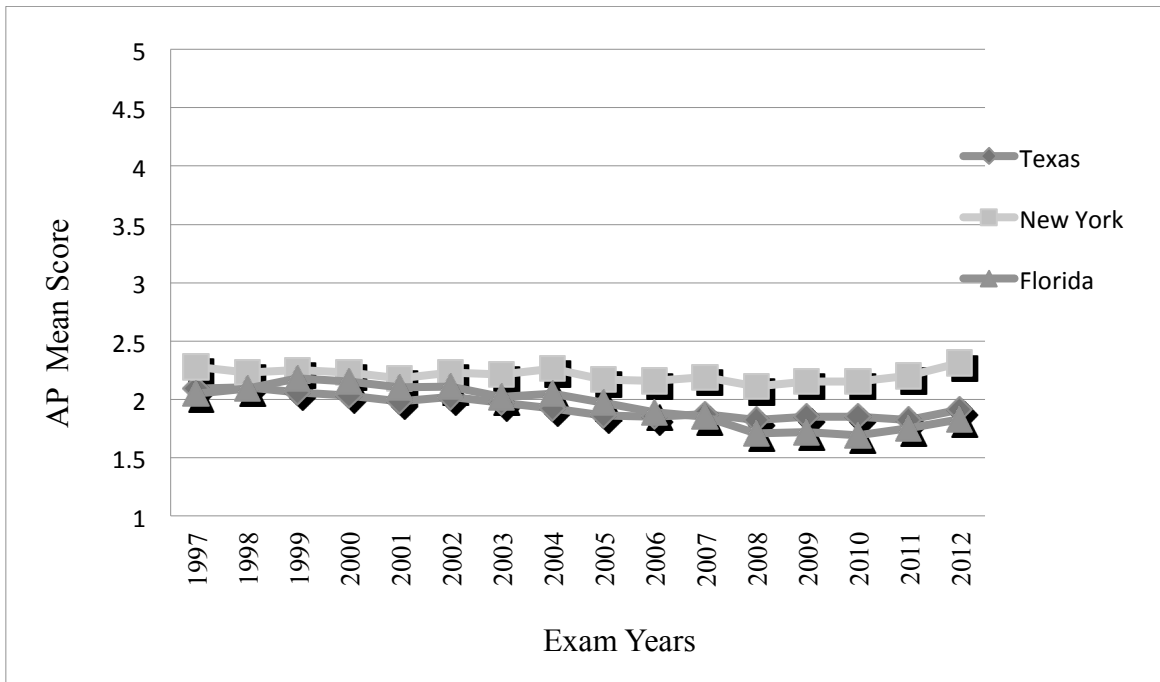


Figure 1. Overall mean AP exam scores for Black students in Texas, New York, and Florida from 1997 through 2012.

To summarize, all of the overall comparisons of AP exam performance were statistically significant. These findings were an indication that the distribution of AP exam scores received by Black students differed by state residency. Using Cohen’s (1988) standardized benchmarks, the effect sizes for statistically significant differences ranged from .04 (trivial) to .10 (small). As depicted in Table 5, the effect size showed a steady increase from .05 in 1997 to its current level of .10 in 2012.

Table 5

Effect Sizes for Statistically Significant Comparison of the Overall Advanced Placement Exam Scores for Black Students in 1997-2012

Year	Cramer’s V	Effect Size
1997	.05	Trivial
1998	.04	Trivial
1999	.05	Trivial
2000	.05	Trivial
2001	.05	Trivial
2002	.05	Trivial
2003	.05	Trivial
2004	.07	Trivial
2005	.06	Trivial
2006	.07	Trivial
2007	.08	Trivial
2008	.08	Trivial

2009	.09	Trivial
2010	.09	Trivial
2011	.09	Trivial
2012	.10	Small

In addition to the effect size, the average AP exam scores for 1997 through 2012 were used to compare Black students’ overall performance on these exams. In all of the assessments, Black students in New York outperformed Black students in Texas and Florida. Provided in Table 6 are the mean composite AP exam scores for Black students in 1997 through 2012.

Table 6

Means of Overall Advanced Placement Exam Scores for Black Students in 1997-2012

Year	Texas <i>M</i>	New York <i>M</i>	Florida <i>M</i>
1997	2.09	2.28	2.10
1998	2.10	2.23	2.09
1999	2.06	2.25	2.18
2000	2.03	2.23	2.15
2001	1.98	2.18	2.10
2002	2.02	2.23	2.11
2003	1.97	2.21	2.02
2004	1.92	2.26	2.05
2005	1.86	2.17	1.97
2006	1.85	2.15	1.89
2007	1.87	2.19	1.85
2008	1.82	2.11	1.71
2009	1.85	2.15	1.72
2010	1.85	2.15	1.69
2011	1.82	2.20	1.75
2012	1.91	2.31	1.83

Discussion

In all of the comparisons, statistically significant differences were determined for the overall performance of Black students based on state residency. Using Cohen’s (1988) criteria, effect sizes ranged from trivial (.04) to small (.10). During the 16 exam years, large numbers of Black students in Texas, New York, and Florida did not achieve an AP exam score above the benchmark score of 3. For Texas, Black students’ AP exam participation increased 995%

between the 1997 and 2012 exam years. As the number of Black student test-takers increased, the number of passing AP exam scores decreased. The highest AP exam mean score (2.10) attained by Black students in Texas occurred during the 1999 AP exam year. In contrast, the lowest AP exam mean score (1.82) was achieved during the 2008 and 2011 exam years. Thus, the average AP exam score for Black students in Texas over the 16-year period was 1.94. These low averages reflect the poor AP exam performance of Black students on the five AP exams examined in this study. Exhibited in Figure 2 are the percentages of failed and passed AP exam scores for the overall performance of Black students in Texas for the 1997 through 2012 exam years.

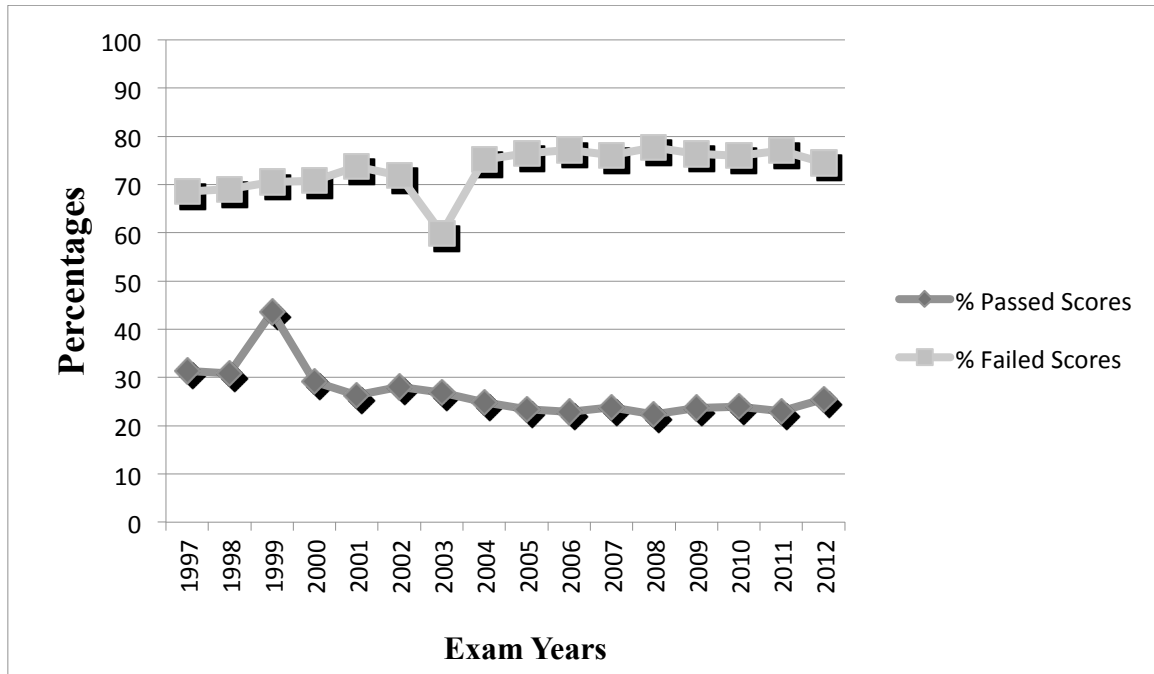


Figure 2. The percentage of passed and failed scores for the overall AP exam performance of Black students in Texas for the 1997 through the 2012 exam years.

Black students' participation on an AP exam increased in New York by 256% for the 16-year period. Compared to Black students in Texas and Florida, New York had the lowest the percentage growth in AP exam participation for this student group. However, Black students in New York outperformed Black students in Texas and Florida on all of the overall AP exam comparisons. The highest overall AP exam mean score (2.31) for Black AP test-takers in New York was achieved during the 2012 exam year. The lowest (2.11) mean score for Black students in New York was earned during the 2008 exam year. Hence, the average exam score for the overall AP exam performance for Black students in New York was 2.21. Illustrated in Figure 3 are the percentages for passed and failed scores for the overall AP performance of Black students in New York for the 1997 through the 2012 exam years.

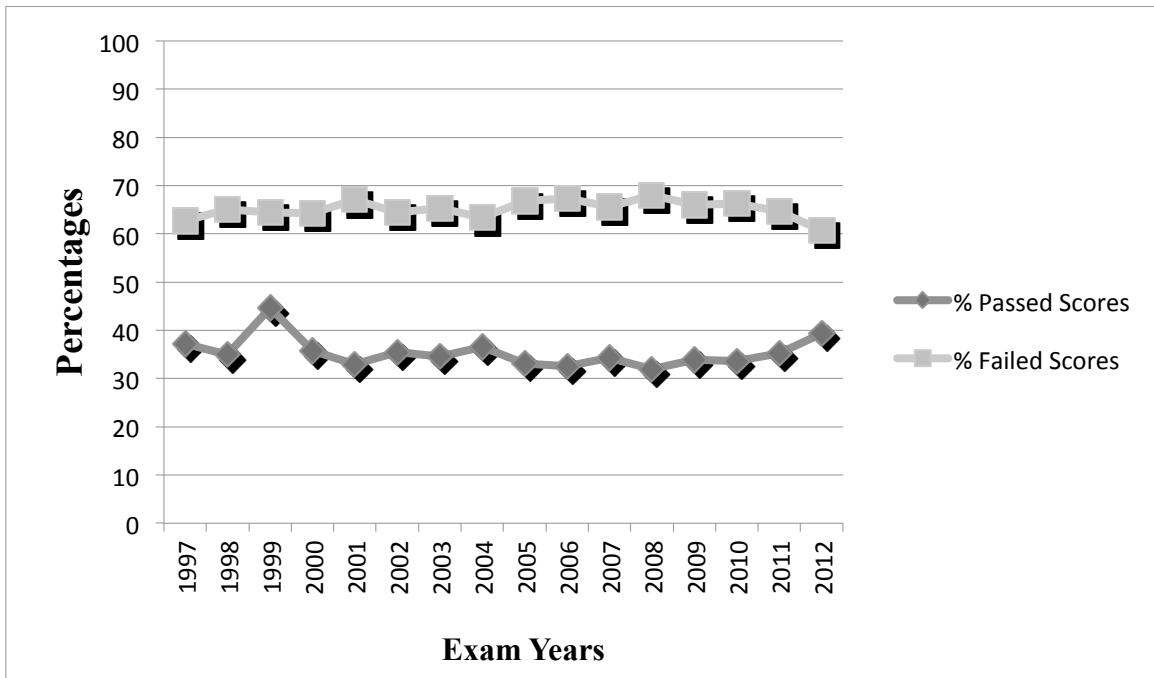


Figure 3. The percentage of passed and failed scores for the overall AP exam performance of Black students in New York from the 1997 through the 2012 exam years.

The overall AP exam performance increased for Black students in Florida by 776% for the 16-year period. Florida had the second best performance for Black students on the overall AP exam. The highest mean score for this student group (2.18) occurred in 1999, and the lowest mean score (1.69) was present in 2010. Hence, the average mean score for the 1997 through 2012 exam years was 1.95. Provided in Figure 4 are the percentage of passed and failed scores received on the overall AP exam for Black students in Florida for the 1997 through 2012 exam years.

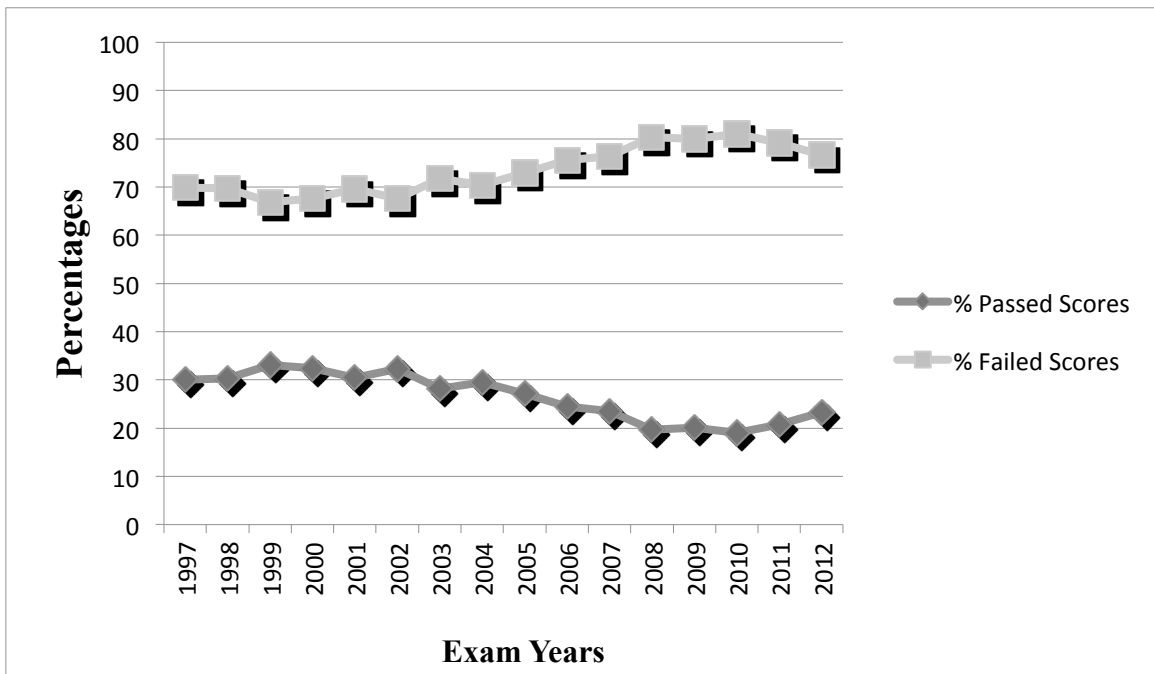


Figure 4. The percentage of passed and failed scores for the overall AP exam performance of Black students in Florida for the 1997 through the 2012 exam years.

Advanced Placement Access, Equity, and Achievement

Over the past decade, the AP programs have been popularized as one of the most effective strategies used in

closing the achievement gap, preparing students for college and careers and gaining admissions to postsecondary institutions (Kanter, Ochoa, Nassif, & Chong, 2011; Klopfenstein & Thomas, 2009; Obama, 2011). However, the original intent of the AP program was to provide high achieving students access to rigorous college level curriculum (College Board, 2012a). According to researchers (e.g., ACT, Inc., 2009; College Board, 2008, 2010; Dodd, Fitzpatrick, De Ayala, & Jennings, 2002; Dougherty, Mellor, & Jian, 2006; Geiser & Santelices, 2004; Lavin-Loucks, 2006; Scott et al.; Solórzano & Ornelas, 2004), colleges and universities expanded the focus of AP and increased its credibility as a factor in standardized assessment outcomes (e.g., ACT, SAT exams), college achievement, and college admission decisions. Specifically, Dodd et al. (2002) affirmed that students who took an AP English, mathematics, or science exam and achieved an AP criterion score of 3 or higher, were more successful on advanced college level courses than students who did not earn a criterion score on these exams. Keng and Dodd (2008) revealed that students who participated in AP curriculum consistently outperformed non-AP students in composite first-year GPA and earned higher GPAs in each of the AP subject areas. The College Board (2010) ascertained that students who participated in AP courses experience success on major exams and avoided college remediation. However, as revealed in this study, large numbers of Black students were unsuccessful on the AP exams.

Subsequent to research findings, the College Board (2012b) recommended that educators focus on preparing students for challenging high school coursework before high school. However, according to the College Board, not all high school students are prepared for AP curriculum. Nevertheless, as part of their mission, the College Board reports on the progress states are making towards closing the equity and excellence gap for AP course participation and exam success. For AP exam participants, equity and excellence are determined by taking the percentage of the specific ethnic group from the graduating class and dividing by the percentage of students in that ethnicity represented in the graduating class who scored a 3 or higher on at least one AP exam (College Board, 2012b; 2012c). The ratio signifies the percent of improvement toward reaching equity and excellence for that ethnic group (College Board, 2012b; 2012c).

Table 7 provides an illustration of the progress Texas, New York, and Florida have made in achieving access and equity for Black students. Through the lens of critical race theory, Ladson-Billings and Tate (1995) asserted that critical race theory provided another lens through which educational institutions and the struggles experienced by minority participants can be analyzed. For this reason, the College Board’s equity and excellence statement does not address equality in school resources distribution and equity in the experiences among Black students compared to other student groups. Furthermore, the College Board failed to examine the self-efficacy of Black students who took an AP Calculus BC exam in comparison to the self-efficacy of Black students who took the other AP exams.

Table 7

Equity and Excellence Achievement for Texas, New York, and Florida for Black Student Advanced Placement Exam Participants

State	% of 2011 Graduating Class	% 2011 Exam-Takers Scored 3+	Equity and Excellence Level (100%)
Texas	15.8	4.3	27.2
New York	15.3	4.4	28.8
Florida	20.1	7.1	35.3

Note. Data for Table7 were retrieved from the College Board (2012c).

As a result of this study on the performance of Black AP test-takers and the results of Koch’s (2012) study on Hispanic AP test-takers, the College Board equity and excellence statement does not mirror the lived experiences of these student groups. Consequently, an exception to the College Board’s statement is warranted. Also, it is important to note that having access to AP exams and not achieving success on the exams are not indications of closing the equity gap among Black students and other low-performing students.

The Education Commission of the States suggested that states require schools to become accountable for increasing students AP participation as well as student exam scores (Dounay, 2006). Petrilli and Hess (2011) contended that the emphasis of both Presidents Bush and Obama on closing the achievement gap may have adversely affected the progress of high achieving students. For both Presidents, the goal was to mandate schools to increase participation in rigorous coursework, specifically in AP programs (Obama, 2011; Petrilli & Hess, 2011; U.S. Department of Education, 2004).

Schneider (2009) observed that opening AP access to all created issues of credibility. Schneider (2009) argued that expanding AP program participation has resulted in prominent high schools removing AP courses from its curriculum. Schneider (2009) wrote:

Over the past few decades teachers and professional educators, particularly in high-status secondary-schools in the US, have increasingly criticized AP for its test-driven nature, for its focus on breadth over depth, and for failing to adapt to changing views about curriculum and teaching. As AP lost its uniqueness and moved to a wider range of schools, it less effectively identified the most talented and ambitious students. As more college and university applicants submitted transcripts filled with AP courses, the credential value of AP was weakened and it became less influential in post-secondary admissions, at least among highly selective schools. Consequently, many college guidance counselors at high status independent and public schools, whose faculty and administrators had long expressed desires to move towards more open curricula, cleared their schools to re-evaluate AP. (p. 814)

Congruent to Schneider's (2009) argument, Tilsley (2013) reported that Dartmouth College elected to discontinue accepting AP credit by the year 2018. Currently, Dartmouth gives advanced placement, exemption for courses, or college credit to AP exam-takers who earned 4s and 5s on their AP exam. Tilsley (2013) also pointed out that the College Board conducts independent studies to support their claim that AP course and exam participants perform better than non-AP participants and test-takers.

Recommendations for Policy

All students should experience more rigor in middle school, so they might be better prepared for the rigor of college preparatory high school courses like AP (Moore & Slate, 2008). Placing students into academically rigorous courses without the requisite background based on rigorous coursework, as some researchers (e.g., Moore et al., 2010) have argued, might increase failures and dropouts among Black and Hispanic students. Therefore, school leaders and instructional personnel might use this study and others (e.g., Davis et al., 2013) to begin conversations about the future of Black student access to more rigorous courses at an earlier age.

In regard to this study, Black student test-takers in Texas, New York, and Florida did not experience the high performance levels alluded to in the above statement. Moreover, researchers (e.g., Conley, 2007; Geiser & Santelices, 2004; Von Blum, 2009) argued that AP course completion alone should not be used to determine students' acceptance to college or success in college and beyond. Geiser and Santelices (2004) noted that because of the chronic deficit in access and achievement gap prevalent among Black and other underserved student groups, higher education institutions should reconsider including AP scores as a criteria in their admission decisions. Conley (2007) asserted that AP achievement has been given too much influence in the admissions process. Von Blum (2009) argued that AP participation is overrated and may become a problem in liberal arts education. For these reasons, a recommendation that national policy on AP as a premier college readiness curriculum be reconsidered. Perhaps more emphasis should be placed on increasing dual credit program participation among Black and other ethnic groups.

Recommendations for Future Research

This investigation constitutes only the third study in which AP exam participation was analyzed across state boundaries; and the second study in which AP exam outcomes were examined for multiple years. Therefore, it is recommended that this study be replicated to compare the AP exam performance of Black and Hispanic students from other states and other ethnic groups. Furthermore, a study including gender differences within ethnicities is also suggested.

Black students from New York consistently outperformed Black students from Texas and Florida. For this reason, a study in which college preparatory programs across state boundaries are analyzed is recommended. Davis et al. (2011) and Koch (2012) discovered that Black and Hispanic student groups consistently performed better on the AP Calculus BC exam than the other exams. Hence, a study of the self-efficacy among Black AP Calculus BC exam test-takers is also recommended. Ladson-Billings (1995; 2007) recommended investigating the achievement gap caused by experiences, low school funding, income-levels, and stigmas placed on Black and other ethnic groups. Subsequently, qualitative research in which school climate, culture, and teacher quality in schools in which AP courses are offered is warranted.

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