CHAPTER IV

Findings and Discussion

The purpose of this study was to determine the relationship between the implementation of a mandatory uniform dress policy on attendance, discipline, grade point average, and self-esteem. A Type III Repeated Measures Analysis of Variance (RMANOVA) tested the null hypotheses that there would be no trending interactions between race and gender for attendance, discipline, or grade point average between race or gender. A Two-way Analysis of Variance (ANOVA) tested the null hypothesis that there would be no significant interaction among race, gender, and self-esteem. Data were analyzed using a pre-determined alpha of .05, and the Statistical Package for Social Sciences (SPSS Inc., 1995). The findings indicated by the statistical analyses of data are included in this chapter. Results are organized by the four dependent variables and corresponding research questions.

Findings for Sample A

Students in the 9th grade during 1997-98 who completed three consecutive years at William H. Ruffner Middle School from 1994-95 through 1996-97 were the participants in the study. There were 146 students identified who were 6th grade students in 1994-95, the baseline year or non-uniform year, and wore uniforms as 7th and 8th graders in 1995-96 and 1996-97 respectively. This cohort formed Sample A.

Average Attendance (AA) for Sample A

Tests of hypotheses for differences between subjects indicated that there were no statistical differences for mean AA based on race or gender (Table 5). Collapsing across race and gender, tests of with-in subject hypotheses revealed a statistically significant decline in mean AA between 1994-95 and 1995-96 (Table 6). The decrease in AA continued between 1995-96 and 1996-97, but it was not significant. The downward trend in attendance as grade level increases for study participants (Table 7) is not consistent with the overall attendance patterns for the population of students attending Ruffner for the same time period (Appendix G). The average attendance rate for the population stayed at 93.1%, while the rate of attendance for study participants went from 94.9% to 93.8%. Absences accruing due to wearing uniforms or the lack thereof could explain why AA decreased.

Students may have elected to stay home if they did not have a uniform to wear to school that day. It was assumed that wearing uniforms would make it easier for children to come dressed appropriately for school. However, some students instead of subjecting themselves to disciplinary action because they were not in uniform, could have elected to stay home. This could explain why attendance patterns of study participants do not reflect the trend of the general population for these same years.

Table 5

Summary of Analysis of Variance with Repeated Measures on Average Attendance from 1994-95 Through 1996-97 by Race and Gender for Sample A (n = 146)

Source	SS	df	MS	F	p
Between-Subjects					
Race	.90	1	.90	.00	.93
Gender	255.79	1	255.79	2.07	.15
Race x Gender	54.62	1	54.62	.44	.50
Error	17518.90	142	123.37		
Within-Subjects					
Time	336.68	2	168.34	7.51	.01
Time x Race	60.00	2	30.00	1.34	.26
Time x Gender	29.59	2	14.79	.66	.51
Time x Race x Gender	37.44	2	18.72	.83	.43
Error	6358.18	284	22.38		

Note. Sample A is comprised of students who were 9th graders in 1997-98 and remained at William H. Ruffner Middle School from 1994-95 through 1996-97 for three consecutive years.

Table 6

Test of Within-Subjects Using a Simple Contrast on Average Attendance for Sample A (n = 146)

Source	Transformed variable	SS	df	MS	F	p
AA	AA 1	336.13	1	336.13	10.01	.01
	AA 2	.55	1	.55	.05	.82
AA x Race	AA 1	59.45	1	59.45	1.77	.18
	AA 2	.51	1	.51	.04	.83
AA x Gender	AA 1	18.91	1	18.91	.56	.45
	AA 2	10.67	1	10.67	.95	.33
AA x Race x Gender	AA 1	4.95	1	4.95	.14	.70
	AA 2	32.49	1	32.49	2.90	.09
Error (AA)	AA 1	4768.47	142	33.58		
	AA 2	1589.71	142	11.19		

Note: A simple contrast was employed to identify where significance lies for within-subjects. Transformed variable 1 for average attendance compared 1995-96 to 1994-95, and transformed variable 2 for average attendance compared 1996-97 to 1995-96.

Table 7

Mean Average Attendance by Race, Gender, and Year for Sample A (n = 146)

Race	Gender	n	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	48	94.4	6.84	93.4	6.96	92.3	12.04		
	Female	48	94.6	7.75	91.9	6.08	91.1	7.71		
	Total	96	94.5	7.27	93.7	6.50	93.2	10.10	93.8	.65
White	Male	27	94.6	4.62	91.9	6.67	91.1	7.63		
	Female	23	96.0	3.63	95.5	4.57	93.1	7.59		
	Total	50	95.3	4.21	93.6	6.03	92.0	7.60	93.2	.91
TOTAL	Male	75	94.5	6.10	92.9	6.85	91.8	10.62	92.9	.71
	Female	71	95.1	6.70	94.5	5.65	93.8	7.63	94.6	.81
	Grand Total	146	94.9	6.38	93.7	6.32	92.6	9.31	93.8	.56

Note. Uniforms worn 1995-96 and 1996-97.

Discipline Incidents for Sample A

Referrals. Tests of hypotheses for differences between subjects indicated that there were significant differences in the number of disciplinary referrals by race F (1, 142) = 6.85, p = .01 and gender F (1, 142) = 12.80, p = .01. Collapsing across race and gender, the with-in group differences for time was F (2,284) = 8.13, p = .01 (Table 8). Between 1995-96 and 1996-97 the number of referrals increased significantly F (1, 142) = 17.35, p = .01 (Table 9). Mean referrals decreased from 1.26 in 1994-95 to 0.82 in 1995-96 and increased to 1.72 in 1996-97 (Table 10). A similar trend in the number of referrals was noted for the general population. Referrals declined between 1994-95 and 1995-96 from 796 to 465 and then increased between 1995-96 and 1996-97 from 465 to 646 (Appendix G). An increase in the number of administrators and a decreasing population across these years could have affected the results due to improved efficiency in record keeping and policy enforcement.

Rule Violations. Tests of hypotheses for differences between subjects indicated that there were significant differences in the number of rule violations by race F (1, 142) = 20.46, p = .01 and gender F (1, 142) = 6.91, p = .03. Collapsing across race and gender, tests of with-in subject hypotheses revealed significant differences over time F (2, 284) = 10.26, p = .01, and significant interactions between time and race F (2, 284) = 3.81, p = .02, and time and gender F (2, 284) = 2.89, p = .05 (Table 11). Rule violations declined significantly between 1994-95 and 1995-96 F (1, 142) =

Table 8

Summary of Analysis of Variance with Repeated Measures on Referrals from 1994-95 Through 1996-97 by Race and Gender for Sample A (n = 146)

Source	SS	df	MS	F	p
Between-Subjects					
Race	49.81	1	49.81	6.85	.01
Gender	93.13	1	93.13	12.80	.01
Race x Gender	1.40	1	1.40	.19	.66
Error	1032.43	142	7.27		
Within-Subjects					
Time	34.62	2	17.31	8.13	.01
Time x Race	4.52	2	2.26	1.06	.34
Time x Gender	2.81	2	1.40	.66	.51
Time x Race x Gender	2.44	2	1.32	.57	.56
Error	604.24	284	2.12		

Note. Sample A is comprised of students who were 9th graders in 1997-98 and remained at William H. Ruffner Middle School from 1994-95 through 1996-97 for three consecutive years.

Table 9

Test of Within-Subjects Using a Simple Contrast for Referrals of Sample A (n = 146)

Source	Transformed variable	SS	df	MS	F	p
Referrals	Referrals 1	8.71	1	8.71	3.15	.07
	Referrals 2	25.91	1	25.91	17.35	.01
Referrals x Race	Referrals 1	.06	1	.06	.02	.88
	Referrals 2	4.4	1	4.4	2.97	.08
Referrals x Gender	Referrals 1	.01	1	.01	.00	.94
	Referrals 2	2.80	1	2.80	1.87	.17
Referrals x Race x Gender	Referrals 1	.07	1	.07	.02	.86
	Referrals 2	2.36	1	2.36	1.58	.21
Error	Referrals 1	391.58	142	2.75		
	Referrals 2	212.65	142	1.49		

Note. A simple contrast was employed to identify where significance lies for Within-Subjects. Transformed variable 1 for referrals compared 1995-96 to 1994-95, and transformed variable 2 for referrals compared 1996-97 to 1995-96.

Table 10

Mean Referrals by Race, Gender, and Year for Sample A (n = 146)

Race	Gender	n	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	48	2.10	2.55	1.15	1.71	2.52	2.58		
	Female	48	1.00	2.17	0.75	1.47	1.46	2.19		
	Total	96	1.55	2.42	.95	1.60	1.99	2.44	1.50	.16
White	Male	27	1.19	2.25	1.07	1.86	1.70	2.32		
	Female	23	0.13	.34	0.00	.00	0.61	1.08		
	Total	50	.70	1.74	.58	1.46	1.20	1.92	.78	.22
TOTAL	Male	75	1.77	2.47	1.12	1.75	2.23	2.50	1.62	.18
	Female	71	.72	1.84	.51	1.25	1.18	1.94	.66	.19
	Grand Total	146	1.26	2.24	0.82	1.56	1.72	2.30	1.14	.37

Note. Uniforms worn 1995-96 and 1996-97.

Table 11

Summary of Analysis of Variance with Repeated Measures on Rule Violations from 1994-95 Through 1996-97 by Race and Gender for Sample A (n = 146)

Source	SS	df	MS	F	p
Between-Subjects					
Race/ethnicity	1.63	1	1.63	20.46	.01
Gender	2.36	1	2.36	6.91	.03
Race x Gender	.21	1	.21	.61	.43
Error	48.55	142	.34		
Within-Subjects					
Time	5.28	2	2.60	10.26	.01
Time x Race	1.96	2	.98	3.81	.02
Time x Gender	1.49	2	.74	2.89	.05
Time x Race x Gender	0.46	282	.33	.89	.41
Total Error	73.08	284	.25		

Note. Sample A is comprised of students who were 9th graders in 1997-98 and remained at William H. Ruffner Middle School from 1994-95 through 1996-97 for three consecutive years.

8.45, p = .01 and then rose significantly in 1996-97 F (1, 142) = 15.48, p = .01 (Table 12). There was a significant interaction between race and the number of rule violations (Table 12 and Figure 2) and rule violations and gender (Table 12 and Figure 3). Between 1994-95 and 1995-96 there was a significant difference in the number of rule violations between blacks and whites. Between 1995-96 and 1996-97 males earned more rule violations than females. Males earned more than three times the number of rule violations than females, and blacks had almost three times the number of rule violations as whites (Table 13).

Increases in administration and record keeping have already been mentioned as a possible explanation for differences between the years. When one examines the number of rule violations earned by study participants in comparison to the general population, similar trending patterns are noted for these same years. The number of rule violations declined from 282 to 134 between 1994-95 and 1995-96 and then increased from 134 to 262 between 1995-96 and 1996-97 (Appendix G).

Table 12

Test of Within-Subjects Using a Simple Contrast on Rule Violations for Sample A (n = 146)

Source	Transformed variable	SS	df	MS	F	p
Rule Violations	Rule Violations 1	3.23	1	3.23	8.45	.01
	Rule Violations 2	2.05	1	2.05	15.48	.01
Rule Violations x Race	Rule Violations 1	1.74	1	1.74	4.57	.03
	Rule Violations 2	.21	1	.21	1.63	.20
Rule Violations x Gender	Rule Violations 1	.60	1	.60	1.58	.21
	Rule Violations 2	.88	1	.88	6.68	.01
Rule Violations x Race x Gender	Rule Violations 1	.42	1	.42	1.21	.29
	Rule Violations 2	.03	1	.03	.23	.62
Error	Rule Violations 1	54.26	142	.38		
	Rule Violations 2	18.81	142	.13		

Note. A simple contrast was employed to identify where significance lies for within subjects. Transformed variable 1 for rule violations compared 1995-96 to 1994-95, and transformed variable 2 for rule violations compared 1996-97 to 1995-96.

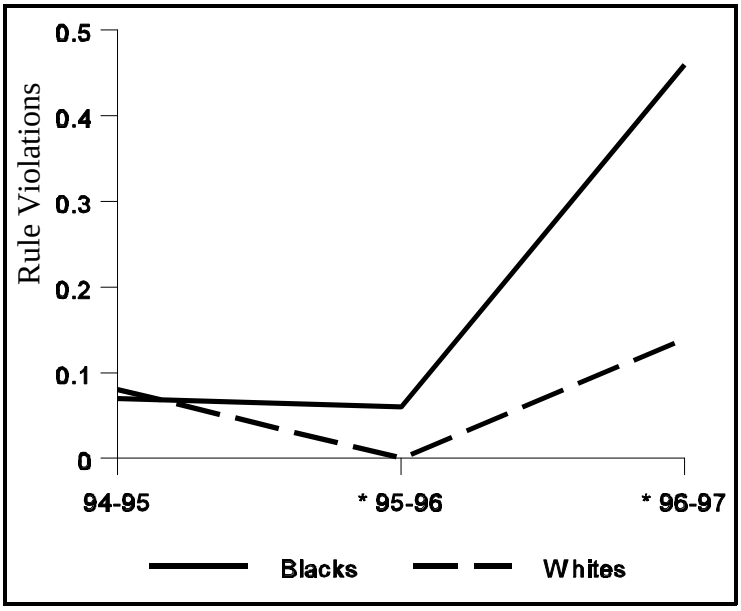

Figure 2. Mean rule violations by race and year for Sample A, (n = 146). The number of rule violations declined for both blacks and whites between 1994-95 and 1995-96. Rule violations increased for both blacks and whites between 1995-96 and 1996-97. Asterisk (*) indicates uniforms worn.

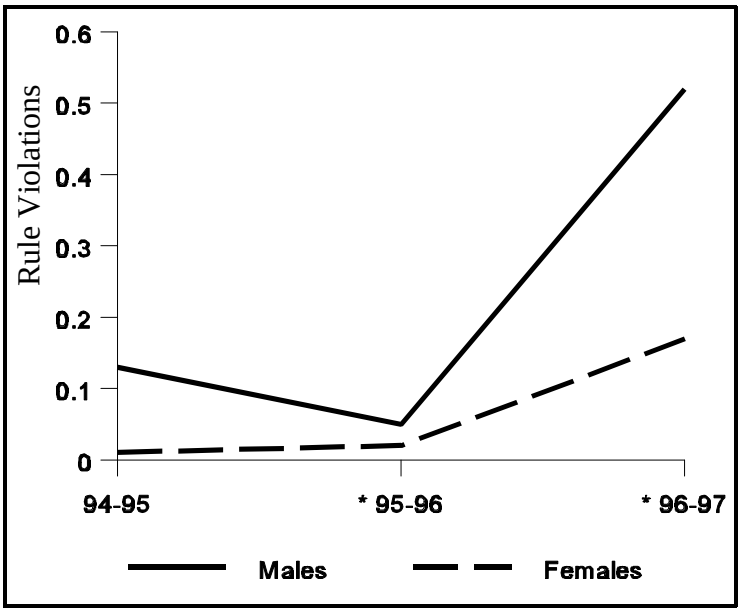

Figure 3. Mean rule violations by gender and year for Sample A, (n = 146). The number of rule violations declined for both males and females between 1994-95 and 1995-96. Rule violations increased for both males and females between 1995-96 and 1996-97. Asterisk (*) indicates uniforms worn.

Table 13

Mean Rule Violations by Race, Gender, and Year for Sample A (n = 146)

Race/ Ethnicity	Gender	N	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	48	.13	.39	.08	.35	.69	1.21		
	Female	48	.02	.14	.04	.20	.23	.72		
	Total	96	.07	.30	.06	.28	.46	1.01	.20	.03
White	Male	27	.15	.46	.00	.00	.22	.51		
	Female	23	.00	.00	.00	.00	.04	.21		
	Total	50	.08	.34	.00	.00	.14	.40	.06	.04
TOTAL	Male	75	.13	.41	.05	.28	.52	1.03	.21	.04
	Female	71	.01	.12	.02	.17	.17	.61	.05	.04
	Grand Total	146	.07	.31	.04	.04	.35	.87	.13	.03

Note. Uniforms worn 1995-96 and 1996-97.

Suspensions. Tests of hypotheses for differences between subjects indicated that there were significant differences in the number of suspensions by race F (1, 142) = 5.38, p = .02 and gender F (1, 142) = 12.18, p = .01. Collapsing across race and gender, tests of with-in group hypotheses revealed significant differences F (1, 142) = 4.18, p = .01 over time (Table 14). The number of suspensions declined significantly between 1994-95 and 1995-96 F (1, 142) = 5.76, p = .01 and then rose 1996-97 with no significance (Table 15).

Males earned three times more suspensions than females, and blacks had double the number of referrals suspensions than whites (Table 16). When the number of suspensions earned by study participants is compared to the general population, similar trending patterns are noted for these same years. Suspension declined from 324 to 232 between 1994-95 and 1995-96 and then increased from 232 to 266 between 1995-96 and 1996-97 (Appendix G).

Grade Point Average (GPA) for Sample A

Tests of hypotheses for differences between subjects indicated that there were significant differences in GPA by race F (1, 142) = 7.46, p = .01 and gender F (1, 142) = 14.75, p = .01 (Table 17). Collapsing across race and gender, tests of with-in group hypotheses revealed significant differences F (1, 142) = 10.06, p = .01 over time and significant interactions with respect to race F (2, 284) = 38.92, p = .01 and gender F (2. 284) = 4.21, p = .01) (Table 18). Figures 4 and 5 reveal similar trends

Table 14

Summary of Analysis of Variance with Repeated Measures on Suspensions from 1994-95 Through 1996-97 by Race and Gender for Sample A (n = 146)

Source	SS	df	MS	F	p
Between-Subjects					
Race/ethnicity	8.75	1	8.75	5.38	.02
Gender	19.80	1	19.80	12.18	.01
Race x Gender	.01	1	.01	.00	.92
Error	230.70	142	1.62		
Within-Subjects					
Time	5.13	2	2.56	4.18	.01
Time x Race	1.4	2	.70	1.14	.32
Time x Gender	.72	2	.36	.58	.55
Time x Race x Gender	1.83	3	.91	1.49	.22
Total Error	174.46	284	.61		

Note. Sample A is comprised of students who were 9th graders in 1997-98 and remained at William H. Ruffner Middle School from 1994-95 through 1996-97 for three consecutive years.

Table 15

Test of Within-Subjects Using a Simple Contrast on Suspensions for Sample A (n = 146)

Source	Transformed variable	SS	df	MS	F	p
Suspensions	Suspensions 1	4.00	1	4.00	5.76	.01
	Suspensions 2	1.13	1	1.13	2.11	.14
Suspensions x Race	Suspensions 1	.02	1	.02	.03	.86
	Suspensions 2	1.30	1	1.30	2.50	.11
Suspensions x Gender	Suspensions 1	.65	1	.65	.93	.33
	Suspensions 2	.07	1	.07	.13	.71
Suspensions x Race x Gender	Suspensions 1	.40	1	.40	.58	.44
	Suspensions 2	1.42	1	1.42	2.66	.10
Error	Suspensions 1	98.70	142	.69		
	Suspensions 2	75.75	142	.53		

Note. A simple contrast was employed to identify where significance lies for within subjects. Transformed variable 1 for suspensions compared 1995-96 to 1994-95, and transformed variable 2 for suspensions compared 1996-97 to 1995-96.

Table 16

Summary of Mean Attendance for Analysis of Variance with Repeated Measures on Total Suspensions for Sample A (n = 146)

Race/ Ethnicity	Gender	N	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	48	.81	1.35	.54	1.01	1.06	1.54		
	Female	48	.29	.58	.31	.72	.50	1.03		
	Total	96	.55	1.06	.43	.88	.78	1.33	.59	.07
White	Male	27	.26	.66	.31	1.08	.50	.99		
	Female	23	.04	.21	.00	.00	.13	.34		
	Total	50	.16	.51	.32	.84	.44	.81	.29	.10
TOTAL	Male	75	.61	1.17	.56	2.03	.93	1.37	.66	.08
	Female	71	.21	.50	.21	.61	.38	.88	.21	.09
	Grand Mean	146	.42	.93	.39	.87	.66	1.19	.44	.06

Note. Uniforms worn 1995-96 and 1996-97.

Table 17

Summary of Analysis of Variance with Repeated Measures on Grade Point Average from 1994-95 Through 1996-97 based on Race and Gender for Sample A (n = 146)

Source	SS	df	MS	F	p
Between-Subjects					
Race	7.79	1	7.79	7.46	.01
Gender	15.42	1	15.42	14.75	.01
Race x Gender	1.44	1	1.44	1.38	.24
Error	148.40	142	1.04		
Within-Subjects					
Time	10.46	2	5.23	38.92	.01
Time x Race	1.13	2	.56	4.21	.01
Time x Gender	.85	2	.42	3.16	.04
Time x Race x Gender	.03	2	.01	.01	.98
Total Error	38.17	284	.13		

Note. Sample A is comprised of students who were 9th graders in 1997-98 and remained at William H. Ruffner Middle School from 1994-95 through 1996-97 for three consecutive years.

Table 18

Test of Within-Subjects Using a Simple Contrast on Grade Point Average for Sample A (n = 146)

Source	Transformed variable	SS	df	MS	F	p
GPA	GPA 1	7.84	1	7.84	38.92	.01
	GPA 2	2.61	1	2.61	38.92	.01
GPA x Race	GPA 1	.85	1	.85	4.21	.04
	GPA 2	.28	1	.28	4.21	.04
GPA x Gender	GPA 1	.63	1	.63	3.16	.07
	GPA 2	.21	1	.21	3.16	.07
GPA x Race x Gender	GPA 1	.00	1	.00	.01	.91
	GPA 2	.00	1	.00	.01	.91
Error	GPA 1	28.63	142	.20		
	GPA 2	9.54	142	.06		

Note: A simple contrast was employed to determine where significance occurred relative to within subjects. Transformed variable 1 for grade point average compared 1995-96 to 1994-95, and transformed variable 2 for rule grade point average compared 1996-97 to 1995-96.

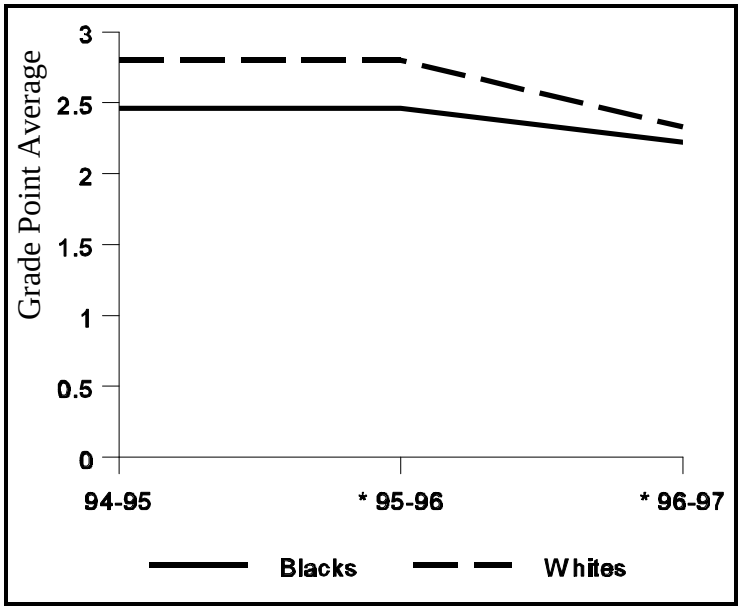

Figure 4. Mean grade point average by race and year for Sample A, (n = 146). Grade point average for whites were higher than blacks. Mean grade point average remained the same for both between 1994-95 and 1995-96, but declined for both between 1995-96 and 1996-97. Asterisk (*) indicates uniforms worn.

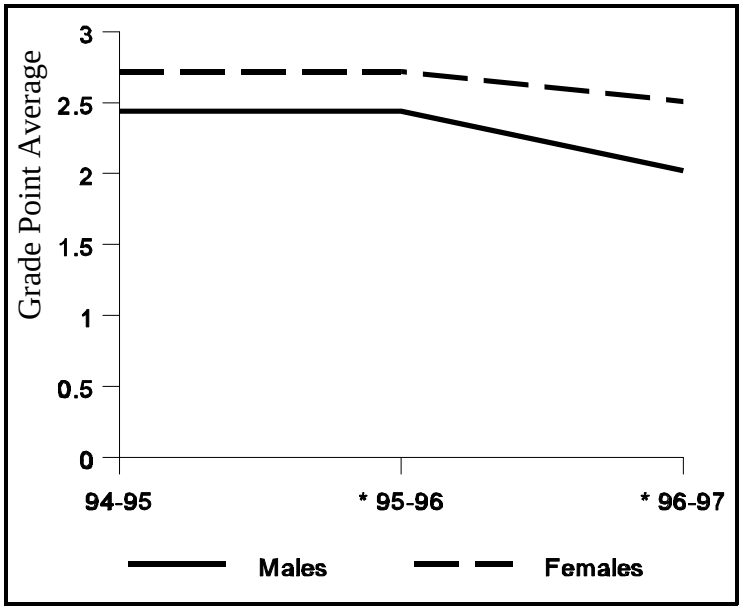

Figure 5. Mean grade point average by gender and year for Sample A, (n = 146). Grade point average for females were higher than males. Mean grade point average remained the same for both between 1994-95 and 1995-96, but declined for both between 1995-96 and 1996-97. Asterisk (*) indicates uniforms worn.

in GPA for gender and race. GPA remained the same for blacks and whites between 1994-95 and 1995-96, and males and females for the same years. The GPA declined significantly for both race and gender subjects between 1995-96 and 1996-97 (Table 19).

History was listed as a possible limitation relative to administrative changes. A change in the bell schedule and planning processes used by 8th grade teachers could have influenced results. Teacher effectiveness as well as expectations due to course requirements could have influenced results. Eighth grade teachers also accept the philosophy that they are preparing 8th graders for high school, so they tend to be more demanding and less nurturing. Courses taken by 8th graders could have included credit-bearing courses in Earth Science, English Seminar, and Algebra or Geometry, which tend to be more difficult subject matter than those taking regular 8th grade classes. No allowances were made for such discrepancies subsequently impacting academic performance for some. Teacher bias could have also influenced grades earned by students. When one examines the trend in GPA of study participants in comparison to the general population, a similar trend is noted for these same years (Appendix G).

Table 19

Summary of Mean Attendance for Analysis of Variance with Repeated Measures on Grade Point Average by Race and Gender for Sample A (n = 146)

Race	Gender	N	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	48	2.35	.62	2.35	.62	2.02	.74		
	Female	48	2.56	.63	2.56	.63	2.42	.66		
	Total	96	2.46	.63	2.46	.63	2.22	.73	2.38	.06
White	Male	27	2.59	.63	2.59	.63	2.02	.87		
	Female	23	3.04	.56	3.04	.56	2.68	.64		
	Total	50	2.80	.64	2.80	.64	2.33	.84	2.66	.08
TOTAL	Males	75	2.44	.63	2.44	.63	2.02	.79	2.32	.07
	Female	71	2.72	.64	2.72	.64	2.51	.66	2.72	.07
	Grand Total	146	2.57	.65	2.57	.65	2.26	.76	2.52	.05

Note. Uniforms worn 1995-96 and 1996-97.

Findings for Sample B

A second sample was created by adding the criterion to sample A that the student had to be suspended as a 6th grader in 1994-95. Sample B was created by identifying students who were suspended out-of-school at least once as 6th graders in 1994-95. This group is representative of "the small percentage of students who are responsible for more than half of the crimes in school" (Gottfredson, et al, 1990, p. 2).

Average Attendance for Sample B

Tests of hypotheses for between subjects indicated neither race nor gender affected attendance. There was no significant trend in average attendance. The size of sample B with 35 participants, because it was so small, may have limited results Tables 20 & 21).

Discipline Incidents for Sample B

Tests of hypotheses for between subjects for all discipline indicators (referrals, rule violations, and suspensions) indicated neither race nor gender affected discipline. There was no significant trend in discipline (Tables 22-27). Again, the size of sample (n =35) may have limited results.

Table 20

Summary of Analysis of Variance with Repeated Measures on Average Attendance from 1994-95 Through 1996-97 by Race and Gender for Sample B (n = 35)

Source	SS	df	MS	F	p
Between-Subjects					
Race	.06	1	.06	.00	.98
Gender	304.61	1	304.61	1.25	.27
Race x Gender	52.21	1	52.21	.21	.64
Error	7535.47	31	243.08		
Within-Subjects					
Time	114.52	2	57.26	.93	.39
Time x Race	56.16	2	28.08	.46	.63
Time x Gender	18.21	2	9.10	.14	.86
Time x Race x Gender	38.91	2	19.45	.31	.72
Total Error	3784.78	62	61.04		

Note. Sample B was created by identifying students in Sample A who were suspended out-of-school at least once as a 6th grader in 1994-95.

Table 21

Mean Average Attendance by Race, Gender, and Year for Sample B (n = 35)

Race	Gender	N	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	18	91.1	9.35	92.0	8.86	87.5	18.22		
	Female	11	92.4	12.29	94.8	3.92	94.3	2.46		
	Total	29	91.6	10.37	92.8	7.3	90.1	14.66	91.9	1.72
White	Male	5	91.6	7.50	87.0	8.92	84.6	12.12		
	Female	1	98.0	.00	99.0	.00	91.0	.00		
	Total	6	92.6	7.20	89.0	9.36	85.6	11.15	91.8	4.93
TOTAL	Male	23	91.2	8.82	90.9	8.92	86.9	16.88	88.9	2.27
	Female	12	92.9	11.83	94.5	3.99	94.0	2.54	94.8	4.7
	Grand Total	35	91.8	9.81	92.1	7.73	89.3	14.08	91.9	2.61

Note. Uniforms worn 1995-96 and 1996-97.

Table 22

Summary of Analysis of Variance with Repeated Measures on Referrals from 1994-95 Through 1996-97 by Race and Gender for Sample B (n = 35)

Source	SS	df	MS	F	p
Between-Subjects					
Race	5.07	1	5.07	.44	.50
Gender	21.19	1	21.19	1.86	.18
Race x Gender	11.27	1	11.27	.99	.32
Error	352.77	31	11.38		
Within-Subjects					
Time	13.61	2	6.80	1.30	.26
Time x Race	2.19	2	1.09	.22	.80
Time x Gender	2.06	2	1.03	.20	.81
Time x Race x Gender	1.78	2	.89	.18	.83
Total Error	306.84	62	4.94		

Note. Sample B was created by identifying students in Sample A who were suspended out-of-school at least once as a 6th grader in 1994-95.

Table 23

Mean Referrals by Race, Gender, and Year for Sample B (n = 35)

Race	Gender	N	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	18	3.94	2.60	2.11	1.81	3.83	2.87		
	Female	11	3.55	3.39	1.64	2.34	3.45	2.88		
	Total	29	3.79	2.87	1.93	2.00	3.69	2.83	3.09	.37
White	Male	5	4.00	3.74	3.60	2.70	3.40	1.67		
	Female	1	1.00	.00	.00	.00	2.00	.00		
	Total	6	3.50	3.56	3.00	2.83	3.17	1.60	2.33	1.06
TOTAL	Male	23	3.96	2.79	2.43	2.06	3.74	2.63	3.48	.49
	Female	12	3.33	3.31	1.50	2.28	3.33	2.77	1.94	1.01
	Grand Total	35	3.74	2.94	2.11	2.15	3.60	2.65	2.71	.56

Note. Uniforms worn 1995-96 and 1996-97.

Table 24

Summary of Analysis of Variance with Repeated Measures on Rule Violations from 1994-95 Through 1996-97 by Race and Gender for Sample B (n = 35)

Source	SS	df	MS	F	p
Between-Subjects					
Race	.32	1	.32	.41	.52
Gender	1.31	1	1.31	1.68	.20
Race x Gender	.06	1	.06	.07	.78
Error	24.14	31	.77		
Within-Subjects					
Time	1.52	2	.76	1.10	.33
Time x Race	.88	2	.44	.64	.52
Time x Gender	.70	2	.35	.51	.60
Time x Race x Gender	.17	2	.08	.12	.88
Total Error	42.73	62	.68		

Note. Sample B was created by identifying students in Sample A who were suspended out-of-school at least once as a 6th grader in 1994-95.

Table 25

Mean Rule Violations by Race, Gender, and Year for Sample B (n = 35)

Race	Gender	N	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	18	.33	.59	.17	.51	1.22	1.59		
	Female	11	.09	.30	.18	.40	.55	.82		
	Total	29	.24	.51	.17	.47	.97	1.38	.42	.09
White	Male	5	.80	.84	.00	.00	.60	.55		
	Female	1	.00	.00	.00	.00	.00	.00		
	Total	6	.67	.82	.00	.00	.50	.55	.23	.27
TOTAL	Male	23	.43	.66	.13	.46	1.09	1.44		
	Female	12	.08	.29	.17	.39	.50	.80		
	Grand Total	35	.31	.58	.14	.43	.89	1.28	.33	.14

Note. Uniforms worn 1995-96 and 1996-97.

Table 26

Summary of Analysis of Variance with Repeated Measures on Suspensions from 1994-95 Through 1996-97 by Race and Gender for Sample B (n = 35)

Source	SS	df	MS	F	p
Between-Subjects					
Race	.22	1	.22	.08	.77
Gender	4.74	1	4.74	1.79	.19
Race x Gender	.37	1	.37	.14	.71
Error	81.90	31	2.64	.14	
Within-Subjects					
Time	2.66	2	1.33	.94	.39
Time x Race	.47	2	.23	.16	.84
Time x Gender	.22	2	.11	.08	.92
Time x Race x Gender	2.00	2	1.00	.71	.49
Total Error	87.57	62	1.41		

Note. Sample B was created by identifying students in Sample A who were suspended out-of-school at least once as a 6th grader in 1994-95.

Table 27

Mean Suspensions by Race, Gender, and Year for Sample B (n = 35)

Race	Gender	N	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	18	1.94	1.39	.78	1.22	1.94	1.95		
	Female	11	1.27	.47	.73	1.10	1.09	1.22		
	Total	29	1.69	1.17	.76	1.15	1.62	1.24	1.29	.18
White	Male	5	1.40	.89	1.80	1.64	1.60	.89		
	Female	1	1.00	.00	.00	.00	1.00	.00		
	Total	6	1.33	.82	1.50	1.64	1.50	.84	1.13	.51
TOTAL	Male	23	1.83	1.30	1.00	1.35	1.87	1.77	1.58	.23
	Female	12	1.25	.45	.67	1.07	1.08	1.16	.85	.49
	Grand Total	35	1.63	1.11	.89	1.25	1.60	1.61	1.21	.27

Note. Uniforms worn 1995-96 and 1996-97.

Grade Point Average for Sample B

Tests of hypotheses for differences between subjects indicated that there were no significant differences in GPA by race or gender. Collapsing across race, tests of within subject hypotheses revealed significant trend F (2, 62) = 3.74, p = .02 in GPA (Table 28). There was significant decline in GPA between 1995-96 and 1996-97, F (1, 31) = 7.28, p = .01. Although not indicated by tests for between subjects, the simple contrast also indicated that there was a significant interaction between GPA and race F (1, 31) = 4.20, p = .04 during the first year of uniform implementation between 1994-95 and 1995-96 (Table 29). Whites had a higher GPA than blacks (Table 30 and Figure 6) F (1, 31) = 7.28, p = .01. Whites had a higher GPA than blacks (Table 30 and Figure 6).

Sample size may have contributed to this phenomenon with only 35 students contained in sample B. GPA for the general population showed a different trend. Mean grade point average rose from 1.97 to 2.28 between 1994-95 and 1995-96 and then declined to 2.05 in 1996-97 (Appendix G).

Table 28

Summary of Analysis of Variance with Repeated Measures on Grade Point Average from 1994-95 Through 1996-97 by Race and Gender for Sample B (n = 35)

Source	SS	df	MS	F	p
Between-Subjects					
Race	.62	1	.62	.27	.60
Gender	6.86	1	6.86	2.95	.09
Race x Gender	3.52	1	3.52	1.52	.22
Error	71.97	31	2.32		
Within-Subjects					
Time	3.4	2	1.7	3.74	.02
Time x Race	1.89	2	.94	2.07	.13
Time x Gender	.72	2	.36	.80	.45
Time x Race x Gender	.15	2	.07	.16	.84
Total Error	28.20	62	.45		

Note. Sample B was created by identifying students in Sample A who were suspended out-of-school at least once as a 6th grader in 1994-95.

Table 29

Test of Within-Subjects Using a Simple Contrast on Grade Point Average for Sample B (n = 35)

Source	Transformed variable	SS	df	MS	F	p
GPA	GPA 1	.00	1	.00	.00	.98
	GPA 2	3.40	1	3.40	7.28	.01
GPA x Race	GPA 1	1.86	1	1.80	4.20	.04
	GPA 2	.03	1	.03	.06	.79
GPA x Gender	GPA 1	.72	1	.72	1.63	.21
	GPA 2	.00	1	.00	.00	.93
GPA x Race x Gender	GPA 1	.04	1	.04	.09	.75
	GPA 2	.10	1	.10	.22	.63
Error	GPA 1	13.72	31	.44		
	GPA 2	14.47	31	.46		

Note. A simple contrast was employed to identify where significance lies for within - subjects. Transformed variable 1 for GPA compared 1995-96 to 1994-95, and transformed variable 2 for rule GPA compared 1996-97 to 1995-96.

Table 30

Mean Grade Point Average by Race, Gender, and Year for Sample B (n = 35)

Race	Gender	N	1994-95		1995-96		1996-97		Grand Mean	
			M	SD	M	SD	M	SD	M	SD
Black	Male	18	2.44	1.26	2.99	.82	2.56	1.09		
	Female	11	2.19	1.19	3.37	.87	3.18	1.15		
	Total	29	2.34	1.22	3.14	.85	2.79	1.13	2.79	.16
White	Male	5	2.43	.06	2.87	.54	1.60	.89		
	Female	1	3.76	.00	4.20	.00	3.46	.00		
	Total	6	2.65	.76	3.09	.72	1.91	1.10		
TOTAL	Male	23	2.44	1.13	2.97	.76	1.60	.89	2.48	.22
	Female	12	2.32	1.22	3.44	.86	3.20	1.10	3.36	.45
	Grand Total	35	2.40	1.15	3.13	.82	2.64	1.16	2.92	.25

Note. Uniforms worn 1995-96 and 1996-97.

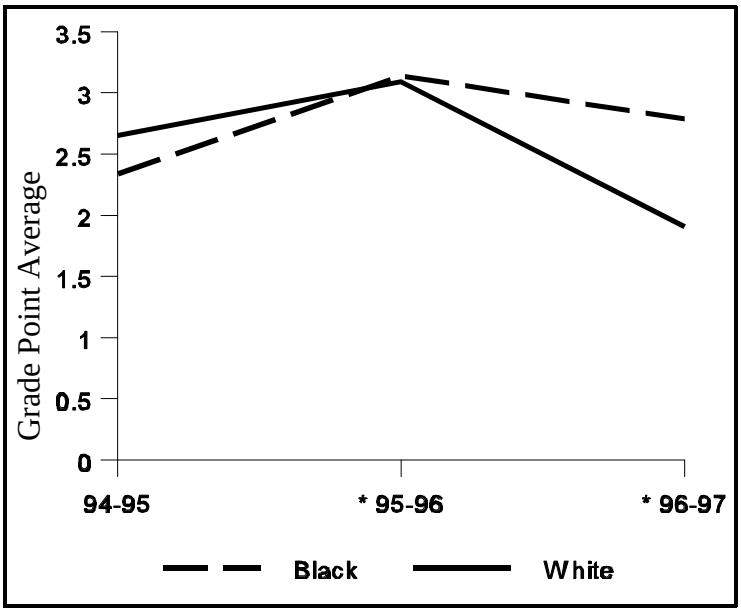

Figure 6. Mean grade point average by race and year for sample B, (n = 35). Grade point average for whites was higher than blacks in 1994-95. Grade point average increased for both between 1994-95 and 1995-96, with a decline for both between 1995-96 and 1996-97. Asterisk (*) indicates uniforms worn.

Findings for Sample C

Student identified as 9th in 1997-98 grade students who attended William H. Ruffner Middle School for three consecutive years between 1994-95 and 1996-97 were identified as Sample A. These same students were asked to complete the Uniform and Self-esteem scale designed to measure self-esteem.

There were 146 students in sample A, but only 60 students completed the Uniform and Self-esteem (USE) scale. A descriptive analysis of respondents to the USE scale based on race and gender is provided in Table 31. Using the criteria that a mean response greater than or equal to a 3.0 on the five-point Likert scale was positive, results indicated that respondents felt that uniforms had a negative effect on their overall self-esteem with a mean score of 2.68. A two-way analysis of variance showed no main effects for race or gender, and no significant interaction between race and gender with respect to self-esteem (Table 32).

Table 31

Means and Standard Deviations for Uniforms and Self-esteem Respondents by Race and Gender for Sample C (n = 60)

Race	Gender	n	M	SD
Black	Male	21	2.90	.71
	Female	20	2.46	.88
	Total	41	2.69	.82
White	Male	10	2.52	1.20
	Female	9	2.75	.99
	Total	19	2.63	1.08
Total	Male	31	2.71	.17
	Female	29	2.60	.18
	Grand Total	60	2.68	.90

Table 32

Summary of Two-way Analysis of Variance of Self-esteem by Race and Gender for Sample C (n = 60)

Source	SS	df	MS	F	p
Between-Subjects					
Race	.02	1	.02	.01	.91
Gender	.15	1	.15	.10	.80
Race x Gender	1.46	1	1.46	1.78	.18
Error	46.10	56	.82		
Total	48.41	59			