As a region, Latin America faces tremendous challenges, particularly those of development, poverty, and inequality. Education is widely recognized as one of the most critical means of defeating those challenges. Democratizing education—by improving both its coverage and its quality—is critical to overcoming the social and economic inequality that plagues Latin America. Ensuring that all children have the opportunity to learn critical skills at the primary and secondary level is paramount to overcoming skill barriers that perpetuate underdevelopment and poverty.

Although most people recognize the importance of improving the quality of education systems for reducing poverty and inequality and for increasing economic development, how to do so is less clear. A growing body of evidence supports the intuitive notion that teachers play a key role in what, how, and how much students learn (see, for example, Hanushek and others 2005; Park and Hannum 2001; Rivkin, Hanushek, and Kain 1998; Rockoff 2004; Sanders and Rivers 1996; Wright, Horn, and Sanders 1997). Attracting qualified individuals into the teaching profession, retaining those qualified teachers, providing them with the necessary skills and knowledge, and motivating them to work hard and to do the best job they can is arguably the key education challenge.

This book, *Incentives to Improve Teaching—Lessons from Latin America*, focuses on the effect of education reforms that alter teacher incentives to achieve teaching quality and to enhance student learning. The goals of our book are, first, to broaden and deepen our conception of how education reforms affect teachers in Latin America and, second, to shed light on how
reforms can be designed and implemented to maximize their beneficial effects on teaching and learning. We hope to demonstrate which teacher incentive reforms have been most successful at improving teaching and learning in the region, as well as to shed some light on the importance of how reforms are negotiated in the larger society, particularly by looking at the important role of teachers’ unions.

The reforms explored in this volume represent efforts by several countries in the region to increase teachers’ accountability and to introduce incentives to motivate teachers so they raise student learning. Some countries—such as Bolivia, Chile, and Mexico—have established salary differentials, thereby rewarding teachers for working in rural areas, or have introduced salary structures that reward teachers for improved performance and student learning. Brazil changed the resources available for education generally and for teacher salaries more specifically, as well as the mechanisms by which the resources are made available to municipality and state-level education systems. El Salvador, Honduras, and Nicaragua devolved their authority to communities, thus granting professional autonomy to schools and teachers in the belief that the increased accountability would lead to higher teaching quality and student outcomes.

Policy options to improve teaching quality can be grouped into three main clusters: (a) policies to improve teacher preparation and professional development, (b) policies that affect who becomes a teacher and how long he or she remains in the field, and (c) policies that affect the work that teachers do in the classroom. This volume focuses entirely on the second and third options, both of which can be understood as policies that create incentives to positively affect teachers and their work.

Teacher training and professional development have received attention in the past from educators, policymakers, researchers, and the international donor community. In contrast, the literature on policies that generate teacher incentives in Latin America is not very extensive. Although previous studies have addressed questions related to teaching quality and incentives in Latin America, ours is the first study that we are aware of in which researchers sought to learn about the effect of various policy reforms affecting teachers on teaching quality and student achievement in multiple Latin American countries.

Because teacher incentive reforms are frequently politically contested and are difficult to implement, many countries have shied away from changing their prevailing structures of teacher incentives. The selection

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1. For a review of the literature and assessment of current teacher preparation systems in Latin America, see Villegas-Reimers (1998); for a review of recent trends and innovations in teacher preparation programs in the region, see Navarro and Verdisco (2000).
2. See, for example, Navarro (2002) for various case studies that describe many aspects of teacher contracts and teacher characteristics in several Latin American countries.
of case studies in our volume was largely determined by the presence of a reform affecting the teaching profession. Our methodological approach entails using existing data and econometric techniques to shed light on the effect of such reforms on teaching quality and incentives. Our analyses have been limited by the quality of the data available, and we have used alternative econometric and statistical techniques in an attempt to overcome some of the shortcomings of existing data.

Why and How Do Incentives Matter?

A substantial amount of the literature on incentives in firms has emphasized that the interests of workers (teachers) and their employers (principals, education authorities, or school boards) are often not aligned. For example, although school administrators and education authorities may be interested in attracting more students to their schools, teachers may want to keep some difficult-to-teach students out of their classrooms. Compensation contracts may be designed to include incentives that will lead workers (teachers) to operate in the interest of the firms (schools). In the example above, school administrators could devise incentives (such as extra pay or promotion possibilities) so that teachers will keep all students in their classrooms.

Evidence suggests that changes in teacher incentive structures can affect who chooses to enter and remain in the teaching profession, as well as those teachers’ daily work in the classroom. For example, in the United States, where there is growing concern about the declining quality of teachers, recent research shows that the increase in labor market opportunities for women led to a decrease in the pool of qualified applicants for teaching positions. At the same time, research suggests that teacher salary scales in the United States are so compressed that the best teachers are likely to leave the profession for higher-salaried jobs in other occupations.

In less industrial countries, recent research indicates that teachers respond to incentives. For example, an evaluation of a randomized teacher incentives program in Kenya found that teachers increased their effort to raise student test scores by offering more test-preparation sessions (Glewwe, Ilias, and Kremer 2003). In this program, a financial bonus was

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3. For a review of the literature about providing incentives in firms, see Prendergast (1999).
4. Corcoran, Evans, and Schwab (2004) and Hoxby and Leigh (2004) present evidence that the quality of teachers in the United States has declined over time because of changing labor market opportunities.
5. Hoxby and Leigh (2004) present evidence that the decline in teacher quality in the United States is a result not only of increased opportunities for women outside of teaching, but also of the highly compressed structure that deals with teaching wages.
offered to teachers whose students achieved higher scores on a standardized examination. Although student test scores of teachers who were candidates for the bonus did increase in the year it was applied, the learning gains disappeared once the application of the financial bonus ended and teachers had no longer a chance of earning additional pay. More promising, a recent evaluation of a performance-based pay bonus for teachers in Israel concluded that the incentive led to increases in student achievement, primarily through changes in teaching methods, after-school teaching, and teachers’ increased responsiveness to students’ needs (Lavy 2004).

Because teachers respond to incentives, education policymakers can improve the quality of teaching and learning by designing effective incentives that will attract, retain, and motivate highly qualified teachers. But how teacher incentives are designed—and implemented—also matters. In various cases, teachers have been found to respond adversely to incentives by, for example, reducing collaboration among teachers themselves, excluding low-performing students from classes, cheating on or manipulating the indicator on which rewards are based, decreasing the academic rigor of classes, or “teaching to the test” to the detriment of other subjects and skills (see Cullen and Reback 2002; Figlio and Getzler 2002; Figlio and Winicki 2002; Jacob and Levitt 2003; Murnane and Cohen 1986).

**Incentives as a Broad and Complex Concept**

Many people think of teacher incentives exclusively as salary differentials and other monetary benefits. Indeed, differences in pay can act as an incentive to attract and retain qualified teachers or, conversely, can discourage qualified applicants and talented practitioners who are already in the profession. But many other kinds of incentives exist, both monetary and nonmonetary, including—among others—adequate school infrastructure and educational materials, the internal motivation to improve children’s lives, the opportunity to grow professionally, pensions and other nonsalary benefits, and job stability. Figure 1.1 displays many types of incentives that may exist for attracting highly qualified teachers and for motivating them to be effective in their jobs.

**Teacher Effectiveness and Student Performance**

Who is a good teacher? What makes a good teacher? Everyone who has been through school can remember a great teacher. People usually provide a variety of reasons for what makes that teacher great—from being "loving

6. We are grateful to Jeff Puryear, whose comments at the conference titled, “Learning to Teach in the Knowledge Society,” which was held in Seville, Spain, in June 2004, greatly informed this section.
and caring,” “knowledgeable,” or a “good communicator,” to being “tough” and “pushing me to work hard and expand my horizons.” These complex behaviors are not easily measured. In fact, measuring the factors that effective teachers have—or that ineffective teachers do not have—has proved imprecise, technically difficult, and expensive. This measurement problem creates one of the challenges for designing effective teacher incentives.

Ultimately, what society should care about is whether teachers are generating learning within their students. In other words, although having the teachers show affection for the student and command knowledge of the subject they are teaching are behaviors that are likely to stimulate students to learn, not all teachers who are affectionate or knowledgeable are also effective teachers.

In our study, we use a specific definition of a teacher’s effectiveness. We consider a teacher to be effective when there is evidence that his or her students have acquired adequate knowledge and skills. To measure the effectiveness of teachers, we rely primarily on available indicators of student learning from national assessments of subject-matter (usually language and mathematics) knowledge. Because student learning takes multiple forms and is difficult to measure, and because tests are an imperfect
measure of learning, we recognize that test scores are an incomplete and imperfect proxy for teaching quality. However, given the absence of a better understanding of what factors make a good teacher and given the paucity of systematic and comparable data on student learning, national assessments are our best option for shedding light on the quality of teaching and learning.

A Wide System Affecting Teaching and Learning

Although teacher incentive reforms are a promising option to improve teaching quality and student learning, they do not operate alone but instead are part of a broader system that affects teaching and learning. As a result, reforms to teacher incentives may be more effective in raising student learning when other parts of the broader system affecting teaching and learning are in place. For example, tying salary increases to teacher performance may be effective only in raising student achievement when teachers have clarity about what knowledge and pedagogical skills are needed to improve student learning. Similarly, the benefits of increased teacher accountability reforms are possible only when teachers know to whom they are accountable and when those individuals, in turn, have authority to reward and sanction teachers on the basis of their performance. In short, effective incentives are a necessary, but not sufficient, condition for ensuring teaching quality and student achievement.

Education Reforms, Teaching Quality, and Student Learning

Just as there are many types of teacher incentives, various education reforms may affect teachers even if not originally planned as teacher incentive reforms. Policy changes in the level or structure of compensation, as well as changes in teachers’ professional autonomy, can significantly affect the teaching profession. The chapters included in our volume approach the question of the effect of teacher incentive reforms on teaching quality and on student learning from various angles. Each chapter explores one or several aspects of a teacher incentive reform in Latin America and attempts to identify its effect on teaching quality and student learning.

Conducting impact evaluations of education programs is challenging given the impossibility of knowing what would have happened to those affected by the program if the program were not present. For example, to understand the effect of school attendance on labor market outcomes, we

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would need to compare two identical individuals at the same time in the same place, one who attended school and one who did not. Because this comparison is impossible in practice, a challenge for the impact evaluation is to construct groups of individuals who can be convincingly compared. In this sense, for evaluation purposes, all participants of education programs should ideally be selected in a randomized fashion. Although, in many cases, randomized assignment to participate in education programs is not possible, creative ways of analyzing good data about education programs can yield results that are of comparable quality to those from randomized trials. This approach is the one we took in the chapters of our volume.

**Review of Chapters**

The second chapter in our book, by Ilana Umansky, reviews the earlier literature about teacher incentives. Incentives, in general, and teacher incentives, in particular, have been the subject of much academic and policy debate. It is clear that “Incentives do matter, for better or for worse” (Prendergast 1999). That is, incentives have direct implications on teachers’ characteristics and behavior. However, it is much less clear how incentives work and under what conditions teachers create the types of changes desired. Similarly, it is intuitively clear that teaching quality affects student learning, but it is less evident what qualities make a good teacher or what precise behavior composes good teaching. Chapter 2 provides a review of the literature on incentives as they relate to teaching quality, characteristics, and behavior, as well as their relationships to student development and learning. It also presents the various arguments and findings on many of the types of incentives that teachers frequently face.

Because differences in salary between teachers and nonteachers can have a great effect on who chooses to enter the teaching profession, the third chapter, by Werner Hernani-Limarino, addresses the question of how well teachers are paid relative to comparable workers in other occupations. As in other parts of the world, people in Latin America have a widely held belief that teachers are not well paid and that, in general, teachers earn less than they would in other professions. Yet, previous research has found that, in many cases, teachers in Latin America may be paid more than workers with similar characteristics in many countries (see Liang 1999, for example). In his study of teachers’ salaries in 17 Latin American countries, Hernani-Limarino, however, demonstrates that relative salaries for teachers vary widely across Latin America and depend largely on to whom teachers are compared and what methods are used to make those comparisons.

He finds that teachers in Argentina, Chile, Colombia, El Salvador, Honduras, Panama, Paraguay, and Peru are, on average, paid more than
comparable workers in other occupations. Teachers in Nicaragua earn lower average wages than do workers in other fields. But in Bolivia, Brazil, Costa Rica, the Dominican Republic, Ecuador, Mexico, Uruguay, and Venezuela whether teachers are well paid varies depending on the comparison group used in the analysis. Hernani-Limarino develops several comparison groups but finds that when compared to workers in office, technical, and professional occupations—arguably the most appropriate comparison group because the workers tend to have similar educational levels as teachers—teachers do not have a pay advantage in any of those eight countries.

Chapter 3 also compares the structures of teachers’ salaries with those of workers’ salaries in other occupations. In the 17 Latin American countries examined, the teachers’ wage structure is flatter and begins at a higher level than the salary structure of nonteachers. Although teachers throughout the region receive higher base salaries than do comparable workers in other occupations, teachers receive lower returns than do nonteachers when we compare their improved characteristics, such as higher education or training plus additional years of experience. In practice, then, teachers earn comparatively higher salaries than they would outside of teaching when they are at the lower end of the wage distribution (that is, have less education and experience), while teachers with more education and experience earn the same or less than they would in other professions.8

Chapter 4, by Alejandra Mizala and Pilar Romaguera, explores the teachers’ salary structure in Chile and its related incentives. In Chile, changes in wage levels were accompanied by changes in the overall number, as well as the quality, of applicants to the teaching profession. Teachers experienced a 32 percent decline in real salaries in the 1980s as a result of government budget reductions. Over this same period, the number of students entering education programs dropped 43 percent. In the 1990s, both trends reversed. Between 1990 and 2002, real teachers’ salaries increased 156 percent, and as a result teachers in Chile are now paid higher salaries than comparable workers in other occupations. At the same time, there was a 39 percent increase in the number of education students, and the average score for applicants to education programs increased 16 percent. This improvement in applicant quality did not take place across all degree programs, such as engineering, where the average entrance exam score remained more or less constant. Those patterns suggest that changes in salary level can affect individuals’ choices to become a teacher.

8. Note that teachers’ pensions and other nonsalary benefits are not dealt with in this discussion. Pensions are, however, widely believed to be quite high when compared with nonteachers’ pensions, to be earned at an earlier age, and to be fiscally secure. High, early, and secure pensions may be a strong incentive for teachers to enter and remain in the field.
In 1996, Chile introduced the SNED (Sistema Nacional de Evaluación de Desempeño de los Establecimientos Educacionales, or National System of School Performance Assessment), which offers monetary bonuses to schools that show excellent performance in terms of student achievement. Teachers in winning schools receive what has typically amounted to one-half of one month’s salary, or between 5 and 7 percent of a teacher’s annual salary. Although impact evaluations of the SNED are difficult owing to the absence of a natural control group, this chapter provides some preliminary evidence that the incentive has had a cumulative positive effect on student performance for those schools facing relatively good chances of winning the award.

In Chapter 5, Nora Gordon and Emiliana Vegas evaluate the effect that a large reform of educational finance has had in Brazil on educational spending, teaching quality, and student outcomes. Brazil is a vast country characterized by large inequalities in educational spending and educational outcomes. Those inequalities exist between states and also between the different municipalities within each state. The Fundo de Manutenção e Desenvolvimento do Ensino Fundamental e de Valorização do Magistério (Fund for the Maintenance and Development of Basic Education and Teacher Appreciation, or FUNDEF) reform was implemented in 1998. FUNDEF is a national reform for finance equalization on behalf of primary education in which each state and municipal government in Brazil pools a percentage of educational funds at the state level. Those funds are then redistributed equally, on a per student basis, to each governmental education authority (state and municipal). Addressing a long-standing inequality in educational finance, this reform tends to increase per pupil educational funding in municipality-run schools and to decrease per pupil educational funding in state-run schools, particularly in the poor northern and northeastern regions of Brazil.

Among FUNDEF funds, 60 percent is earmarked specifically for teachers. Those funds are used to hire new teachers, to train underqualified teachers, and to increase teachers’ salaries. Some evidence shows that the governments that experienced increases in mandated per pupil spending actually hired new teachers and decreased class sizes. Gordon and Vegas also document a sharp rise in teacher educational levels although they find that this rise was caused less by the FUNDEF reform and more by a legislative mandate enacted around the same time.

The FUNDEF reform and the changes it created in educational inputs have, in turn, generated changes in outcomes. More students are now attending school in the poorer states of Brazil as a result of the reform, specifically in the higher grades of basic education. Additionally, having teachers with higher educational levels is related to lower levels of overaged students in the classroom. This finding suggests that having qualified teachers helps students stay on track in school, repeat less, drop
out and reenter less, and perhaps also enter first grade on time. Furthermore, low-performing students suffer most from inequalities in per pupil spending. This result may indicate that finance equalization reforms that decrease the spending inequalities may also decrease the performance gap between high-performing and low-performing students and between white and nonwhite students. While the exact mechanism is not clear, giving teachers more competitive salaries, hiring more teachers, and ensuring that teachers have adequate educational levels appears to have particularly benefited low-performing and disadvantaged students in Brazil.

In Chapter 6, Miguel Urquiola and Emiliana Vegas analyze the teachers’ salary system in Bolivia and, in particular, the effect of a teacher bonus to work in rural areas. As in many other countries, the rural teacher pay differential in Bolivia is intended to compensate teachers for the perceived hardship of living and working in a rural area. As a result of recent urbanization and demographic growth within cities, some designated rural schools have been incorporated into urban areas. In those cases, urban and rural teachers work in neighboring schools, sometimes even the same school, with indistinguishable groups of students. This chance occurrence creates a situation in which teaching quality can be compared between teachers who are classified as rural (and thus earn higher wages) and those classified as urban.

Urquiola and Vegas found no meaningful differences between the test scores and other educational outcomes of students of urban-classified and rural-classified teachers with the same background characteristics. This result suggests that the rural pay differential is not successful at attracting and retaining teachers who are more effective than average urban teachers. In further support of this finding, rural teachers nationally are twice as likely as urban teachers to lack full teacher preparation, and they are also more likely to abandon the profession.

In Chapter 7, Patrick J. McEwan and Lucrecia Santibáñez evaluate the effect on teaching quality and student outcomes of a teacher pay reform in Mexico. Mexico’s Carrera Magisterial Program, which began in 1993, created a means by which teachers can move up consecutive levels of higher pay on the basis of year-long assessments of a series of factors, including their professional development and education, their years of experience, a peer review, and, most important, their students’ performance. The purpose of the reform was to establish incentives for teachers to improve their qualifications and effectiveness in the classroom and to create a means by which teachers could receive promotions without being promoted out of the classroom and into administrative positions. The size of the bonuses offered by Carrera Magisterial are quite substantial, amounting to between 24.5 percent of teachers’ base wage for the first promotion and 197 percent of base wage for the highest (fifth) promotion.
Despite the program’s promise, McEwan and Santibañez find no apparent effect of the Carrera Magisterial program on student performance as measured by a standardized exam. Teachers who face greater incentives because of the reform do not tend to have students with higher achievement. Test scores do not capture the spectrum of ways in which teaching and learning can improve. The fact (a) that Carrera Magisterial measures test scores specifically—thereby creating a strong incentive for teachers to focus on improving scores—and (b) that, nonetheless, test scores have not gone up under the reform suggests that it is unlikely that any major unmeasured improvements in Mexico’s classrooms resulted from the reform.

The next three chapters explore the effect of school-based management reforms on teaching quality and student outcomes in three Central American countries: El Salvador, Honduras, and Nicaragua. Many people hypothesize that school-based management generates several incentives and conditions that can improve teaching quality and teaching. Those improvements include greater accountability to local stakeholders, direct communication between communities and schools concerning their needs and interests, and more flexible and meritocratic pay and advancement structures associated with closer-to-the-source evaluation and weaker teachers’ unions.

Chapter 8, by Yasuyuki Sawada and Andrew Ragatz, analyzes the effect on teaching quality and student learning of the EDUCO program (Programa de Educación con Participación de la Comunidad, or Education with Community Participation Program) in El Salvador. They find that this school-based management reform has had important effects on management practices, teacher behavior, and student outcomes although not all of those changes are precisely the ones that were expected or desired. In terms of management practices, Sawada and Ragatz find that although a few important powers have been relocated to the school level, most notably the ability to hire and fire teachers, many other decisions appear to continue to be made primarily by central authorities. Next, they find that most of the local decisionmaking power has been given to parents as opposed to principals. They also find important behavioral differences between EDUCO and control schools, such as fewer school closings, less teacher absenteeism, more meetings between teachers and parents, and longer work hours for teachers. The changes, in turn, are related to higher achievement in Spanish in EDUCO schools.

Chapter 9, by Emanuela di Gropello and Jeffery H. Marshall, finds some effects of the Honduran PROHECO (Proyecto Hondureño de Educación Comunitaria, or Honduran Community Education Project) that are similar to those found in El Salvador. Like EDUCO, PROHECO is a school-based management reform for rural primary schools. As in reports from El Salvador, Di Gropello and Marshall present evidence that teacher
behavior and characteristics differ between PROHECO and control group schools. Specifically, they find that PROHECO teachers are less frequently absent because of union participation, although they are more frequently absent as a result of teacher professional development. They also find evidence that PROHECO teachers are paid less than comparison teachers are and have fewer years of experience as teachers. Similar to El Salvador, evidence shows that PROHECO teachers teach more hours in an average week than do comparison teachers and that they have smaller classes and assign more homework. The examples lend credence to the idea of greater efficiency and teacher effort in decentralized schools. Yet, school-based management in Honduras has not had much effect in some important areas where people expected it would. Namely, little evidence was found that teachers in community-managed schools differ from their colleagues in conventional schools in terms of their classroom processes, planning, or motivation.

Nevertheless, PROHECO students score higher on math, science, and Spanish exams than do students in similar non-PROHECO schools. The benefits of PROHECO are, in part, explained by the qualities and characteristics found to be different in PROHECO schools. Specifically, the more hours per week that a teacher works, the higher the student achievement in all three subjects. The frequency of homework is associated with higher achievement in Spanish and math. Finally, smaller classes and fewer school closings are related to higher student achievement in science.

Chapter 10 covers Caroline E. Parker’s findings from her analysis of Nicaragua’s Autonomía Escolar (School Autonomy) program. Her findings from the Nicaragua reform differ considerably from those of the other two Central American reforms. To a large degree, those differences may result from the major differences in reform design and objectives. Unlike PROHECO and EDUCO, Autonomía Escolar was aimed initially at urban secondary schools and, in particular, at schools with higher than average resources. In contrast to their peers in neighboring El Salvador and Honduras, parent associations and teachers in Nicaragua’s autonomous schools report little decisionmaking power. A decade after the reform was first implemented, very few differences existed between autonomous and non-autonomous schools that were not present in those same schools before the reform. Student background continues to be one of the most important factors explaining differences in student achievement in Nicaragua, and there is no systematic effect of the reform on student learning. Although third-grade students in autonomous schools have higher average test scores in mathematics than students in traditional schools, by the sixth grade, student at autonomous schools score lower than students in traditional schools in both Spanish and mathematics tests. Furthermore, very little evidence exists in Nicaragua that the observed differences between autonomous and traditional schools are responsible for the differences in test scores.
In the final chapter of our volume, Luis Crouch explores how the political economy of reforms to teacher incentives affect their design, their implementation, and, ultimately, their effect. He focuses on the role of teachers’ unions as critical stakeholders in the education sector in Latin America. Teachers’ unions typically oppose teacher incentive mechanisms, particularly those that generate competition among teachers and those that link pay to testing outcomes or other proxies for student learning or teaching quality. When powerful teachers’ unions oppose teacher incentive mechanisms, the unions can thwart effective reform implementation. Yet, in several cases, including Chile’s SNED and Mexico’s Carrera Magisterial (discussed earlier), powerful unions not only have consented to teacher incentive programs but also have collaborated in the design of the programs. Improving teaching and learning through effective incentives will require this type of collaboration.

**Improving Teaching Quality and Student Learning through Incentives: Main Lessons from the Latin American Cases Included in this Book**

Many types of education reforms affect teaching quality and student learning. When we think about the structure of teacher incentives, we often think of the level and structure of teacher compensation. Our findings support the intuitive notion that teaching quality is sensitive to the level and structure of compensation. For example, Chile’s more-than-doubling of average teacher salaries in the past decade is associated with an increase in the quality of entering students to teacher education programs. Similarly, the increased and more equitable distribution of resources resulting from FUNDEF in Brazil led to improvements in student outcomes. While the Chilean school-based teacher bonus for student performance did not initially have a great impact on student performance, it is associated with better student performance in its most recent available application. Moreover, average student achievement is increasing in schools that have had a chance of winning the SNED bonus in each of the three applications, suggesting that the program is having some of the expected results.

Changes in other aspects of teacher contracts can also have a great impact on teaching quality and student learning. Education reforms, even those not specifically designed to affect teachers, can influence—and sometimes have even greater effects than changes in compensation—the characteristics of those who choose to enter and remain in teaching and, importantly, their work in classrooms. For example, EDUCO and PROHECO, two school-based management reforms that devolved decision-making authority to the school, were found to have had an important impact on teacher performance and student learning. In particular, the
authority by EDUCO school councils to hire and fire teachers was found to be an important factor in EDUCO students’ better outcomes as compared to traditional schools serving similar populations in El Salvador.

A key lesson from previous research and from the evaluations in this study is that teachers do not always respond to incentives in predictable ways. Although teachers generally respond to incentives, they do not always do so in ways we would expect or hope. Sometimes, programs that are specifically designed to reward teachers who adopt specific behaviors or achieve higher results fail to generate a behavioral response from teachers. Bolivia’s bonus for teaching in rural areas is not resulting in higher quality rural teachers. Carrera Magisterial, Mexico’s innovative teacher career system specifically designed to reward teachers with better performance, was found not to result in changes in teacher performance, and thus has not led to improved student outcomes. These cases highlight the importance of design and implementation of teacher incentive reforms.

The cases discussed in this volume point to three design flaws in teacher incentive reforms: (1) only a small proportion of teachers face greater incentives to improve learning in their classrooms (i.e., most teachers would either receive the award regardless of performance or have no chance at all of receiving it); (2) the size of the award may be so small that teachers feel it is not worth the extra effort; and (3) the award may not be sufficiently linked to teacher performance. First, even though Mexico’s Carrera Magisterial and Chile’s SNED are both nationwide programs involving most of the country’s teachers, in each program application, a minority of teachers face any real likelihood of receiving a promotion in the case of Carrera Magisterial, or a bonus in the case of SNED. In other words, for the majority of teachers in a given application, there are no real incentives to improve performance. These findings point to the importance of crafting teacher incentives that affect a majority, if not all, teachers. Only when the majority of teachers are susceptible to receiving the benefits of hard work and improved outcomes, will the resources invested in both designing and implementing the reform as well as in the incentive mechanism itself have the potential to result in improved outcomes in a majority of students.

It is important to distinguish between being susceptible to receive a reward and actually earning it. Although all teachers should be susceptible to earning the incentive reward, only a subset of them teachers should receive it. For an incentive scheme to work effectively, it must recognize only the share of teachers who truly exhibit the desired performance and results. Weak links between desired performance and, for example, extra pay, tend to result in misallocation of rewards.

Second, the size of the reward matters for its impact on improving teaching quality and student learning. Often, a teacher’s base salary accounts for a large share of her total compensation, and incentives for
specific behaviors (e.g. working in rural schools, serving children with special needs) account for only a small proportion of total pay. In these cases, the compensation may be strongly linked to the desired outcome or behavior, but the reward size may be too small for teachers to be induced to adopt the desired behavior.

Third, incentives are most effective when there is a tight link between teacher performance and rewards. Faced with pressures from teacher unions to increase salaries for all teachers and with countervailing pressures to improve the efficiency of education spending and improve incentives for teacher performance, education policymakers run the risk of doling out numerous bonuses for different behaviors and characteristics (e.g. working in rural areas, attendance, time for preparing classes, etc.). A typical Peruvian teacher, for example, receives compensation for about 15 different “behaviors,” though these are not monitored and awarded to all teachers. In Peru, as in many other countries, each bonus is small in size and accrues to most or all teachers, and thus together amount to increases in pay without any strong association with teacher performance or clear messages to teachers regarding specific behaviors.

Finally, the case studies in this volume suggest that school-based management reforms strengthen the accountability relationship between teachers (and schools) and communities. The Central American experiences show that these reforms can result in, among others, less teacher absenteeism, more teacher work hours, more homework assigned and closer parent-teacher relationships. These are promising changes, especially in contexts of low educational quality where teacher absenteeism is high and schools are often not functioning at all.

**An Agenda for Further Research on Teacher Incentives**

Together, the studies contained in this volume affirm the centrality of teacher incentives in any education system. They challenge us to think carefully and critically about both the explicit and implicit incentives that affect who teaches and how they teach. It is our hope that the studies also provide insights into designing and implementing successful education reforms that will boost learning in a region that increasingly recognizes educational quality as a fundamental pillar of national development and competitiveness. Although we hope to have shed light on the important question of how to design effective teacher incentive reforms to improve teaching and learning, there are still many areas in need of further investigation.

First, few countries have experimented with performance-based schemes for teachers in the region, and thus we could only learn from the (very different) Chilean and Mexican experiences in this area. As more countries feel the pressure to improve educational quality under fiscal constraints, linking teacher incentives to student performance is likely to become more
popular. More and more varied performance-based teacher incentive reforms will give us opportunities to better understand their impact on teaching quality and student outcomes.

Second, although education reforms are common in the region, it is rare to find cases where findings from sound evaluations inform reform design. Our hope is that this report will contribute to fill this void.

Third, important issues affecting who enters and remains in teaching were not addressed in this report, such as non-salary benefits including pensions, insurance, etc. These non-salary teacher expenditures are substantial in the majority of Latin American countries, and their impact on teaching quality is likely to be non-trivial. Future research should address their role in attracting, developing and retaining effective teachers.

Finally, we hope that education policymakers incorporate plans to conduct impact evaluations in the process of reform design, so that it becomes common practice to learn from one’s (and others’) experiences. As mentioned in the Introduction, conducting impact evaluations of education programs is challenging given the impossibility of knowing what would have happened to those affected by the program in its absence. This evaluation problem plagues all social programs, and is particularly problematic when assignment of the program to participants is based on factors that could also affect the outcome of the program. Separating the effects on outcomes of variables that impact who (or what school) participates in a specific program from the program itself is known as the selection problem in the impact evaluation literature. For example, the team conducting the evaluation of Mexico’s Carrera Magisterial program had to address the issue that program participation by teachers is voluntary, and thus teachers who choose to participate in Carrera Magisterial may be different from teachers who choose not to participate in ways that also affect their students’ learning. These issues need to be taken into consideration when designing teacher incentive reforms and their impact evaluations.
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