CHAPTER SIX
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Does Resegregation Matter?
The Impact of Social Composition on Academic Achievement in Southern High Schools

The issue of school segregation came to the forefront of education policy when, in 1954, the U.S. Supreme Court declared that the "separate but equal" segregation of schools was unconstitutional because it was "inherently unequal." Subsequent litigation and federal legislation, primarily during the 1960s and 1970s, led to increased racial integration, especially in the South. For example, the percentage of blacks in the South who attended white-majority elementary and secondary schools increased from 2.3 percent in 1964 to 43.5 percent in 1988.

But over the past twenty years, desegregation policies have been largely abandoned because of declining support for desegregation from the executive and judicial branches of the federal government and the growing concentration of minorities in urban school districts that made meaningful desegregation nearly impossible. Instead, many education and government officials have come to believe that integrating schools is less important than providing compensatory funding and setting high standards for all students and schools. As a result, segregation in America's schools is increasing. Between 1988 and 2000, the percentage of blacks in the South who attended white-majority schools decreased from 43.4 percent to 31.0 percent. Nationwide, more than 76 percent of all black and Latino students in the United States attended predominantly minority schools in 2000, a higher percentage than thirty years earlier.

Although segregation has often been viewed in racial terms, racial segregation is strongly related to socioeconomic segregation (see fig. 6.3). Not only are black and Latino students more likely to be poor, they are also more likely to attend high-poverty schools. In 1999, almost one-third of all black and Latino children under the age of eighteen were living in poverty, compared to 13 percent of white children. And in 2000, the average black or Latino student attended a school in which more than 44 percent of the students were poor, whereas the average white
attended a school in which 19 percent of the students were poor. To do so we
examine the impact of poverty on students' educational achievement, a
factor that is highly correlated with family income. Specifically, we asked
whether the effects of poverty on student achievement are the same at all
contexts: in schools where the majority of students are low-income and in
higher-income schools. Although it may seem obvious that poverty and
academic performance would be negatively correlated, it may also be true
that the effects of poverty vary by school context. For example, the impact
of poverty on student achievement may be different in schools with lower
income students than in schools with higher income students, even though
both schools have the same poverty level.

At the elementary school level, both individual poverty and school poverty
affect academic achievement. Recent data from the National Assessment of
Educational Progress show not only that poor students have lower achievement
scores than non-poor students, but that poor students have lower
achievement scores in high poverty schools than poor students in
higher-income schools. In addition, poor students in high poverty schools have
lower achievement scores than non-poor students in high income schools.

And so, what can we do to improve educational attainment at the high school
evel? We know that poverty is an important factor in academic achievement,
but what can we do to mitigate its effects and help students succeed?

Finally, do the impacts of context and policies vary by school context? To answer
this question, we will examine the characteristics of schools and their
impact on student achievement. In particular, we will look at how school
context affects the relationship between poverty and academic achievement.
We will also consider how school context affects the effectiveness of
interventions designed to improve student achievement.

Previous Research

While research has consistently documented the impact of individual
socioeconomic status (SES) on academic achievement, substantial evidence also
indicates that school context affects student achievement. Students in schools
with more affluent students tend to have higher achievement scores than
students in schools with lower income students. This finding is consistent
with previous research, which has shown that school context affects the
relationship between SES and academic achievement.

In addition, research has shown that schools with higher income students
are more likely to have resources and opportunities that contribute to
college readiness. For example, high school students in schools with higher
income students are more likely to have access to advanced courses and
extracurricular activities that can help them prepare for college.

However, research is also beginning to examine the ways in which school
context can interact with individual characteristics to affect student
achievement. For example, research has shown that the effects of poverty
on academic achievement may be different for students in high school than
for students in elementary school. In particular, research has found that
poverty's impact on academic achievement is more pronounced in
elementary school than in high school. This finding is consistent with
previous research, which has shown that the effects of poverty on
academic achievement tend to be more pronounced in earlier grades.

Since the publication of this study, a number of studies using a variety of
research designs have explored the effects of school context on student
achievement. These studies have used a range of research designs, from
longitudinal studies to cross-sectional studies. The results of these studies
have been mixed, with some finding that school context has a significant
impact on student achievement and others finding that the impact is
negligible.
However, the model used for this report focused on schools with lower qualified student populations, which may not fully reflect the experiences of all high school students. For example, the model may not adequately capture the unique challenges faced by schools with high proportions of minority students, or those located in rural areas. Additionally, the model may not accurately reflect the experiences of students from lower-income families, who may face additional barriers to educational success.

In summary, existing research suggests that social composition significantly impacts student achievement. The effects are stronger in cross-sectional studies that do not control for prior achievement. The TPS model provides a framework for understanding these effects, and it is important to consider the role of social composition in the context of school performance. However, it is important to note that while social composition may be a factor in student achievement, it is not the only factor. Other variables, such as student motivation, family supports, and school resources, also play a significant role.

The results of this study highlight the importance of addressing social composition in educational policy and practice. Policymakers and educators should consider strategies to address the challenges faced by students from low-income and minority backgrounds, such as providing targeted support programs, increasing access to resources, and implementing policies that promote equity and fairness in educational opportunities.

The Present Study

This study advances many of the limitations of past research on social composition by focusing on high schools. It is based on national longitudinal data — the National Education Longitudinal Study of 1988 (NELS:88). This dataset includes measures of social composition, achievement, and other factors that may influence student outcomes. The study uses a variety of statistical techniques to control for the effects of social composition on student achievement, allowing for a more accurate understanding of the relationship between these variables.

The results of this study suggest that social composition has a significant impact on student achievement. However, the effects vary depending on the specific characteristics of the student body. For example, schools with high proportions of minority students may experience different effects than schools with a more homogeneous student body.

In conclusion, social composition is a critical factor in student achievement. Policymakers and educators should consider the role of social composition in developing strategies to improve educational opportunities for all students. By addressing the challenges faced by students from low-income and minority backgrounds, we can ensure that all students have the opportunity to achieve their full potential.
ment than tests in a single subject. Fourth, the data include comprehensive information on the characteristics of schools, which can be used to identify how and why segregation affects student learning. Finally, the data include a large number of high schools both in the seventeen southern and border states (N = 533) and in the rest of the United States (N = 598), thereby allowing for regional comparisons of segregation.36

How Do Southern Students and High Schools Compare?

Before examining the impacts of segregation, it is useful to see how students and schools in the South compare to students and schools in the rest of the United States. Available achievement data show that student achievement is generally lower in the South than in other regions of the United States. For example, only 26 percent of fourth-grade students in the South scored at the "proficient" reading level on the 2000 National Assessment of Educational Progress, compared to 47 percent in the Northeast, 35 percent in the central region, and 30 percent in the West.37 Another recent study found that not one southern state had 2002 average college entrance scores in the top ten in the nation and that fourteen of sixteen southern states ranked in the bottom half of the nation.38

Data from this study show similar disparities. Both initial average achievement in grade 8 and achievement growth rates between grades 8 and 12 were lower for students attending schools in the South than in other regions of the country during the period from 1988 to 1991 (figure 6.2). The difference in initial achievement on the composite test score (a combined score in math, science, reading, and history) was about 1.5 points, which is equivalent to about three-quarters of an academic year in student learning.39 In other words, students in the South entered high school about three-quarters of a grade level behind their peers in other parts of the country. By the end of high school, the gap widened to 2.1 points, or about one full academic year.

What accounts for these differences? One factor is demographics. Students in the South are generally more disadvantaged than students in the rest of the United States—in particular in terms of average household income.40 In our data, the mean SES of students in the South was .12 of a standard deviation lower than in the rest of the United States.41 The South also has almost twice the proportion of black and Hispanic students—who generally have lower achievement levels—than the rest of the United States.42

By controlling for demographic characteristics in our statistical models, we compared achievement levels of students in the South with those of students from similar family and academic backgrounds in other regions of the country. These comparisons showed that average achievement levels were lower for all racial groups in southern schools, even after controlling for other characteristics of students that affect achievement, such as SES, family type, and academic background (figure 6.3). For example, middle-class white students in the South began high school in 1988 almost a half year (one point) behind middle-class white students in the rest of the country. And even though their achievement growth (learning) during high school lagged behind other students by only about one month of learning over the four years, they finished high school even further behind their counterparts in the rest of the country.

The achievement gap among racial and ethnic groups was similar in both southern and nonsouthern high schools. Black and Hispanic students began high school with achievement levels considerably lower than those of white students, and, in the case of blacks, the achievement gap widened over the four years of high school. The patterns differed for Asian students—they began high school...
with similar achievement levels to white students but exceeded them by the end of twelfth grade, especially in southern high schools.

These data show that considerable differences exist in achievement and achievement growth between students in the South and students in other regions of the country overall as well as among racial and ethnic groups. Our analysis also revealed that most student background characteristics predicted achievement in the South similar to that in other regions of the United States. For example, in both the South and other regions, students' SES was a strong, significant predictor of high school learning. Other student factors that similarly predicted high school learning in both regions were middle school grades, being retained in grade (negative predictor), and having high school friends who had dropped out of school (negative). Only two exceptions arose. Outside the South, coming from a home without two parents was a significant negative predictor of high school learning, while having aspirations to attend a four-year college was a significant positive predictor. In the South, however, neither factor was a significant predictor of high school learning.

Our analysis revealed considerable differences in achievement growth not only among students but also among schools. One way to illustrate those differences is to estimate the range of achievement growth between the highest-performing and lowest-performing high schools. Those estimates revealed that differences in achievement growth—the amount of learning that took place during four years of high school—among schools was substantial, ranging from a low of 4.2 points (approximately 50 percent less than the average learning rate in the total population) to a high of 10.8 points (approximately 36 percent more) in the South, and ranging from a low of 4.9 points (approximately 60 percent less) to a high of 11.5 points (approximately 44 percent more) in other regions (figure 6.3). Put another way, students in some high schools learned more than twice as much as students in other high schools. This finding suggests that where students attend high school has a great deal to do with how much they learn.

The extent to which high schools contribute to student learning can be further illustrated by calculating the proportion of the total variability in initial achievement and achievement growth attributable to students and to schools. The results show that about three-quarters of the variability in both achievement and achievement growth resulted from differences among students and about one-quarter resulted from differences among the schools that they attend. Thus, even if differences among schools were completely eliminated, considerable variability would remain in achievement levels and learning rates among students. The 25 percent variability in student achievement growth attributed to schools provides an upper bound on the extent to which school reforms alone could improve educational opportunity for poor, minority students without reforms.
in social policy designed to address inequalities in student and family circumstances that contribute to student learning. We discuss this issue further in the chapter’s final section.

Although 25 percent of the variability in student achievement occurred at the school level, not all this variability resulted from school characteristics. Some of the variability arose from the differences in the characteristics of students attending schools and the effects of those characteristics on achievement no matter where students attend school. In other words, students from advantaged backgrounds can be expected to do well in school regardless of the school they attend. As a result, schools with more advantaged students will have both higher initial achievement and higher achievement growth than schools with less advantaged students.

Our statistical analysis revealed that differences in the background characteristics of students accounted for almost three-fourths of the initial variability among schools in initial achievement levels and more than one-fourth of the initial variability among schools in achievement growth. Since the initial achievement levels were assessed before entering high school, it makes sense that most of the variability was not related to the high schools that students attend but rather to their background characteristics. In contrast, most of the variability in achievement growth could not be attributed to the background characteristics of students (or at least the characteristics included in our model), so it most likely resulted from the characteristics of the schools that students attended.

**Does Segregation Matter?**

After adjusting for the background characteristics of students, we then investigated the impact of segregation. We did so by examining whether the average characteristics of students within a school—referred to as compositional or contextual effects—predicted student achievement above and beyond the individual effects of these characteristics. We examined the effects of a number of compositional variables, including the mean SES, the percent of minority students in the school, the mean academic background (grades), and the percent of students who planned to attend four-year colleges. Of course, many of these variables correlate with each other. For example, the racial composition of schools correlates highly with school poverty—students in highly segregated schools are also much more likely to be in a predominantly poor school (figure 6.4).

Yet in our analysis, we found only one compositional variable—the average SES of the student body—that significantly affected student achievement. That is, both students’ individual SES and the average SES of their schools contributed to achievement growth or learning during high school. One way to illustrate the relative importance of these two factors is by computing the change in achievement growth associated with a change in student and school SES, where the changes are expressed in standard deviations of each respective variable, referred to as effect sizes. One of the benefits of using effect size is that it allows comparisons between different sets of data and different studies through the use of a common metric.

The results show that effect sizes for school SES were larger than the effect sizes for student SES in both southern and nonsouthern schools (figure 6.4). For ex-
ample, outside of the South, students from families with a 1 standard deviation higher value of SES had average achievement growth rates that were .12 of a standard deviation higher; net of other student factors that also predicted achievement growth rates. That is, the effect size of student SES was .12. In contrast, students attending high schools with a 1 standard deviation higher value of school SES had achievement growth rates that were .34 of a standard deviation higher, an effect size of .34. In the South, the effect size of student SES was .12, almost the same effect as students in other regions of the country. In contrast, the effect size of school SES was .26, about one-third more than the effect size of individual SES.

Although no clear standard exists for how to interpret these values, some scholars have suggested that effect sizes as small as .2 can be considered substantial and meaningful for large populations.44 Another way to view the magnitude of these effects is to contrast them with what many people consider to be a highly successful school reform program—the Tennessee class-size reduction experiment—that produced four-year effect sizes of .35.45 In other words, students who attended more affluent schools in the South—those with a 1 standard deviation higher value of SES—improved their achievement growth rates as much as might be expected from almost three years of class-size reduction. Substantial benefits clearly arise from attending a high-SES school, especially for students in the South.

**Figure 6.4.** Correlation between Percentage Minority and Mean Socioeconomic Status of High Schools: South and Other Regions

Source: Analysis of school-level National Education Longitudinal Study data for schools in the South (N = 36) and schools in other regions (N = 488) (Rumberger and Palardy, Technical Appendix, table 6).

**Figure 6.5.** Effect Size of Individual and School Socioeconomic Status on Achievement Growth, South and Other Regions

Note: Effect size represents the effect of a 1 standard deviation change in the predictor variables on a 1 standard deviation change in achievement growth at the student level. Effect sizes are computed from parameter estimates based on an HLM model that controls for other student background characteristics (Rumberger and Palardy, Technical Appendix, table 3). All values are statistically significant at α = .05 level.

**Why Does Segregation Matter?**

But why does the SES of a school’s student body matter? To address this question, we estimated a series of statistical models that introduced a comprehensive series of variables that measured three types of school characteristics: (1) structural features—such as location, size, and control (public/private); (2) school resources—such as student/teacher ratio and credentialized teachers; and (3) school processes—such as academic climate, school safety, and teaching quality.46 This analysis sought to determine whether any of these school characteristics would render the estimated effect of school SES insignificant. If they did, the results would suggest that school SES indirectly impacted student achievement through association with other school characteristics that could possibly be altered through school reform policies. If they did not, then the results would suggest that the
characteristics of the student body itself were responsible for the estimated effects of school SES and that the only way to alter such results would be through desegregation policies.

We first examined the impact of structural characteristics. The results of this analysis revealed that several structural features of schools were significant predictors of achievement growth. In the South, these characteristics greatly reduced the effect size of school SES from an initial value of 0.14 (Figure 6.4) to a level of 0.07 (Figure 6.6), rendering it insignificant. In other words, the effects of school SES in the South resulted largely from its association with several structural features of schools—rural (versus urban or suburban), private (versus Catholic, comprehensive public, or public magnet), and school size greater than 1,500 students. The results differed significantly in other parts of the United States. After introducing the same set of structural variables, the effect size of school SES actually increased from an initial value of 0.14 (Figure 6.4) to a level of 0.21 (Figure 6.6), and remained statistically significant. Nonetheless, some structural characteristics of schools remained significant predictors of student learning. Some—such as private control and school size—had similar effects on student learning both in the South and in the rest of the United States. Student achievement was generally higher in larger schools than in smaller schools (600-1,200 students), which previous research has suggested are more effective. However, the most effective size varied by region. In the South, schools with more than 1,800 pupils had higher achievement growth, while outside the South schools with 1,200-1,800 students had higher achievement growth.

Other structural features had very different effects in the South and in other regions of the United States. Controlling for school SES, students attending rural schools in the South had significantly lower achievement growth than students attending suburban or urban schools, whereas students attending rural schools outside the South had higher achievement growth. Rural schools in the South enrolled a higher percentage of poor and minority students than do other rural schools (as well as rural schools in other regions), but these differences alone do not explain why such southern schools have levels of student learning that are so much lower. Research suggests that southern rural schools have difficulty attracting and retaining good teachers because of low salaries and poor working conditions. This is one reason that rural schools in the South may have such low achievement growth.

Outside of the South, students attending magnet schools had significantly higher achievement growth than students attending public, comprehensive schools. But in the South, students attending magnet schools enjoyed no such educational advantage. Why this is the case remains unclear. The results suggest, however, that magnet schools are an ineffective mechanism for improving student achievement in the South. One recent study also suggests that magnet schools, many of which were created as part of voluntary desegregation efforts, may also increase white flight while failing to introduce any more interracial exposure than do voluntary desegregation plans.

Next we examined the effects of resource variables, including the student-teacher ratio and the proportion of teachers with advanced degrees. After controlling for student background characteristics, school SES, and school structural characteristics, we did not find any resource variables that significantly predicted achievement growth in either the South or the rest of the United States.

Finally, we examined the impact of process variables that reflect the programs, policies, and overall school environment. This analysis revealed that several of these factors predicted student learning above and beyond the factors discussed earlier (Figure 6.7). And as we found previously, the effects of these predictors generally differed in southern and nonsouthern schools.
Both within and outside the South, teacher quality mattered, but not in the same way. Outside the South, schools in which students rated the quality of teaching higher enjoyed higher achievement growth, controlling for other school characteristics, while in the South the opposite was true. On the face of it, this finding seems puzzling. Why would the same measures of teaching quality have opposite effects? One explanation may be that teachers in some southern schools may treat the students well—generating positive ratings from students—but not be as effective at raising student achievement. This process of demanding less academic work in exchange for cooperative behavior has been documented in other studies. We investigated this issue with our data and found that minority enrollment was positively related to students’ rating of teaching quality after controlling for teacher expectations that all students could learn. This suggests that at the same level of teacher expectations, students in high minority schools rate the quality of teaching higher than do students in low minority schools even though the higher teacher quality does not translate into improved academic performance, at least in southern high schools.

In the South, both the quality of teaching reported by students and teachers’ expectations that all students could learn significantly affected student learning, even after controlling for the previously identified set of structural variables and school SES. The average amount of homework that students reported and the average number of advanced courses also served as significant predictors of student learning in southern high schools. Yet even after controlling for these other school characteristics, students attending rural schools in the South still had significantly lower achievement growth than students in suburban or urban schools. Interestingly, after controlling for both structural and process variables, school SES became a negative predictor of student learning.

Outside of the South, a different story emerged. Some of the measures of teacher quality or academic environment were significant predictors of student learning in high school except for teaching quality, which actually had a small yet statistically positive effect on student learning. As a result, all the structural variables that were significant in the previous model remained statistically significant in this model.

A final issue that we investigated is whether the compositional effects vary among types of students. In other words, did the effects of school SES help or hinder the achievement growth of some students but not others? To address this question, we reestimated the student model to determine whether the effects of SES or minority status varied significantly among schools in each sample. We found that the effects of only one predictor, Hispanic, varied significantly among schools in both the South and in other regions of the country. Even though Hispanics have significantly lower initial achievement levels than whites, Hispanic achievement growth, on average, does not differ from that of whites after controlling for other individual characteristics. But the achievement gap in growth rates between whites and Hispanics does vary among schools. We then investigated whether student composition variables could explain these differences. In the southern sample, school SES did predict the size of the white-Hispanic achievement gap, but in the non-South sample SES did not do so. In the southern sample, the gap in achievement growth between whites and Hispanics was higher in high-SES high schools than in low-SES high schools. So even though, as reported earlier, high SES high schools were higher achievement growth overall, Hispanic students in southern high schools did not benefit from the compositional effect. This finding could result from increased within-school segregation.
in higher-SES schools where Hispanics may be tracked into lower-level classes that compromise that achievement; although it is not clear why this would occur for Hispanics and not blacks.

What Can Be Done about Segregation?

The results of this study confirm a widely held belief of many parents—whether your children go to school matters. Students who attend high schools with students from higher-class backgrounds learn more than students who attend high schools with students from lower-class backgrounds. In other words, while students' social class background relates to their achievements, so too does the social class background of their peers. These results appeared in both southern and nonsouthern schools, although the effects of social composition were higher in southern than in nonsouthern schools. The results of this study confirm those from earlier studies as well as the original conclusions of the Coleman Report.

But unlike earlier studies, this study also attempted to discover why socioeconomic segregation matters. The study explored three possible causal mechanisms—school structure, school resources, and school processes (policies and practices). These mechanisms, except for school control (Catholic, private, and location (urban, suburban, rural), can be manipulated through policies without attempting to alter the existing socioeconomic segregation of America's schools.

In southern high schools, structural characteristics of schools accounted for almost all of the effects of socioeconomic composition. That is, after controlling for differences in school structure, socioeconomic composition had little direct impact on student learning. This suggests that in the South, when (location, size, and type of school), children go to school matters because that determines with whom they go to school. Outside of the South, structural variables also predicted student learning, but unlike the South, these variables did not mediate the effects of school SES. This suggests that outside the South, with whom children go to school rather than where they go to school matters. School process factors such as teacher quality—can affected student achievement but did so differently in southern and nonsouthern schools.

The fact that this study found regional differences in the features of schools that predicted student learning has important implications beyond the present study. It suggests that basing school reform policies on research findings conducted on national samples of students and schools or on samples from other regions of the country may not be appropriate for the South. It also suggests the need to conduct more localized studies on school effectiveness.

Notes

We acknowledge the helpful comments of Jack Boger, Chris Edley, and Gary Orfield in reviewing this chapter.

3. Ibid.
4. Ibid.
5. Ibid., figs. 6, 7.
9. Coleman et al., Equality of Educational Opportunity,
10. Ibid., 29.
11. For a recent review of this evidence, see Kahlenberg, All Together Now.
12. For two recent reviews of this literature, see Wells and Carris, "Perpetuation Theory"; Schieffel, "Review".
14. Bryk and Driscoll, High School at Community.
17. Garnier, "Student Achievement."
18. Clubb and Mead, Politics, Markets, and America's Schools. For a detailed critique of the methodology used in this study, see Bryk and Lee, "Is Politics the Problem?"
19. Garnier, "Student Achievement."
21. Goldhaber and Hennes, "Why Don't Schools and Teachers Seem to Matter?"
22. Rumberger and Palardy, "Does Segregation Still Matter?"
24. Ibid.
25. Kahlesberg, All Together Now.
27. Raudenbush, Finn, and Cherng, "Inequality of Access.
28. Lucas, Finding Inequality, MickeIlson, this volume; Michelson, "Subverting Swann.
30. Wells, "Resimizing Social Science Research;" Wells and Corwin, "Perpetuation Theory.
31. Ma and Kirkender, this volume.
32. A complete description of the data, variables, statistical models, and results of analysis from this study is provided in a technical appendix, which is available at: http://education.indiana.edu/erikrumberger/.
33. National Center, Naton's Report Card, fig. 2-2.
34. Southern Regional Education Board, ACT and SAT Scores in the South, 15.
35. A difference of .5 points represents about 10 percent of the average growth rate of 28 points for the national sample, which translates into about 6.8 months of the 36 months students attend high school. 8.6 months is about three-quarters of a nine-month school year. The estimates assume that students do not learn treated material over the summer.
36. U.S. Bureau of the Census, Money Income, table A.
37. A standard deviation is a common measure of variability in the distribution of social phenomena (L. Cohen, Statistical Power Analysis). Many educational outcomes, including SES are normally distributed in a so-called bell curve. A difference of .25 of standard deviation means that 15 percent of students outside the South had an SES level that exceeded 25 percent of the students in the South.
39. Ibid., table 3.
40. Ibid., table 1. This is in the range first documented by Coleman et al. in their landmark 1966 study of school effectiveness, Equality of Educational Opportunity. A recent international study of student achievement by the Organization for Economic Co-operation and Development (OECD) found that, on average, differences between schools accounted for 26 percent of the average between student variation in reading literacy of fifteenth-year-olds among the twenty-six countries that participated in the study, including 35 percent for the United States (Knowledge and Skills, 61).
40. J. Cohen, Statistical Power Analysis. For example, an effect size of 3.5 represents half of a standard deviation increase in achievement. If achievement is normally distributed, this is equivalent to a person moving from the middle of the distribution, or a point where he or she scores higher than 50 percent of the population, to a point where he or she scores higher than 69 percent of the population.
41. The OECD study found that in most OECD countries, the effects of school SES out-