

## Context Matters

Some towns, regions, and countries seem to have better education than others. The students in those schools do better on tests, are more likely to finish high school, and are more likely to seek higher education. We know that these outcomes are not just the result of better teachers and better administered schools, or even more money for supplies and extra programs. The students who go to better schools usually have families who are more highly educated and are hooked into networks that both reinforce the notion that doing well in school is important *and* know the best strategies for succeeding at school.

There is another reason for young people doing better in school that might be just as important as high-quality school personnel, supportive families, and family networks. Some communities, regions, and even countries have created environments and networks that—beyond families—help young people *want* to be academically successful and facilitate strategies that encourage them to achieve success.

This book is about education in one country—Cuba—where even elementary school pupils from rural areas seem to learn more than pupils from middle-class urban families in the rest of Latin America. This achievement is all the more remarkable because Cuba is fairly poor in natural resources and has low levels of material consumption. Yet Cuba has school and social support systems that help a very large percentage of pupils reach high levels of academic achievement.

The reasons for Cuba's academic success that emerge from this study will please some educators but displease others. The reasons certainly conflict with political philosophies stressing individual freedom and decentralized pluralistic democracy. Many of the reasons revolve around a social context of schools that is highly supportive of academic achievement. Most educators, no matter what their political philosophy, realize how important that kind of environment is for a good educational system or school. But Cuba creates this social context mainly through a hierarchical centralized government bureaucracy, not through individual families acting alone or collectively at a local level by attending school board meetings or church services. Indeed, while Cuban classrooms stress a child-centered approach to learning, the Cuban state strictly enforces the implementation of curriculum and these child-centered teaching methods through a chain of command that begins with the minister of education and ends with directors and assistant directors of schools supervising teachers in their classrooms and teachers feeling competent and responsible to deliver a well-defined national curriculum.

The Cuban experience raises important questions for education in all countries, including highly developed ones such as the United States. How responsible should governments be for creating environments that help children focus on academic achievement? How much autonomy should teachers and schools have over what goes on in classrooms? Is there a trade-off between the value that market societies place on individual choice and on the value they place on ensuring that all children—regardless of socioeconomic background—receive high-quality schooling?

### *Caring about Academic Achievement*

Fifty years ago in America, getting good grades in school and scoring high on tests was important but not critical to life chances. Almost everyone who

had a “good” job was a white male, so competition for those jobs was not nearly as stiff as it is today. There was also a lot of well-paying manufacturing work around. High school (male, mainly white) graduates and even some dropouts had access to that kind of work, and they earned nearly as much as people who were college trained.

Intellectuals were certainly concerned about the quality of schooling, but they situated academic achievement and attainment, particularly for the poor, in the larger issues of poverty and discrimination. We knew that suburban children went to good schools because their families paid higher property taxes, and we knew that black children in the South went to schools that were segregated, terribly underfunded, and probably not very likely places to pick up advanced mathematics. Thanks to *Blackboard Jungle*, a Glenn Ford-Sidney Poitier film of the 1950s, we also knew that inner-city high schools were rough places, attended by gangs who cared little about anything academic. Everything we thought about education suggested that the main problem was outside the school—the influences of a society in which the middle class could spend more than the less affluent on their children’s public education, where whites discriminated against blacks, and where poor city kids were subjected to what sociologists Richard Sennett and Jonathan Cobb called the “hidden injuries of class,” resulting in anti-academic, anti-school behavior among urban youth (Sennett and Cobb, 1973).

This view of education has changed. In the past generation, a great urgency has developed over students’ school success, and with it, an urgency both to blame the schools for society’s ills and to insist on improving how well schools teach pupils what they need to learn. The change results partly from schools’ success itself. In the United States and all over the world, a lot more young people are finishing high school and college than ever before. Many more are competing for professional jobs. Once women and minorities began getting hired in jobs previously reserved for white men, everyone became concerned about doing well in school to stay ahead of the game. The other change is that high-paying factory jobs, which did not require much schooling, have been replaced by service jobs (and factory jobs) that demand good reading and interpretation skills and a fairly high level of technical understanding. So increased competition for good incomes from more and more highly educated young people puts ever more emphasis on school success. In the old days, even if you were a high school dropout, you had a chance to get a job that paid a decent wage. Today, at least in the

developed countries—the United States, Canada, Europe, Australia, and Japan—simply finishing high school is likely to leave you near the bottom of the economic ladder.

In this environment, despite their success in getting a much higher fraction of students into college, schools as organizations are being increasingly blamed for not teaching children enough. Schools serving low-income pupils are getting the brunt of this criticism, but it is usually couched in more general terms as a condemnation of “bureaucratized” public education and of teachers’ unions, with these characterized as the main obstacles to better teaching and learning. Conservative academics and think tanks have done a lot to foster these ideas. They are convinced that schools could be much more “efficient” if they could hire and fire teachers at will, get rid of bureaucratic rules so that teachers and principals could innovate regularly, and replace “constructivist” teaching—teaching that tries to build learning on knowledge and experiences that pupils bring to class—with a focus on basic skills and teacher-driven problem solving—teaching that emphasizes learning a well-defined body of knowledge based on how a pre-set curriculum spells out the learning path.<sup>1</sup>

The claims that schools can do better at teaching children are not restricted to conservatives. Liberal educators are also convinced that schools can improve academic results. Liberals are not as likely to blame bureaucrats and teachers’ unions, but they do think that better teaching, smaller class size, better curricula, and more parent participation would increase student learning.

The urgency and the ideas about school improvement have spread to developing countries. In lower-income countries, it seems that there are just not enough good jobs to absorb young people coming out of primary and secondary schools. That does not prevent school systems from expanding. As they expand, the main complaint in most places is the same as in the United States and Europe: the quality of graduates is low, so schools need to raise the amount of learning that goes in every academic year, whether it is in the first few grades, in high school, or at the university. The mantra is that smarter graduates will make the country more competitive and increase economic growth.

The focus on educational “quality” and student performance in school has been fueled by international tests comparing how well young people in

different countries perform in math, reading, and science. Countries pay attention to the results, although it is not clear what they can do about them. When Finland scored very high in reading in a recent international test, everyone rushed there to figure out what made Finns such great readers. Finns themselves were not at all sure what made them so successful. One outcome of this puzzlement is that there are as many suggestions for increasing student learning as there are educational analysts, socially involved business executives, and politicians. Reduce class size, improve teacher subject knowledge, stress basic skills, make the curriculum more child centered, get parents more involved, privatize education, eliminate teachers' unions—these are the most common recommendations, but there are many more.

There is little doubt that some schools, communities, and nations do better than others at helping students from similar family backgrounds learn language, mathematics, science, and other subjects considered important. But why is that so? And how important are the differences that can be attributed to the way schools do things compared to differences that are embedded in the social life of communities, regions, and even nations? In developing countries, the answers to these questions may be more obvious because schools differ considerably in the resources they bring to the task at hand. Yet why, for example, do the top 10 percent of students in many developing countries score just at the average of developed countries? Is this a school problem or one with deeper roots?

No matter how sure the many experts are of their ideas, the answers to these questions are not as obvious as we once thought. It is certainly true that thanks to forty years of research and better data, analysts are gaining a clearer understanding of educational productivity—that is, of the key elements driving student performance. But there are still important gaps in our knowledge, and a great deal of controversy exists over what explains and does not explain these differences. Part of the problem is that most research focuses either on the forest or on a single tree, but never brings the two together. One type of research analyzes big data sets gathered in various countries, and another type of research looks only at a single variable or intervention in a few schools, a single community, or a single country.

In this study, we decided to approach the issue in a new way. First, we focus on developing countries, where the answers may be clearer because the variation in educational quality and social conditions is greater. We carried

out a comparative analysis of primary schooling in Latin America, focusing on three countries with quite different economic and social conditions and different systemwide management approaches to educational delivery. The three countries are Brazil, Chile, and Cuba, and in all three, third- and fourth-grade children were tested in 1997 in a UNESCO study covering thirteen Latin American countries. The test results, showing that Cuban children scored much higher in math and language than pupils in other Latin American countries, form the backdrop for our analysis.

We went to each of these countries; interviewed officials in the ministries of education in the central government and at the provincial, state, and municipal levels; interviewed teachers, principals, students, and parents; and then filmed math lessons in classrooms. We learned what makes these school systems work the way they do.

Our study is not only comparative. It also uses several different levels of analysis across countries to gain progressively greater understanding of why students seem to learn more in some situations than others. Other researchers have done multiple-level analyses in one country,<sup>2</sup> but as far as we know, our study is unique in using macro (the forest) and micro (the trees) methods of understanding student learning in different educational *systems*.<sup>3</sup>

Our first level of analysis is of the overall impact of family, schooling inputs, and “community” social context differences on student performance in a number of Latin American countries, including our focus group of countries: Brazil, Chile, and Cuba. The second level of analysis is of school system organization in the three focus countries and its links “up” the organizational chain to community social context and “down” the organizational chain to classroom teaching and learning. The third level of analysis is of third-grade mathematics classroom lessons within and across the three countries. This last is the most “micro” of the three levels we use.

### *Some Background to Our Study*

Almost forty years ago, the sociologist James Coleman (Coleman et al., 1966) argued that in the United States, children’s home environment was largely responsible for differences in students’ academic achievement. Coleman’s was the first attempt to explain empirically variation in student

achievement among individuals and schools. He also claimed that students' belief that what happens to them is due at least partly to their own efforts, and peer effects, as measured by the social class and racial composition of the school, were important in explaining the persistent gap in achievement between disadvantaged minorities and whites. Skilled or inept school administrators and teachers played a less crucial role (see Jencks and Phillips, 1998, for an update in this controversy).

Others have reassessed and reformulated Coleman's finding that children's family background dominates school outcomes. Economists Samuel Bowles and Henry Levin (Bowles and Levin, 1968) showed that Coleman's estimates could not statistically separate socioeconomic background and school characteristics. The two sets of explanatory variables were too highly correlated to separate their effects. They did not argue that Coleman was wrong in claiming that family background had a major influence on how well children did in school. They just pointed out that his empirical estimates could not *prove* that schooling differences had only a small effect. Because lower-socioeconomic-class children went to schools that also had, on average, fewer and lower-quality resources, explaining academic performance by school differences would give a result similar to the one gained from explaining it by family differences.

French sociologists Pierre Bourdieu and Claude Passeron took this discussion one step further. They claimed that the knowledge children are expected to learn in school is structured to favor particular behavior patterns (including academically oriented activities) and speech modes learned at home—patterns and modes that are much more highly developed in upper-middle-class families. Thus, it might seem that schools try to teach everyone a neutral kind of knowledge, but it turns out that what schools demand from pupils allows schooling to reproduce the class structure from generation to generation (Bourdieu and Passeron, 1977). Bourdieu and Passeron used the term *cultural capital* for the knowledge, behavior, and tastes that families brought to the educational table. They meant that schools were in the business of reproducing a particular culture, especially the way the elites used language, organized their lives, and interacted with each other. For Bourdieu and Passeron, then, the explanation of achievement differences lay in the way schooling *purposefully interacted* with children's education at home, assuring that the values, behavior, interaction with adults, and

response to school activities learned in certain home environments were especially favored and reinforced by schools. Any child who did not get the “right” education at home would be unlikely to succeed at school.

However, it is difficult for those interested in education’s potential for improving social mobility to accept such a social class–driven analysis of student achievement, especially the idea that schools are organized around skills that pupils with the “wrong” family support systems will find *inherently* difficult to learn. Sufficient exceptions exist to the rule that social class determines outcomes to suggest that better schooling could increase student performance, particularly among the disadvantaged. Knowing that the school is organized around norms of knowledge, language use, and adult-child interaction typical of an upper-middle-class home environment does not tell us why so many lower-middle-class and even lower-class children have succeeded in school, and whether many more could thrive academically under the right circumstances. To answer that puzzle, we need to know why children from a lower social class background or from a disadvantaged minority group do better in some school or classroom environments than in others.

Social scientists have sought the answer to this question in educational “production functions” of the Coleman type. An educational production function models and tries to measure the relationships between students’ social class background, school inputs—including teacher characteristics—and student outcomes. Estimating these input-output models, social scientists have tested whether class size, teacher education, and teacher experience make a significant difference in pupils’ performance. They have analyzed whether higher spending per pupil produces higher student achievement. And they have estimated the effects on pupil achievement of longer school days, of a longer school year, of summer school, of automatic promotion versus retention, and a host of other educational interventions.

As the databases have become more sophisticated (follow-up surveys of student cohorts, random assignment of students to treatment and control groups), production function analyses have been able to measure more accurately the effects of various policy variables on student outcomes. Literally hundreds of studies have been carried out since the mid-1960s. Economist Eric Hanushek reviewed existing U.S. studies as of the mid-1980s (Hanushek, 1986), but many of the analyses of longitudinal data were done later. In addition, there have been production function studies in Latin



America and in other developing countries (see Carnoy, Sack, and Thias, 1977; Harbison and Hanushek, 1992; and Lockheed and Verspoor, 1991, for references).

Effective schools analysis has been another approach to the same problem. In effective schools analysis, researchers study schools that produce unusually good results—meaning that students of a given socioeconomic background perform much better on tests than production function analysis would predict—and compare them with similar schools whose students are low performing. By studying the characteristics of these schools, the argument goes, we can identify the variables that make students perform better than expected. A typical variable identified in effective schools studies is “leadership” or “instructional leadership,” meaning that the principal or a group of teachers make improving instruction the total focus of the school’s activities. Another variable usually associated with good student performance is school “cohesion.” Cohesion suggests that the school personnel organize themselves as a collective to achieve instructional goals. The opposite of cohesion is “atomization,” where teachers pursue goals individually without a common project or school focus (Abelman and Elmore, 1999). Another way of expressing this cohesive characteristic of effective schools is that they are marked by a positive sociopsychological climate. In such a climate, teachers have high expectations; they have a strong sense of belonging to a team; and teachers, parents, and administrators work in harmony (Brookover, 1979; Levinson, 2001; Rutter et al., 1979). Of course, the school focus, or cohesion, may not be around instruction but around some other activity, such as the football or basketball team. This would not necessarily improve academic achievement.

Effective school analysis begins to tell us what to look for that makes schools better places for student learning. But the studies do not tell us how much each of these variables contributes to improving achievement. Often, effective schools analysis is based on a methodological flaw. Unless the research includes a systematic comparison of schools in which students achieve above the predicted norm with schools that perform below the predicted norm, we observe only winners without comparing them to losers. It may be that losers have many of the same traits we identify as contributing to higher achievement, but in the loser schools, they don’t contribute.

Besides the studies of student achievement within countries using national data, the steady increase in international test data beginning in the

1980s and accelerating in the 1990s has produced many more *within* country studies trying to explain student achievement, and a new kind of empirical research: comparisons *across* countries (for example, Baker, Riordan, and Schaub, 1995; Heyneman and Loxley, 1982). This comparative approach also spread to effective school studies, which were carried out widely in developing countries (see Lockheed and Levin, 1993, for example).

All these production function and effective school studies were reasonably well formulated theoretically and yielded interesting results but surprisingly few insights into school improvement strategies. For example, one important conclusion of earlier estimates in developing countries was that textbook availability was a high-yield investment. This was a logical result with major policy implications (Lockheed and Verspoor, 1991). Yet, many of the conclusions of such studies were incorrect. Researchers did not understand the limits of an analysis in which student achievement is not measured in gain scores, and researchers do not adjust for selection bias. For example, World Bank researchers concluded that class size does not affect student academic performance for a wide range of students per teacher, approximately twenty to forty-five students (Lockheed and Verspoor, 1991). Later work using data from Tennessee, where students were randomly assigned to normal and small classes and followed over time, showed significant class-size effects (Krueger, 1999).

In our visits to schools in Latin America, we found that schools regarded as “better schools” by students’ families were characterized by larger class sizes because they generally filled their classes to the legal limit, whereas “worse schools” had many vacancies and smaller classes. If researchers measured student performance across different schools in that situation, they would likely find that students in classes with more students per teacher were performing as well as or better than students in classes with fewer students. They might conclude that class size made no difference. The flaw is that the students in the larger classes selected themselves into those classes because they wanted to be with other “smart” students. This self-selection confounds the relationship we are interested in, namely, the number of students in the class. Thus, selection bias—students with more motivated families tend to be in larger classes because more motivated families crowd “good” schools—underestimates the true (positive) effect of class size on student performance.

Most of the international production function studies in the 1980s (many done by the World Bank) de-emphasized teacher quality and class size as important factors in explaining variation in student achievement. They concluded that nonsalary resources, such as availability of textbooks, were key. When Coleman and his colleagues published their results from the *High School and Beyond* longitudinal data in the United States showing that Catholic school students scored significantly higher than public school students of similar socioeconomic background (Coleman and Hoffer, 1987; Coleman, Hoffer, and Kilgore 1982), international studies also began to emphasize macro-organizational factors such as private management and school autonomy.

Yet few, if any, of these studies picked up on the social context approach stressed by Bryk, Lee, and Holland (1993) and Coleman himself (Coleman, 1988, 1990). Coleman developed the notion of family and community social capital, which, like all capital, is a source of output of goods and services. Unlike other kinds of capital, which is tangible and benefits primarily its owner, social capital is embedded in *relationships among individuals or among institutions* and benefits all individuals or institutions involved in those relationships by making their work more productive. For example, if a family is particularly cohesive and supportive, and has high expectations for each of its members, that type of family structure can be defined as social capital. If a family or individuals or company employees have well-developed networks, these, too, can be defined as social capital. Family and community cohesiveness, supportiveness, and networking help students that are part of these families and communities to learn more in school and to have higher expectations for themselves, even if they are not contributing very much to the positive relations that benefit them.

Coleman saw Catholic schools as meshing into these networks in ways that public schools do not. He and Bryk, Lee, and Holland argued that the sense of “community” provided in Catholic schools probably explains why inner-city Catholic secondary schools might be more productive academically than inner-city public schools. Such community, they posited, contributes in a major way to learning by stimulating a positive structure in social environments that lacked it. Even though the Catholic school advantage for low-income students is controversial (for a summary, see Benveniste, Carnoy, and Rothstein, 2002), the argument that a sense of a learning-oriented

community is important for students' academic achievement has to be taken seriously, and it can be applied on a larger scale.

Coleman's notion of social capital contrasts sharply with Bourdieu and Passeron's idea of cultural capital. Bourdieu and Passeron saw schools as the instrument of a social class. Schools reproduce a social structure controlled by intellectual and bureaucratic elites by reinforcing those elites' cultural capital. Coleman saw social capital as independent of class—families of any social class can accumulate social capital by building networks and putting more effort into their children's education. Institutions such as Catholic schools can also develop social capital by creating community. Coleman does not define social capital in terms of social class but rather in terms of individual, conscious accumulation—a liberal notion of capital, subject to policy intervention, equalization, and all the other possibilities in a society defined as fluid and open to social change. Although we do not agree that social capital is easily acquired, we shall work with Coleman's notion and extend it to include actions by the state. In a sense, just as Coleman turned Bourdieu and Passeron's concept of cultural capital on its head by converting it into an acquirable asset, we will try to re-turn Coleman's notion on *its* head: we suggest that states can generate just as potent a form of social capital in promoting educational achievement as families can, and that state-generated social capital is essential to improving educational achievement for low-income groups—those that have the least cultural capital and the most difficulty in acquiring and accumulating social capital on their own.

The most recent trend in the United States is to build on the school organizational factors literature and to emphasize ways that schooling does impact student achievement, even if this represents only a small portion of total variation in student performance. The quality of teaching has come up as a key variable in these studies, although researchers have not been successful in identifying what it is about “good” teachers that increases student achievement (Bryk and Schneider 2002; Rivkin, Hanushek, and Kain, 2005). In the latest round of international testing and data analysis, attention has turned to curriculum differences among countries (Schmidt et al., 2001), which raises further questions about the capacity of teachers to teach more demanding curricula—questions that we explore further in this study.

This brings us to the present and what we know now about improving schools. We know that student achievement varies greatly among individuals, classrooms, schools, and, somewhat less, among countries. We know

that children's experiences in their families, particularly the interaction they have with parents and siblings, have important effects on their academic performance in school. We know that their experiences in school with particular teachers and peers can also influence their achievement gains. Finally, international testing suggests that social and educational conditions in different countries make a difference, yet the challenge continues to be understanding why children in some classrooms, schools, and countries seem to be learning more during each year of school than children in other situations.

We take on this challenge by studying all these levels—individual, classroom, school, and country. We study countries in Latin America, where major differences exist in student achievement on an international test and where major differences exist in the way educational systems are organized. As a first step, we employ a Coleman-type standard production function analysis to estimate input-output relations within each country, but we add a new dimension to this analysis. We define a set of social context variables that differentiate schools' social context within each country and compare differences across countries. We situate this notion of social context in a larger concept of what analysts such as Coleman called *social capital*—the capital created by human actions that creates benefits to others, not just to the person initiating the action. We argue that families and collectivities, such as communities and national governments, create social capital and that this social capital can greatly influence the amount of learning that takes place in schools. This new dimension turns out to be an important explainer of student achievement within and between countries.

We focus on three of the countries—Brazil, Chile, and Cuba—and, based on interviews with teachers and administrators in each country and visits to a large number of schools and several teacher-training institutions, we learn how these three national educational systems operate.

We analyze more than thirty third-grade math lesson videotapes we made in the three countries. This analysis of classroom teaching and content is extremely useful in explaining how national education goals end up being operationalized in the classroom, and to what degree this operationalizing reflects school system organization and how it may impact student learning.

These three levels of the study represent a new approach to understanding the school system as an institution—an approach that is necessarily

international and comparative because it attempts to observe systemic institutional differences reflecting different national social environments.

### *Modeling Student Learning*

Student learning is a complex process. We all know that an inspirational teacher can make learning almost anything interesting and fun. But even inspirational teachers cannot reach everyone, and certainly not everyone equally. Other, subtle factors influence students' ability and motivation to learn material that is not particularly interesting from teachers who are not, on average, particularly inspirational. As we have spelled out, social scientists model this process by trying to account for the many factors that can have a significant influence on how much students learn in school. Researchers try to design their models using data from surveys of students, their parents, their teachers, and the principals of their schools.

Most studies of student learning in school are based on data collected in one country or one state or even a single community. The main units of analysis are individual students, their classrooms, and their schools. Social context plays a role in some models, either by defining peer effects in the classroom and school (for example, Betts, Zau, and Rice, 2003), neighborhood effects (Jencks and Mayer, 1990), or group effects (student race/ethnicity) that are rooted in a theory of cultural differences specific to a particular society (see, for example, Ogbu, 1978; Ogbu and Gibson, 1991).

Our model—like most—starts with the premise that a student's family life influences his or her capacity to learn. James Coleman's notion was that families influence their children's learning through human capital (the amount of education parents have) *and* social capital (the amount of effort that parents put into their children's schooling) and that there are also family social capital influences from parents' interactions with neighbors and the community at large (through churchgoing, for example).

The model takes the possible influence of social capital a step further: We extend the notion of social capital to national government policies affecting children's broader social environment—what we call *state-generated social capital*. Thus, there are national social capital or “neighborhood” effects that include state interventions in children's welfare and a national

focus on education that can raise educational expectations for all children, particularly the educationally disadvantaged. Governments can therefore generate a cohesive and supportive educational environment on a regional or national scale that creates learning benefits for all students.

Like other studies that focus on the social environment outside schools—whether in family or community—ours considers that social environment is important in shaping what schools and teachers do. There is a structural aspect to social context, in the sense that social and political institutions are powerful shapers of individual behavior and the way that individuals approach institutions, including schools.

Yet we also think that within social-structural contexts, there is considerable leeway to make organizational choices—indeed, choices are made all the time in implementing educational reforms—and these choices can have an important effect on student learning. The results of the academic achievement game are not totally fixed by students' out-of-school conditions. Thus, we still continue to search for answers to the puzzle of student learning by examining what schools do that may have a positive impact on student achievement. One place to search is at the country level: why does one country's educational system teach children to read or do math better than another country's educational system?

In our model, state-generated social capital, as we call it, is crucial to the way the school system is organized (through state regulation or the absence of state regulation). It is also important to the quality of the curriculum, to the opportunity for students to learn various elements of the curriculum, and to the distribution of students by class, race, ethnicity, and gender in schools. Other factors also influence these school structure variables, including students' family background and how well teachers are trained to teach mathematics and language. These factors are influenced by social context and, in turn, influence classroom teaching and teacher expectations.

At the same time, learning can also be greatly influenced by what happens in particular schools and classrooms somewhat independent of social context. In every country—even those with social conditions that are not amenable to student learning—there are those inspiring teachers we mentioned earlier. Every country, including those in which the government does little to help children do well in school, also has some well-run schools attended by mostly low-income students. So student academic success can

take place in social contexts that would predict student failure, but such success stories are not usual, and they're not easy to find. The big question is whether effective classrooms and schools can be "scaled up" to make significant improvements in learning for the mass of students in a state or country even in a poor social environment.

Figure 1.1 represents a schematic of an education system. The end point, or outcome, of the flow chart is student learning, and all the other variously shaped boxes are factors that we expect to influence student outcomes. When the arrow points in one direction, it means that there is only a one-way relationship between factors—for example, human and social capital in the family affect children's student learning, but not vice versa. But human capital and social capital in the family both affect and are affected by state-generated social capital, including the amount of resource effort made by the public sector in financing public education. The arrow pointing in both directions represents that interaction between two factors. The center of the flow chart is the educational system, which is the institution we are par-

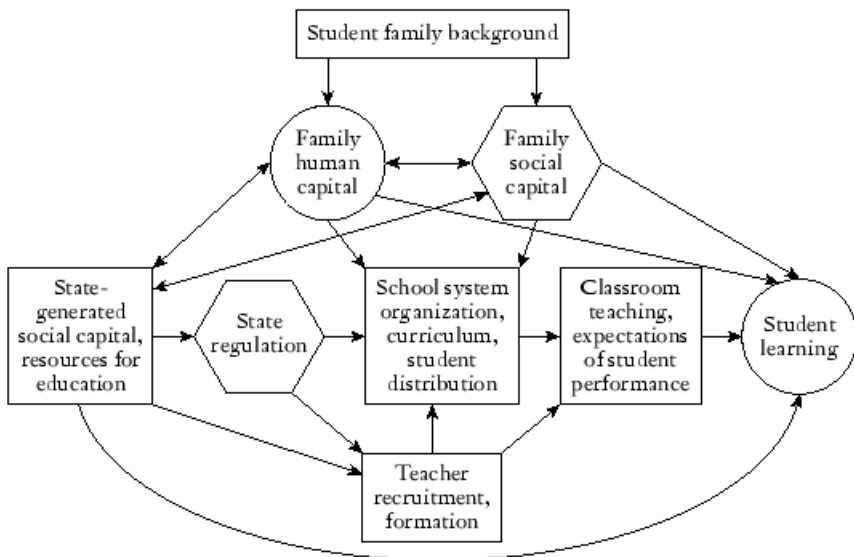


Figure 1.1 Proposed Relationships among Family Resources, Schooling, and Social Context



ticularly interested in. The educational system is represented in Figure 1.1 by two boxes, the organization of the school system and the educational process in the classroom.

Some of the relationships between factors influencing student outcomes are stronger than others, and the relationships vary from school system to school system and even among schools. For example, family background has a weaker relationship with school system organization and expectations of student performance in Cuba than in Brazil or Chile. State regulation is less connected to teacher recruitment and preparation in Brazil and Chile than in Cuba, and probably even less in Brazil than Chile because of more decentralized management of schools in Brazil. Our study is about understanding these differences and what factors seem to have the greatest influence on student learning.

The flow chart also serves as an outline in the chapters that follow for comparing Brazil's, Chile's, and Cuba's educational systems and the possible influences of family, societal organization, educational system organization, and classroom processes on student outcomes.

In the next chapter, we present a general overview of the social context of education in the three countries.

In Chapter 3, we make the case for the importance of the first box, state-generated social capital as expressed through state regulation—the favorable or unfavorable social context for educational achievement created by government social policies.

In Chapter 4, we estimate the relative strength of the relationship of state-driven social capital, school variables, and family background to student outcomes.

Chapter 5 compares educational system organization and teacher recruitment and formation in the three countries and their possible influence on classrooms.

In Chapter 6, we go into classrooms in Brazil, Chile, and Cuba to measure what happens there and how it might relate to school system organization and student outcomes.

Chapter 7 summarizes the lessons learned for educational improvement from our comparative analysis.