

**A LONGITUDINAL STUDY OF  
PERFORMANCE OF STUDENTS  
IN FUNDAMENTAL AND  
NON-FUNDAMENTAL PROGRAMS**

PINELLAS COUNTY SCHOOLS

Research and Accountability  
August, 2005

## Fundamental Schools Study Executive Summary

The current study is being conducted to compare performance of students in Fundamental and Non-Fundamental programs to acquire answers to the following questions.

- Do students in a Fundamental program achieve at a higher level than students in a Non-Fundamental program?
- Is there a difference in achievement level of Black and Non-Black students? If so, does the same achievement difference exist in Fundamental schools?
- How does race, participation in a Free/Reduced lunch program, and attending a Fundamental program affect student performance?

Students enrolled in the 5<sup>th</sup> and 8<sup>th</sup> grades at the end of the 2003/04 school year were selected for this study. Fifth and eighth grade students attending Non-Fundamental elementary and middle schools were designated as the Non-Fundamental comparison group for the study.

The elementary school sample consisted of 6,852 fifth graders in 2004 (Fundamental=328; Non-Fundamental=6,524). Students not participating in the subsidized lunch program, were selected to represent the high Socio-Economic Status comparison group. Achievement scores for the 5th graders in this study were collected from 1998/99 (kindergarten) through the end of 2003/04. Student groups were compared by examining the percentage of students meeting grade level expectations each year. Several measures were used to assess grade level expectations: for kindergarten, Readiness to Learn; for grades 1 and 2, Pinellas Instructional Assessment Plan (PIAP) Reading; for grades 3, 4, and 5, FCAT Sunshine State Standards Reading Levels.

The middle school sample consisted of 7,265 eighth graders in 2004 (Fundamental=327; Non-Fundamental= 6838). The FCAT results, the mean Developmental Reading Scale Score (DRSS), for students in the cohort for 2002 (sixth grade), 2003 (seventh grade), and 2004 (eight grade) were examined to inspect the performance of the students in the Fundamental schools as compared to the students in Non-Fundamental and students in two high SES middle schools. Additionally, the students' race was included in the analysis to examine the effect of racial differences. The Socio-Economic Status (SES) was measured by the percent of students in each school who received free or reduced lunch.

### **RESULTS FOR ELEMENTARY STUDENTS:**

- Fundamental students entered kindergarten at a higher readiness rate than Non-Fundamental students and maintained a higher level of achievement throughout the elementary years.
- When the racial effect was examined, Non-Black elementary school students entered school at a higher performance level and stayed at the higher level of achievement in elementary school. The Non-Black students performed at a higher rate than that of Black students in Fundamental schools, and Black students in Fundamental schools achieved a higher rate than Black students in Non-Fundamental schools.
- When the comparison was made between Black Fundamental students on FRL and those not on FRL, Fundamental Black students on FRL showed a higher percentage ready to start school in Kindergarten, but the lead was not sustained throughout the elementary school years. The comparison of the Fundamental students and high SES showed that a higher percent of the Fundamental students entered kindergarten ready to start school than high SES students. This small gap was not consistently present in all the grades and it became much smaller by 4<sup>th</sup> grade.

### **RESULTS FOR MIDDLE SCHOOL STUDENTS:**

- Students in a Fundamental program entered middle school at a higher achievement level and maintained a higher achievement level over students in a Non-Fundamental program.
- Non-Black middle school students entered schools at a higher performance level and stayed at the higher level in middle school. The same result was observed when comparing Black and Non-Black students in fundamental schools, but when Black students in Fundamental schools were compared to the Black students in Non-Fundamental schools, the black students in Fundamental schools started middle school at a higher level and stayed in the same position through out the middle school.
- When comparing Fundamental students with the students in the high SES schools, there was no difference observed between the performances of the two groups. The same observation was made when comparing the Black students in Fundamental school to Black students from the high SES schools.

# PERFORMANCE OF FUNDAMENTAL AND NON-FUNDAMENTAL STUDENTS

**BACKGROUND INFORMATION:** Fundamental schools emphasize a “back-to-basics” curriculum, teacher led instruction, strict discipline, student responsibility, homework, dress code, and mandatory parental involvement. The major conceptual differences between Fundamental and regular schools lie in the required participation by parents in the school’s curriculum, conferences, disciplinary practices, required transportation, and self-contained classrooms. Additionally, a Fundamental school reserves the right to send students back to their zoned school if their parents do not honor the contractual obligations of the fundamental school.

In the Fundamental school program, expectations are clearly defined, curriculum is sequentially organized and presented, and teaching is centered on a self-contained classroom. A well-disciplined and structured learning environment is one of the main trusts of the Fundamental program. The Fundamental schools use the same approved core curriculum as Non-Fundamental schools with the primary emphasis placed upon intensive work in the basic skills of reading, writing, and mathematics.

In 1976, the first Fundamental school, Curtis Fundamental was established in Pinellas County. At present, there are 5 Fundamental elementary schools and 2 Fundamental middle schools in the District.

A research study was conducted in 1983 to assess the Fundamental school concept along dimensions such as goals, implementation, and outcomes. Some of the most important findings were:

- The students in the Fundamental schools entered at a higher academic level and maintained that level.
- The two most cited benefits of a Fundamental school, which were not supported by the study, were; students developing better study habits and students learning more.
- The community holds these schools in high regard and believes that an additional elementary or middle school will be adequately populated.

The current study is being conducted to compare performance of students in Fundamental and Non-Fundamental programs to acquire answers to the following questions.

- Do students in a Fundamental program achieve at a higher level than students in a Non-Fundamental program?
- Is there a difference in achievement level of Black and Non-Black students? If so, does the same achievement difference exist in Fundamental schools?
- How does race, participation in a Free/Reduced lunch program, and attending a Fundamental program affect student performance?

**SAMPLE:** Students enrolled in the 5<sup>th</sup> and 8<sup>th</sup> grades at the end of the 2003/04 school year were selected for this study. Fifth and eighth grade students attending Non-Fundamental elementary and middle schools were designated as the Non-Fundamental comparison group for the study. Only those students who attended the same Fundamental school for the entire elementary or middle school years and who had achievement scores for all the years were included in the Fundamental groups.

Elementary: The elementary school sample consisted of 6,852 fifth graders in 2004 (Fundamental=328; Non-Fundamental=6,524). Students not participating in the subsidized lunch program, were selected to represent the high Socio-Economic Status comparison group.

Middle: The middle school sample consisted of 7,265 eighth graders in 2004 (Fundamental=327; Non-Fundamental= 6838). Two schools with a low Free/Reduced participation rate were selected to represent the high Socio-Economic Status comparison group (high SES = 655).

**Appendix A present the sampling design for this study; Appendix B present the study’s questions, comparisons and brief summary.**

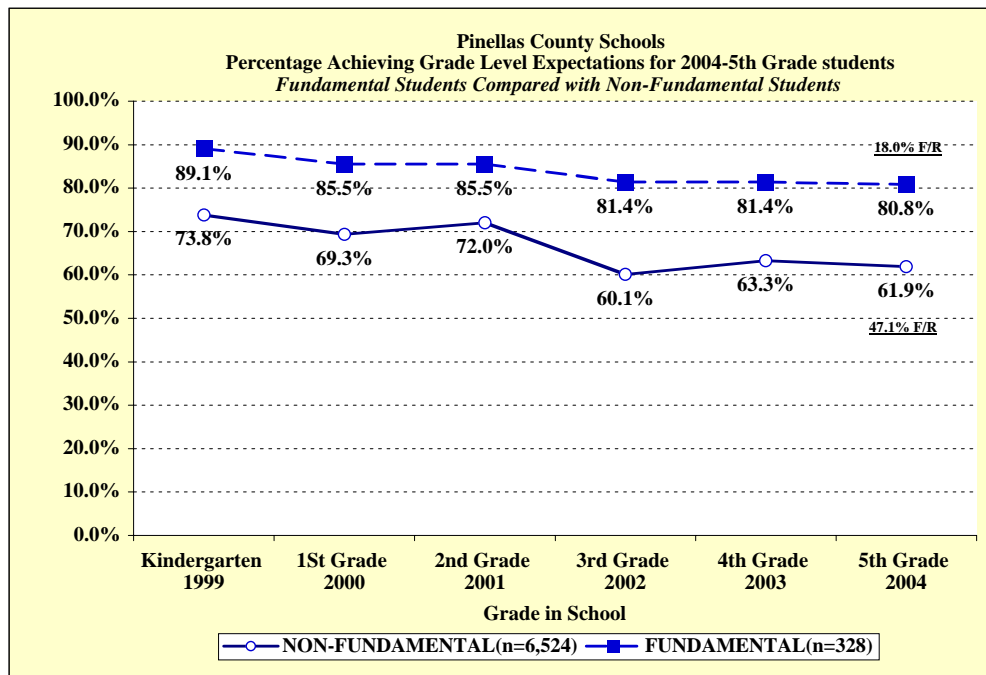
**ANALYSIS FOR ELEMENTARY SCHOOL STUDENTS:** Achievement scores for the 5th graders in this group were collected from 1998/99 (kindergarten) through the end of 2003/04. Student groups were compared by examining the percentage of students meeting grade level expectations each year. Several measures were used to assess grade level expectations: for kindergarten, Readiness to Learn; for grades 1 and 2, Pinellas Instructional Assessment Plan (PIAP) Reading; for grades 3, 4, and 5, FCAT Sunshine State Standards Reading Levels.

The first question to be examined:

- Do students in a Fundamental program achieve at a higher level than students in a Non-Fundamental program?

Figure 1 represents the percentage of students achieving grade level expectations for each year. It is evident that higher proportions of students enter Fundamental kindergarten meeting the School readiness expectation and continue achieving grade level expectations at a higher rate than those attending a Non-Fundamental program. It is also notable that the gap between the two groups was widening starting in the third grade. This finding may be due to the change of the measure from PIAP in K-2 grades to the FCAT in 3-5 grades. Performance of both groups declined over the years, but the Non Fundamental group had a steeper decline. Fundamental students also had a smaller proportion of students (18.0%) participating in the Free/Reduced lunch program than Non-Fundamental students (47.1%).

Figure 1

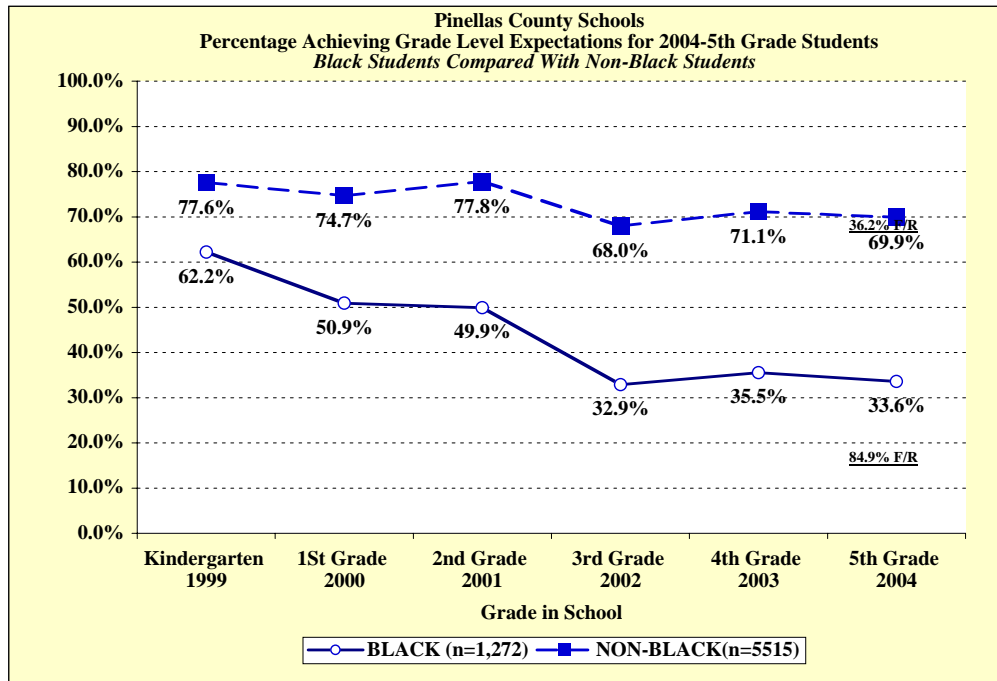


The next three figures investigate the second question introduced in this study:

- Is there a difference in achievement level of Black and Non-Black students in a Fundamental program?

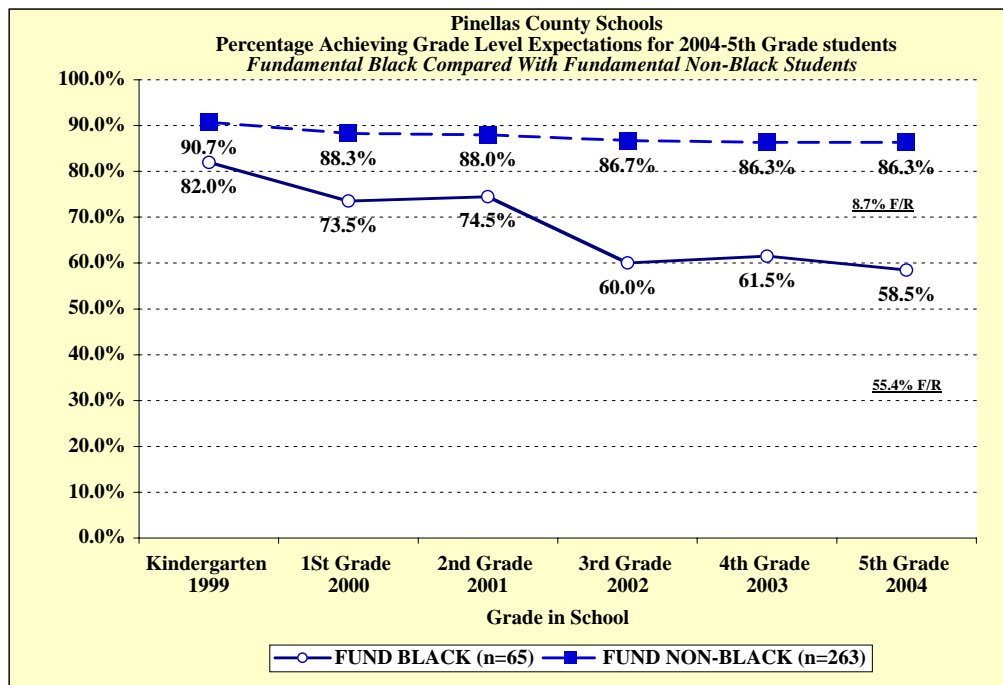
Figure 2 depicts the percentage of Non-Black students achieving grade level expectations for each year of elementary school compared to Black students. As can be seen, a higher percentage of Non-Black students entered kindergarten meeting the Readiness expectations and continued achieving grade level expectations at a consistently higher rate than that of Black students. This observed gap becomes much wider throughout the elementary years; the differences for grades 3, 4, and 5 averages approximately 36%, twice the difference seen in Kindergarten. Notably, the percentage of Black students receiving Free/Reduced lunch is over twice that of Non-Black students.

Figure 2



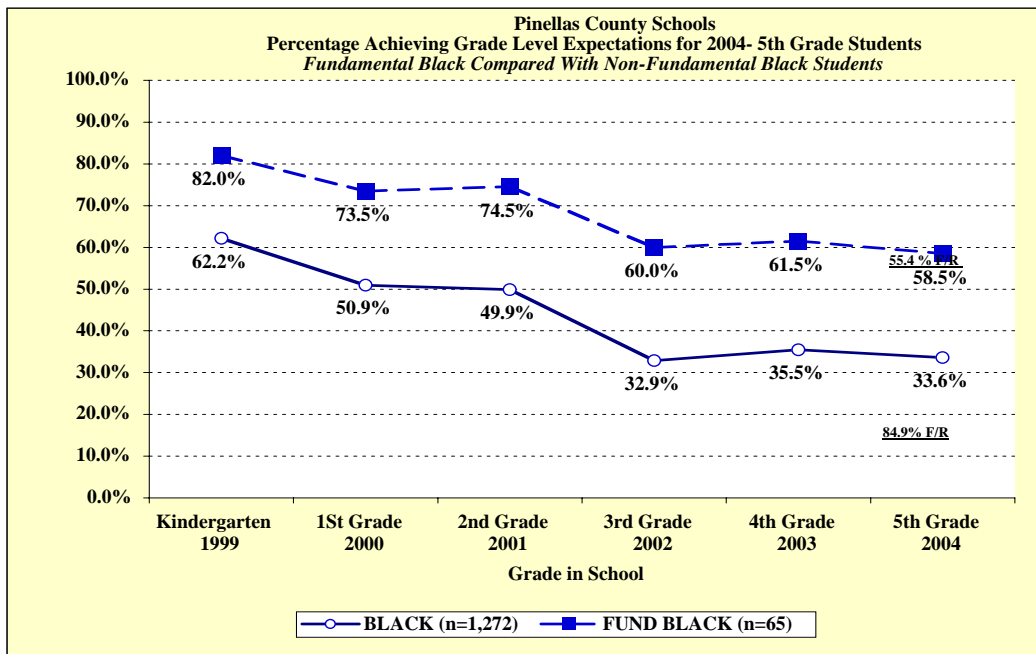
The disparity shown between Black and Non-Black students shown in Figure 2 is also evident when comparing Fundamental Black and Non-Black students. However, as it can be seen in Figure 3, the observed difference between the Black and Non-Black students in Fundamental schools is less than half of the difference seen among Black and Non-Black students. Only 8.7% of Fundamental Non-Black students participated in the Free/Reduced lunch program as compared to 55.4% of Fundamental Black students.

Figure 3



Furthermore, an analysis was conducted to explore the differences seen in ethnicity across the two programs. Figure 4 graphically represents the comparison between Fundamental and Non-Fundamental Black students. The percentage of Fundamental Black students achieving grade level expectations remains substantially higher than that of Black students attending regular schools. This difference remains constant throughout the elementary years. The achievement of both groups, Black students in Fundamental and Non-Fundamental schools, declined throughout the elementary school years. Participation in the Free/Reduced lunch program shows that Fundamental Black students are not as likely to participate in the program (55.4%) as are Non-Fundamental Black students (84.9%).

Figure 4

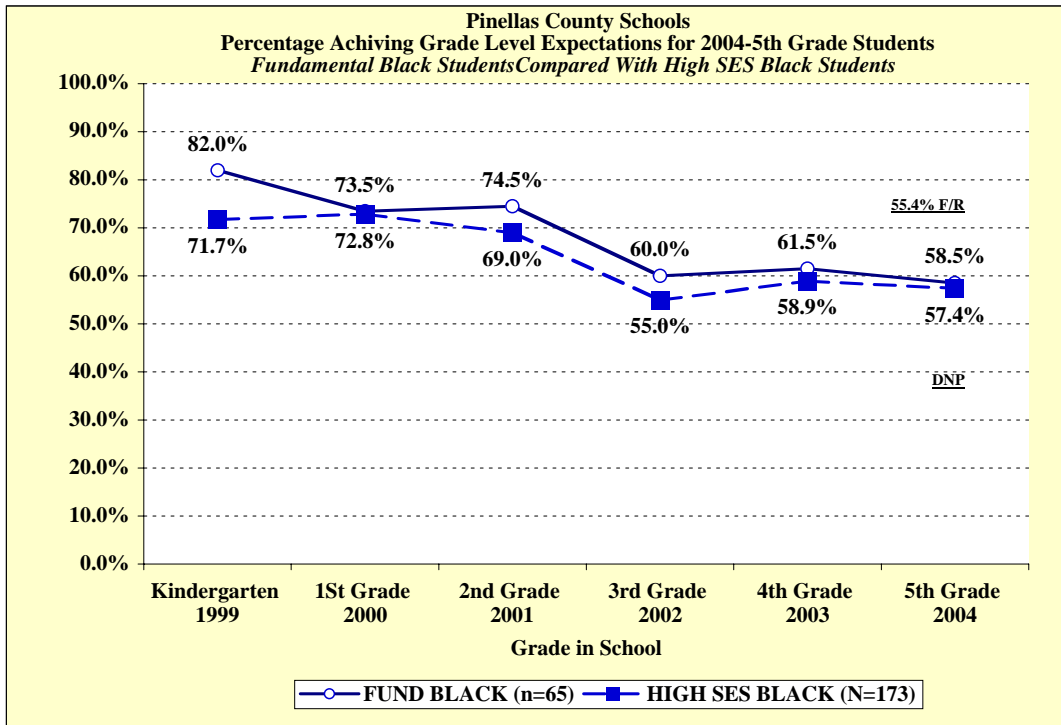


The last two figures present the results of the analysis for the third question of the study:

- How does race, participation in a Free/Reduced lunch program, and attending a Fundamental program affect student performance?

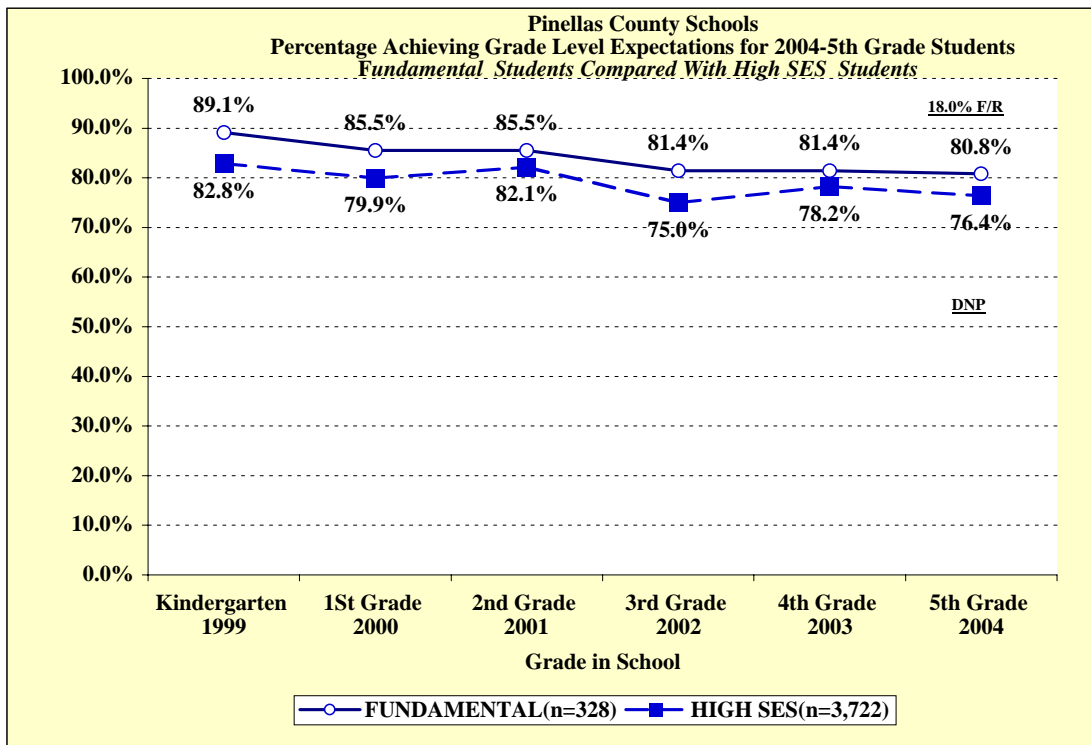
A comparison was made to assess the performance differences between the Fundamental Black students participating in a Free/Reduced Lunch program and Fundamental Black students not participating in a Free/Reduced Lunch program. As can be seen in Figure 5, the percentage of kindergarten Fundamental Black students on Free/Reduced Lunch who are achieving grade level expectations is higher by 10 percentage points than that of Black students with high Socio-Economic Status. (*high SES is defined as any student not participating in the Free/Reduced lunch program*). The results of the two groups, for the other grades of the elementary school closely mirror one another, having a declining pattern throughout the elementary school years. Free/Reduced lunch participation for Fundamental Black students was 55.4%.

Figure 5



Fundamental schools Students were compared to high SES students (*high SES is defined as any student not participating in the Free/Reduced lunch program*). The results are presented in Figure 6, which show that the percentage of Fundamental students and high SES students, achieving grade level expectation is remarkably similar. Fundamental student’s participation in the Free/Reduced lunch program was 18%.

Figure 6



**RESULTS FOR ELEMENTARY STUDENTS:**

- Fundamental students entered kindergarten at a higher readiness rate than Non-Fundamental students and maintained a higher level of achievement throughout the elementary years.
- When the racial effect was examined, Non-Black elementary school students entered school at a higher performance level and stayed at the higher level of achievement in elementary school. The Non-Black students performed at a higher rate than that of Black students in Fundamental schools, and Black students in Fundamental schools achieved a higher rate than Black students in Non-Fundamental schools.
- When the comparison was made between Black Fundamental students on FRL and those not on FRL, Fundamental Black students on FRL showed a higher percentage ready to start school in Kindergarten, but the lead was not sustained throughout the elementary school years. The comparison of the Fundamental students and high SES showed that a higher percent of the Fundamental students entered kindergarten ready to start school than high SES students. This small gap was not consistently present in all the grades and it became much smaller by 4<sup>th</sup> grade.

**ANALYSIS FOR MIDDLE SCHOOL STUDENTS:**

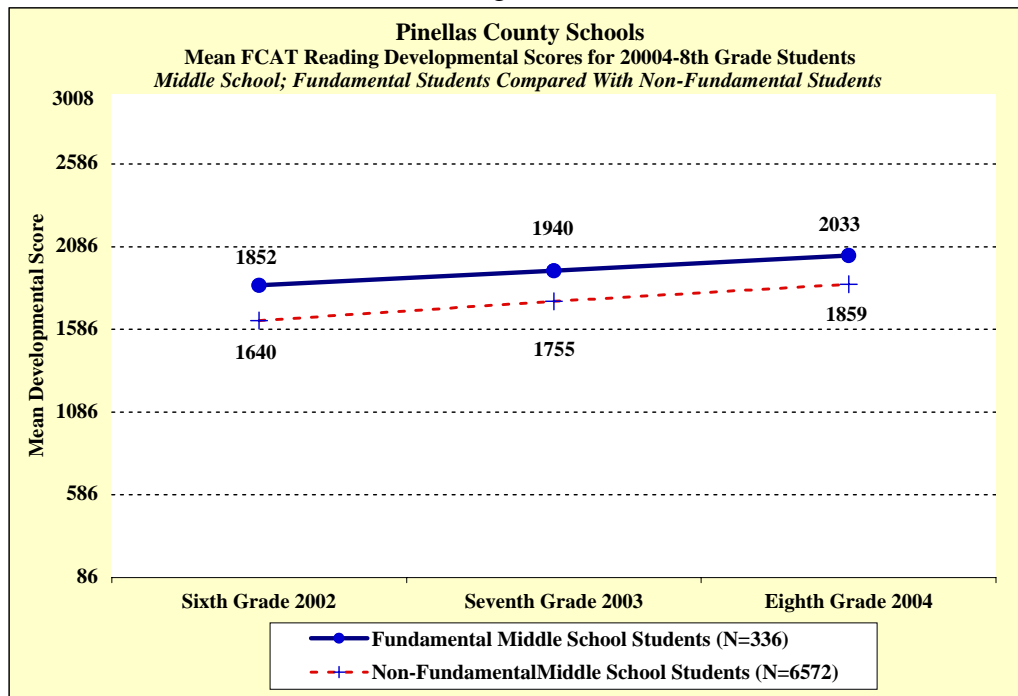
The FCAT results, the mean Developmental Reading Scale Score (DRSS), for students in the cohort for 2002 (sixth grade), 2003 (seventh grade), and 2004 (eighth grade) were examined to inspect the performance of the students in the Fundamental schools as compared to the students in Non-Fundamental and students in two high SES middle schools. Additionally, the students’ race was included in the analysis to examine the effect of racial differences. The Socio-Economic Status (SES) was measured by the percent of students in each school who received free or reduced lunch.

The same three questions which were investigated for elementary students were considered for middle school;

- Do the students in a Fundamental program achieve at a higher level than students in a Non-Fundamental program?

The results, presented in Figure 7, show the mean Developmental Reading Scale Score for students in the Fundamental and the Non-Fundamental schools. It is evident that students in a Fundamental program entered middle school at a higher achievement level and maintained that difference throughout the three years of middle school. Fundamental students also had a smaller percentage of students (13%) participating in the Free/Reduced lunch program than Non-Fundamental students (34%).

Figure 7





The next three figures examine the second question investigated by this study:

- Is there a difference in achievement level of Black and Non-Black students in a Fundamental program?

The comparison of Black and Non-Black students in is presented in Figure 8. It is apparent that the Black students entered middle school with the lower mean Developmental Reading Scale Score (DRSS) and stayed at the same position throughout the three years. The same type of comparison was performed for Black and Non-Black students in Fundamental schools and similar results were observed. The Black students entered middle school with the lower mean DRSS and stayed at the same position throughout the three years (Figure 9).

Figure 8

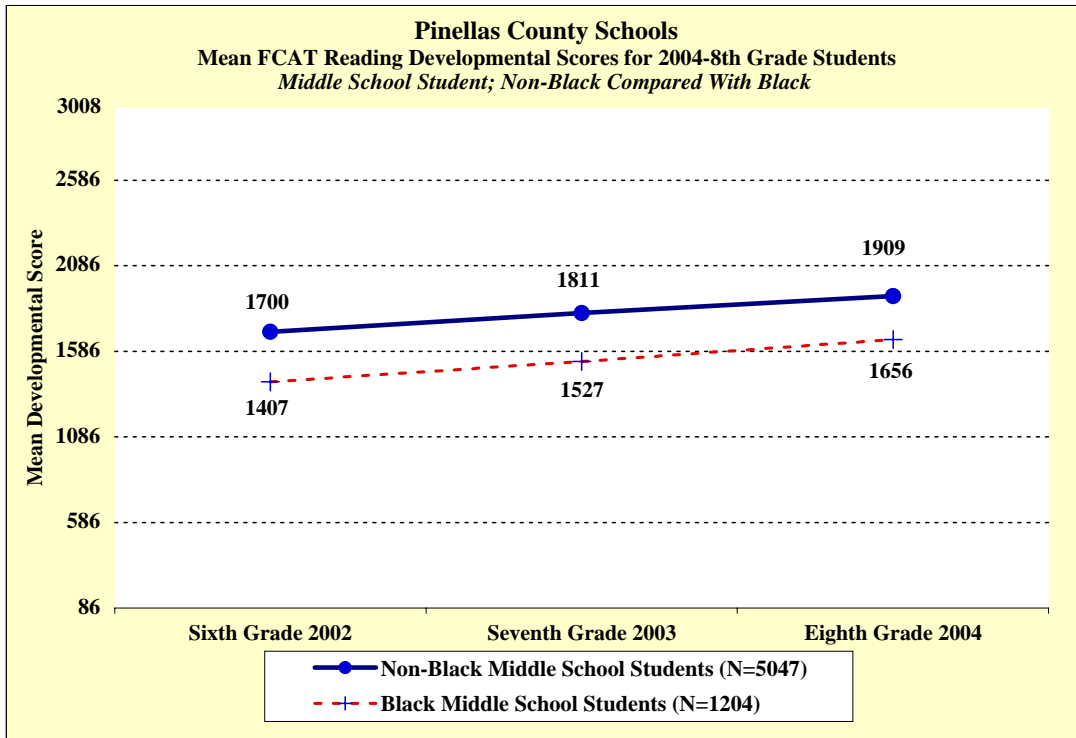
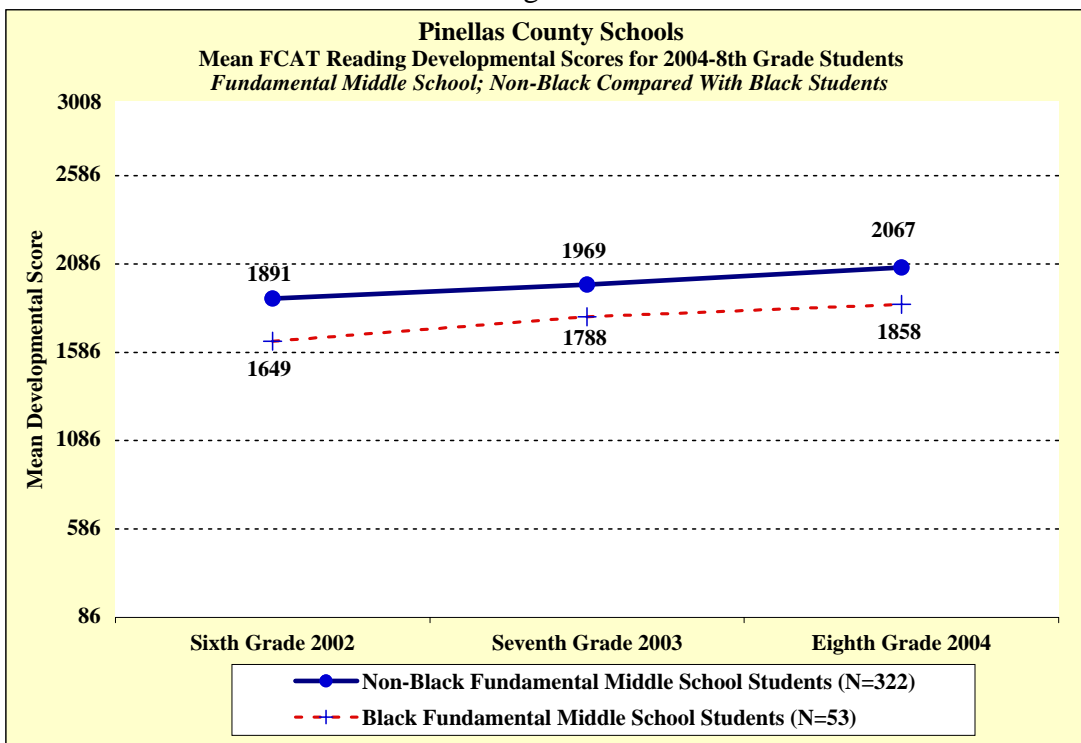
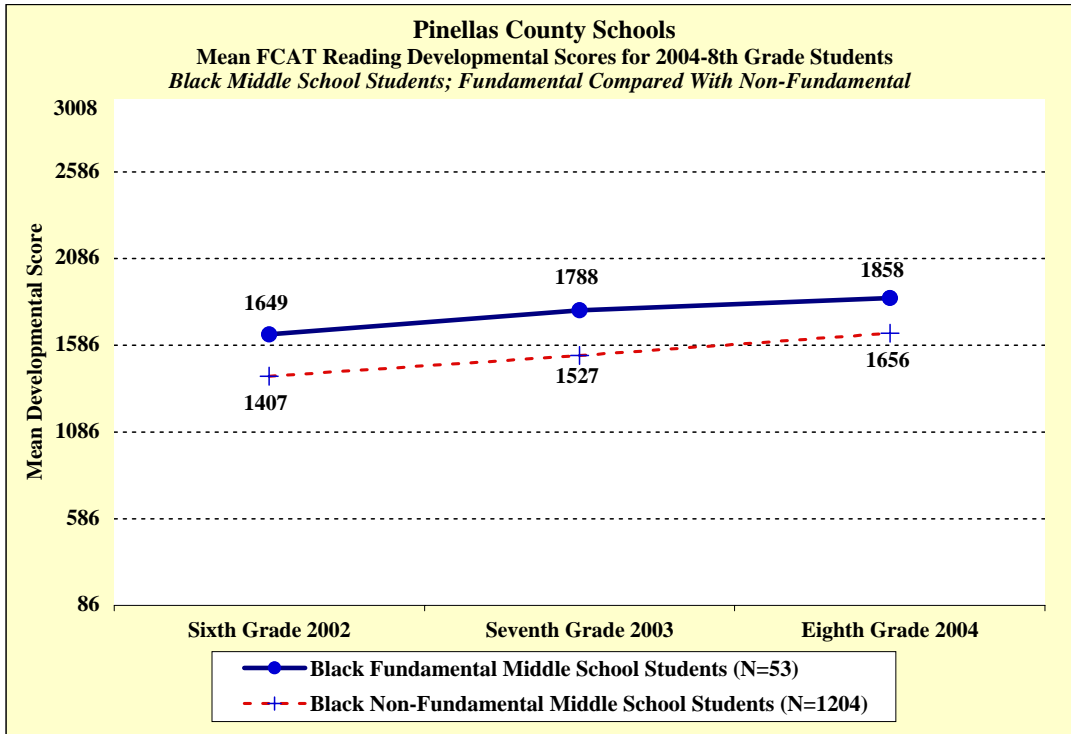


Figure 9



To investigate the effect of race on student performance, the Black students in Fundamental and Non-Fundamental schools were compared. The Black students in Fundamental schools started middle school at a higher performance level than Non-Fundamental students. This difference was sustained for all the years of the study (Figure 10).

Figure 10



The last two figures show the results of analysis for the third question of the study:

- How does race, participation in Free/Reduced lunch program, and attending a Fundamental program affect student performance?

Students in Fundamental schools were compared to students in high SES schools. The results are presented in Figure 11; the performance of these two groups was very similar for all the middle school years. This comparison was carried further to investigate the difference between the Black students from these two different school settings. The performance of students in high SES schools mirrored that of the students in Fundamental schools (Figure 12).

Figure 11

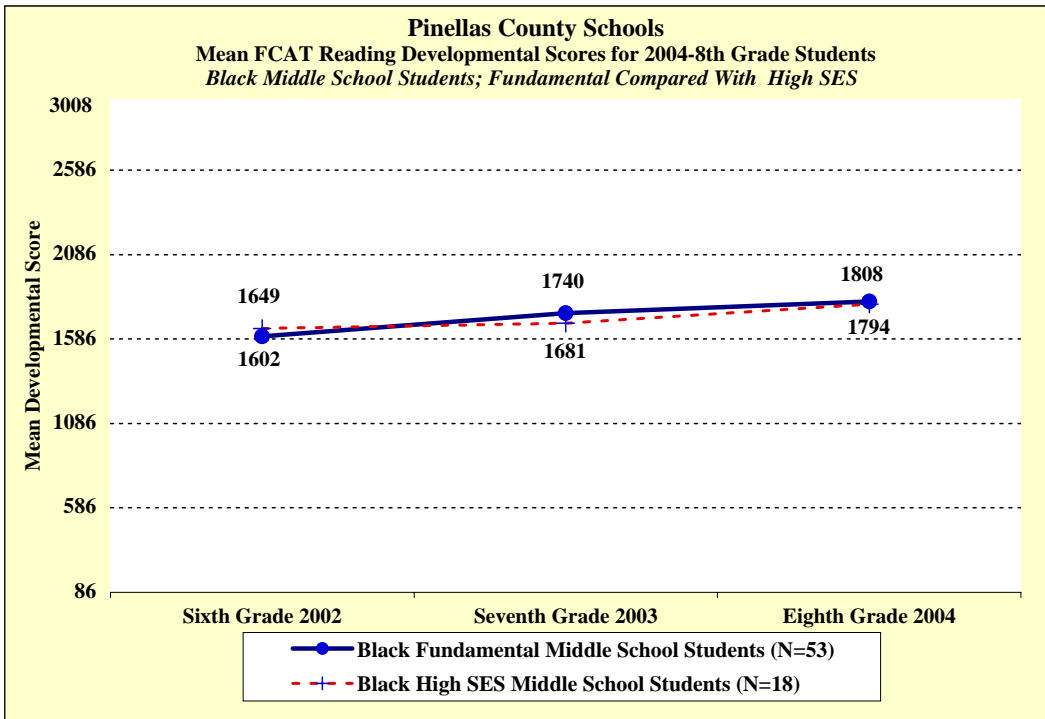
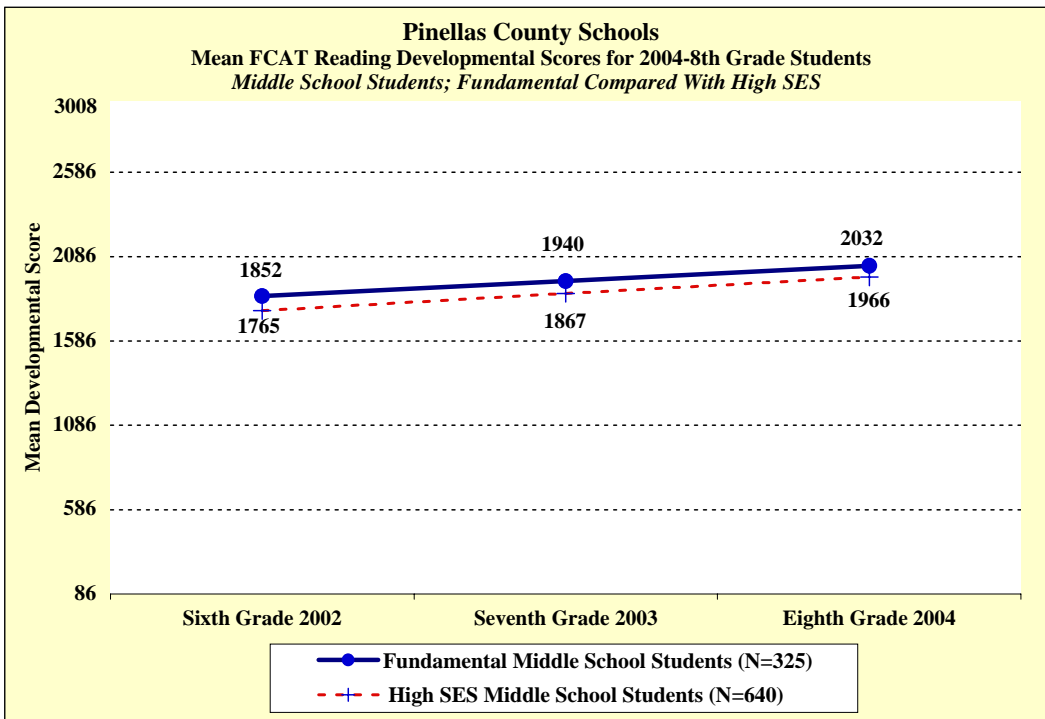


Figure 12



## **RESULTS FOR MIDDLE SCHOOL STUDENTS:**

- Students in a Fundamental program entered middle school at a higher achievement level and maintained a higher achievement level over students in a Non-Fundamental program.
- Non-Black middle school students entered schools at a higher performance level and stayed at the higher level in middle school. The same result was observed when comparing Black and Non-Black students in fundamental schools, but when Black students in Fundamental schools were compared to the Black students in Non-Fundamental schools, the black students in Fundamental schools started middle school at a higher level and stayed in the same position through out the middle school.
- When comparing Fundamental students with the students in the high SES schools, there was no difference observed between the performances of the two groups. The same observation was made when comparing the Black students in Fundamental school to Black students from the high SES schools.

**LIMITATIONS:** There is a limitation to this study affecting both the elementary and middle school results. This relates to the relatively small number of students in the Fundamental schools. This is especially limiting when analyzing the effects of race on student achievement between the Fundamental and Non-Fundamental populations. This limitation precluded using elementary schools with similar achievement scores as a comparison with elementary Fundamental schools.

Additionally, FCAT is not administered in kindergarten to second grade. Thus, Grade Level Readiness for elementary students was defined by utilizing several measures; FCAT Sunshine State Standards Levels for grades 3, 4, and 5, PIAP scores for grades 1 and 2, and Readiness to Learn scores for kindergarten. Achievement for middle school students was determined by mean FCAT Developmental Scale Scores for each study group. Therefore, there is not a uniform measure of student achievement across kindergarten to eighth grade.

Participation in the Free/Reduced Lunch program was used as a measure for Socio-Economic Status (SES). While a viable indicator for elementary students, middle school students are more reluctant to participate in the lunch program. Consequently, using this indicator in middle school is less reliable than in elementary grades.

Furthermore, more disparate criteria were used to assess performance of elementary students (percent at or above grade level) than the middle school students (mean FCAT Developmental Reading Scale Score). This was necessitated by the lack of FCAT scores for Kindergarten, first and second grades in the elementary. This limits the possibility of comparing the trends during elementary school years to those during middle school years.

## **CONCLUSIONS:**

In this current study, any difference found between the groups achievement was present prior to students entering the Fundamental school. Therefore, these differences may not be contributed to the effect of the Fundamental schools. Furthermore, to fully understand the effect of a Fundamental program on student achievement, all the contributing factors such as the role of parental participation; student's participation in enrichment or exceptional programs should be included in the study.

The study revealed the following answer to the question: Do students in a Fundamental program achieve at a higher level than students in a Non-Fundamental program?

- *Fundamental students enter school at a higher achievement level and maintain a higher achievement rate throughout the school year. This was evident for longitudinal cohorts of students and for all grade levels.*

The question: Is there a difference in achievement level of Black and Non-Black students? If so, does the same achievement difference exist in Fundamental schools?

- *Non-Black students achieve at a higher level than Black students. This was evident longitudinal regardless of Socio-Economic Status (SES) or Fundamental status.*

And the last question of the study was: How does race, participation in a Free/Reduced lunch program, and attending a Fundamental program affect student performance?

- *There is an observed difference among the groups representing the racial and/or SES groups as they entered kindergarten, but the differences did not sustain throughout the elementary years.*

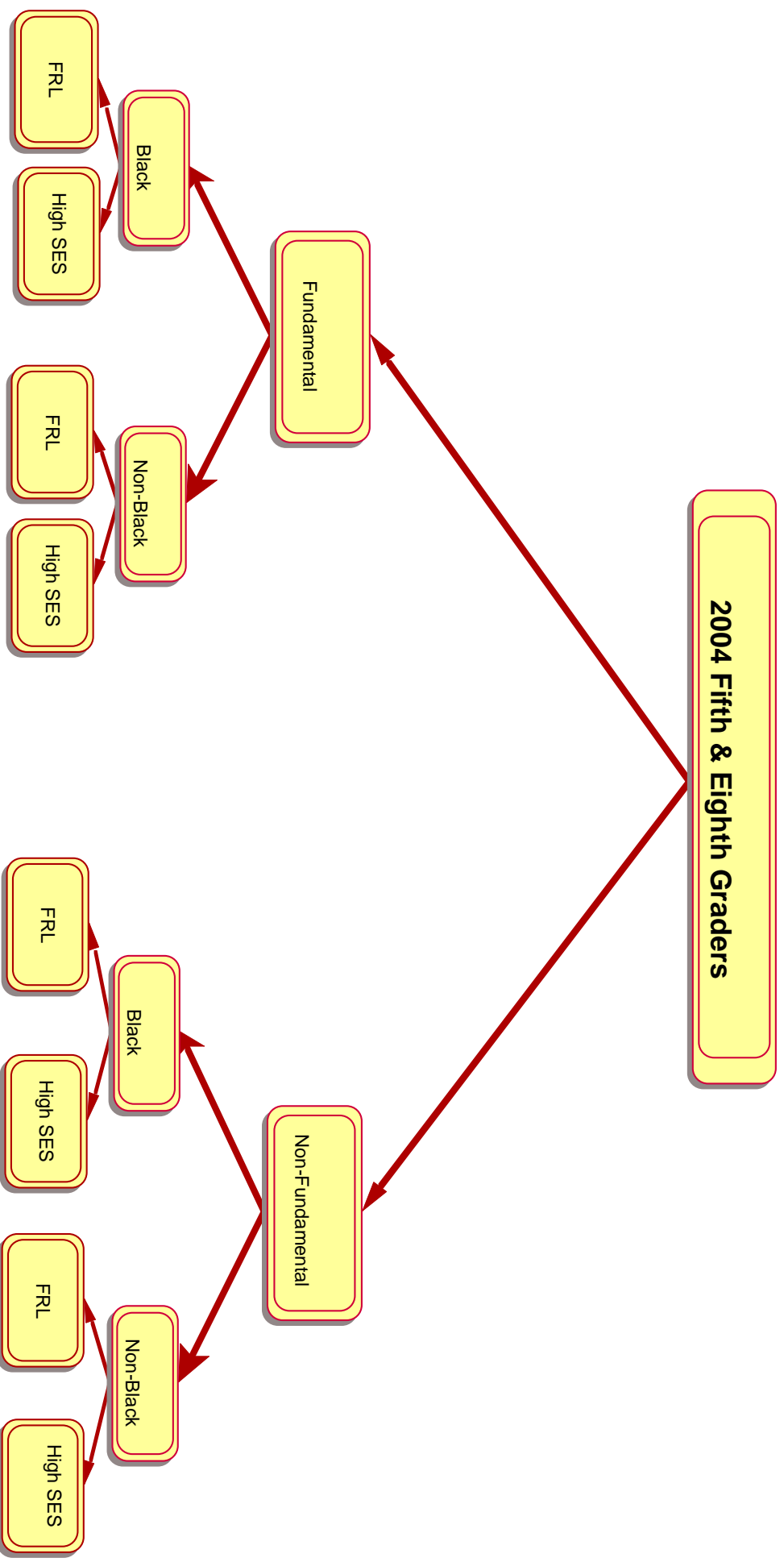
**The analysis of this study presented the following results:**

In summary, students attending Fundamental schools tend to achieve at a higher level than students attending Non-Fundamental schools. Students who do not participate in the Free/Reduced lunch program (high Socio-Economic Status), regardless of ethnicity, perform to a similar level whether they attend a Fundamental school or not.

However, Fundamental students, regardless of Socio-Economic Status, tend to perform at a higher level than high SES students at regular schools. Particularly, low Socio-Economic Status Black students attending a Fundamental school perform as well as high Socio-Economic Status Black students attending either regular or Fundamental schools.

The most evident conclusion of the study is that the students in Fundamental programs enter schools at a higher academic level and they maintain it; this conclusion also supports the result of the 1983 study.

# APPENDIX A FUNDAMENTAL STUDY DESIGN



**APPENDIX B  
FUNDAMENTAL STUDY-QUESTIONS, COMPARISONS & RESULTS**

Study Question	Comparisons	Results
<p>Do students in a Fundamental program achieve at a higher level than students in a Non-Fundamental program?</p>	<p>Fundamental students vs. Non-Fundamental students</p>	<ul style="list-style-type: none"> <li>• Fundamental students entered kindergarten at a higher readiness rate than Non-Fundamental students and maintained a higher level of achievement throughout the elementary years.</li> <li>• Middle school students in a Fundamental program entered middle school at a higher achievement level and maintained a higher achievement level over students in a Non-Fundamental program.</li> </ul>
<p>Is there a difference in achievement growth of Black and Non-Black students? If so, does the same achievement difference exist in Fundamental schools?</p>	<p>Black students vs. Non-Black students  Fundamental Black students vs. Fundamental Non-Black students  Black Fundamental students vs. Black Non-Fundamental students</p>	<ul style="list-style-type: none"> <li>• When the racial effect was examined, Non-Black elementary school students entered school at a higher performance level and stayed at the higher level in elementary school. The Non-Black students performed at a higher rate than that of Black students in Fundamental schools, but Black students in Fundamental schools achieved a higher rate than Black students in Non-Fundamental schools.</li> <li>• Non-Black middle school students entered schools at a higher performance level and stayed at the higher level in middle school. The same result was observed when comparing Black and Non-Black students in Fundamental schools, but when Black students in Fundamental schools were compared to the Black students in Non-Fundamental schools, the Black students in Fundamental schools started middle school at a higher level and stayed in the same position through out the middle school.</li> </ul>
<p>How does race, participation in a Free/Reduced lunch program, and attending a Fundamental program affect student performance?</p>	<p>Black Fundamental students on FRL and Black Fundamental high SES students.  Fundamental students vs. high SES students</p>	<ul style="list-style-type: none"> <li>• When the comparison was made between Black Fundamental elementary students on FRL and those not on FRL, Fundamental Black students on FRL showed a higher percentage ready to start school in kindergarten, but the lead was not sustained throughout the elementary school years. The comparison of the Fundamental students and high SES students showed that a higher percent of the Fundamental students entered kindergarten ready to start school than high SES students. This small gap was not consistently present in all the grades and it became much smaller by 4<sup>th</sup> grade.</li> <li>• When comparing Fundamental middle schools students with the students in the high SES schools, there was no difference observed between the performances of the two groups. The same observation was made when comparing the Black students in Fundamental school to Black students from the high SES schools.</li> </ul>