One

Introduction: Inequality Driven by Education

The deep inequalities between the rich and the poor are increasingly of concern to citizens around the world and have been hotly debated by politicians and policy analysts. Public debates on inequality cross national borders and traditional political lines. Citizen engagement and protests span from the global Occupy Wall Street movement to the recent international populist backlash against globalization and immigration. Economists at the International Monetary Fund, who are best known for their work in securing global financial security, have called widening income inequality "the defining challenge of our time," arguing that such inequality puts economic growth at risk.[1]

Inequality is at some of its highest levels in decades within wealthy countries, and it remains a pernicious challenge in poorer ones. The drivers of inequality, from tax policy to financial exclusion, are often discussed in policy circles. However, one important but less frequently debated reason for inequality is education. Over the course of the twentieth century, as mass schooling spread virtually throughout the world, an individual's level of educational attainment became one of the most important factors determining his or her income and status in society. Sociologists of education have traced how different social mechanisms for achieving wealth and status in society, from marriage to family to guilds to religion

to occupation, may have retained some of their traditional force in certain parts of the world but today largely have given way to schooling as the primary currency for social advancement.[2]

The United States provides a good illustration of this phenomenon. Richard Reeves, in his latest research on social mobility in America, shows that parents' educational level is even more influential than their income level on their children's eventual position on the economic ladder, especially when looking at parents in the top 20 percent of education and income levels. Of course, in the United States, parents with more money are more likely to be able to move into areas with good schools, and so parents' ability to give their children a good education is connected with their available financial resources. The United States ultimately is a country where "the children and grandchildren of wealthy people end up wealthy themselves, but largely by getting a better education than through direct inheritance: because of B.A.s rather than bequests."[3]

As a result, for the United States and for many other countries across Latin America, Europe, Africa, and Asia, efforts to address inequality must include finding ways to give all young people a good-quality education. The effort to speed up the pace of change in education, or "leapfrog" educational progress, is critical at this moment in time. Luckily, in many corners of the globe, including across the United States, educators are working tirelessly on approaches that may help education do just that.

Leapfrogging Inequality: A Case Study from India

Surrounded by rice fields, the small rural village of Bhaumau in Uttar Pradesh—India's most populous state—is tapping into new people and places to help educate its children for the twenty-first century. Most children in the village have enrolled in local schools and, with help from the nonprofit organization Pratham, are mastering basic reading and numeracy. But outside school in the late afternoons, children are complementing their school-based learning by honing a wide range of skills through a combination of play, peer learning, technology, and light-touch parental oversight.

Groups of five or six children between ages 8 and 14 huddle together

with offline tablet computers, which are loaded with educational content in Hindi and English and updated manually every few months by Pratham field staff. The tablets help the children develop their skills, from digital literacy to critical thinking to teamwork, and they not only consume content but also make content by filming short skits and interviewing visitors. They constantly experiment with new projects, and in the process they practice and apply language, math, and science knowledge. The main role of their parents is to ensure that the tablets are charged in the evening, using either the sporadic electricity provided by the government or generator power.

Since the children of Bhaumau have been playing with the tablets, their assessment scores on academic subjects have increased markedly, especially in English. Perhaps more important, they are developing powerful learning-to-learn skills that will help them innovate, create, and thrive in a fast-changing world. Indeed, within the first three months of the program, these children, who had rarely encountered technology more complicated than a mobile phone, outsmarted the Pratham field staff by hacking most of the tablets' passwords, which enabled the children to add their own content to the tablets' existing repository.[4]

The village's schools rarely use this type of student-centered learning; the average teacher relies on more traditional, instruction-based approaches. Even when schools have special programs to incorporate technology, this does not necessarily translate into student-centered learning experiences. For instance, in one of Bhaumau's nearby villages, an extra classroom has been added to an elementary school and equipped with desktop computers. Yet students spend their class time there following the instructor's directions about how to use a software package, including filling in questions in an accompanying workbook describing the layout of the keyboard and the purpose of computers. In contrast, the students testing the limits of the tablets in Bhaumau are having the kinds of playful, dynamic learning experiences needed if they are to master not only essential academic skills such as literacy and numeracy, but also broader and equally crucial skills such as critical thinking, collaboration, empathy, communication, and problem solving. If the children in the modest village of Bhaumau, where most parents are day laborers and agriculture workers, can experience such a rich learning environment with dramatic

early results in a few short months, rather than the years or decades typical of education reform, why should this not happen elsewhere?

The Bhaumau children's experiences epitomize the underlying motivation for this report: to explore the possibility of harnessing innovations to leapfrog—to jump ahead, or move rapidly and nonlinearly—to make educational progress. We are less interested in the leapfrogging potential of one particular innovation over another, and we are agnostic about which sorts of actors drive these innovations. They may be governments, as is the case with the Indian government's recent move to set up "tinkering labs" in public schools. They may include civil society organizations, as in the case of the students in Bhaumau. They may also involve the private sector, as with the Indian adaptive learning product called Mindspark, which effectively supports students' in-class learning. Instead, we are most interested in exploring globally what leapfrogging in education looks like—and the potential for education innovations to help us leap ahead.

Our aim in this book is to share insights that can inspire action-oriented governments, civil society organizations, educators, philanthropic investors, and members of the business community to seriously consider the prospect of rapid, nonlinear educational progress and to reflect on what more needs to be done to make leapfrogging in education a reality. Ultimately, we hope that these education actors adopt a leapfrog mind-set when advancing their work.

Why Do We Need to Leapfrog?

The book's second chapter lays out the case for leapfrogging. It presents two main global education challenges: skills inequality and skills uncertainty. First, in most countries around the world, schools serve some children well and some poorly. This inequality in how formal education systems develop children's skills and abilities is found both within countries, between wealthy and poor children, and among countries, between the developed world's high-income countries and the developing world's low-income countries. What is more worrisome is that, with the current pace of change, it will take decades and centuries—a veritable "100-year

gap"—for poor children to catch up with the educational levels of today's wealthy children. Second, this 100-year gap becomes more daunting when it is viewed as the difference between what we consider to be good or bad education today, an assessment that does not take into account the type of education that children will need for the future. Fast-paced social and economic change means that it is not clear exactly what skills children will need to thrive in the future world of work and to be constructive citizens. Nonetheless, children will need to be well equipped to face uncertainty, and to, among other things, work collaboratively with others to solve problems—a skill seldom taught in the average school.

What Is Leapfrogging?

The third chapter defines leapfrogging, a concept not usually applied to education. It argues that the average schooling model used in most countries—what we call the persistent Prussian model, given its origins in mid-1700s Prussia—has brought many social and economic benefits to society. Thus, we should think carefully about what needs to be transformed to meet the twin challenges of skills inequality and skills uncertainty. Two of the most important transformations needed are in what children learn—that is, schooling must focus on a breadth of skills (box 1-1), including but going beyond academics—and how children learn, that is, schooling must put students' curiosity at the center of the teaching and learning process and make room for hands-on, playful, and experiential learning. Given these goals, we define leapfrogging as any practices, both new and old, that can address skills inequality and skills uncertainty at the same time, and much more quickly than the current 100-year gap predicts. Leapfrogging should set its sights on helping all children develop a breadth of skills, regardless of whether they are currently in or out of school or are living in poor or rich communities. Ultimately, we hope that educator actors adopt a leapfrog mind-set, one that breaks from the well-established logic of prioritizing, first, access to school; second, academic quality; and third, real-world relevance. Indeed, in most countries, mass education has developed following this stepwise approach: expand-

ing schooling access over time; then, once children are in school, working to improve the quality of core academic subjects; and finally focusing on cultivating the skills needed to thrive in the world.

Finally, although leapfrogging often connotes ideas of skipping over steps to advance along a particular path, we do not stick narrowly to this idea. We took inspiration from the overarching concept that rapid and nonlinear progress can be made without following the usual path, perhaps skipping steps but also possibly ending up in a new place altogether.

What Can Be Done to Leapfrog?

The fourth chapter introduces the role of innovation in helping education to leapfrog. One of the major questions the global education community faces—the education paradox of our time—is whether it is possible to simultaneously address both skills inequality and skills uncertainty. This paradox acknowledges that the current ways we help schools better teach the most marginalized, and in doing so address skills inequality, often reinforce the formal education structures that prevent students from developing the breadth of skills they need for 21st-century life and therefore do not prepare them for skills uncertainty. Citing the International Commission on Financing Global Education Opportunity, we argue that education innovation has a role to play in finding ways to leapfrog. Ultimately, innovation—an idea or technology that is a break from previous practice, and is often new in a particular context, even if not new to the world—can help countries that want to prepare all children for a fast-changing world but are "hitting the limits" of what their education systems can provide.[5]

In What Ways Can We Leapfrog?

The fifth chapter presents our two major contributions to the effort to explore how education can leapfrog: a leapfrog pathway based on existing evidence about how to transform what and how children learn; and a global catalog of education innovations that suggest ways to help ed-

BOX 1-1 Breadth of Skills

"Breadth of skills" refers to the expanded set of skills that education systems should help young people develop. Traditional skills, such as literacy and numeracy, must be complemented with skills such as collaboration, problem solving, and creativity. Children's cognitive, social, and emotional abilities must be brought to bear in developing their breadth of skills. "Breadth of skills" is used in this book interchangeably with terms such as "broad range of skills," "diverse skill set," or "21st-century skills."

ucation hop, skip, or leap to different destinations along this pathway. The pathway charts a vision for leapfrogging that recognizes context and leaves room for ongoing growth. Depending on the starting conditions of education, progress can include a hop, a skip, or a full leap toward enabling all children and youth to develop the broad set of skills they need. A "hop" includes approaches found at the start of our pathway; they can address skills inequality even if they do not address skills uncertainty—an important point of progress for marginalized children. A "skip" involves approaches in the middle of the pathway; they lay the groundwork for addressing skills inequality and skills uncertainty at the same time. Finally, a true "leap" addresses both skills inequality and uncertainty; it can occur only when the core elements of innovations are aligned at the end of the pathway. The pathway provides a map for education actors, on which they can place their own work and against which they can assess it. But what evidence is there that leapfrogging is possible in the here and now? We chose to scan the landscape of education innovations and develop the catalog based on our interest in grounding the theory about leapfrogging in existing practice. We wanted to learn what is realistically possible today and in the near future and how education innovations stack up against the pathway.

To develop the catalog, we compiled the lists of 16 organizations that we call Education Innovation Spotters. These organizations currently are examining different innovative programs, schools, policies, approaches, and tools; collecting information about them; highlighting them in pub-

licly accessible formats; and sometimes funding or supporting them. This catalog consists of almost 3,000 education innovations analyzed in relation to the four main elements of our leapfrog pathway, and this chapter gives illustrative examples from the catalog that showcase these elements in practice.

Where Is the Potential to Leapfrog?

This sixth chapter reflects on the current state of the education innovations community—the many actors worldwide who are engaged in supporting innovative education practices—and its collective potential to help education leapfrog. In many ways, the education innovations community is well positioned to advance leapfrogging; more than 85 percent of countries host innovations included in our catalog, which focuses heavily on poor and marginalized children. The vast majority of innovations center on efforts to change the teaching and learning process by using more playful learning approaches, and different actors have found ways to cooperate with government, civil society groups, and the private sector to implement their new approaches. However, there are also noticeable gaps that could limit the ability of the education innovations to help fuel leapfrogging. For example, few efforts prioritize teachers' professional development as a main aim of innovation, a factor that is essential for leaping ahead. Other comparatively neglected factors include finding new ways to recognize learning, to use technology to transform education, and to make effectiveness data publicly available. There are also significant gaps in the types of innovations that Innovation Spotters highlight: relatively few of these selected innovations are government-led, intended for children living in crisis and conflict, or focused on children with disabilities. Undoubtedly, many actors around the world are pursuing innovative education approaches in these areas; an effort to highlight such innovations would greatly enrich the community's knowledge.

Ultimately, we conclude that governments, funders, and practitioners—and all those interested in helping leapfrog education to give young people the full range of skills they will need to thrive—should be optimistic about the potential to rapidly accelerate progress. The education inno-

vations community is energetic, diverse, and widespread, and it appears to be willing to experiment with the persistent Prussian model of schooling. In many corners of the globe, the leapfrog mind-set is alive and well. Children from poor and wealthy families alike are participating in new approaches that have shown impressive results in changing how schooling is delivered, what is taught, and how teaching is done. This richness of education innovations holds promise for leapfrogging—addressing skills inequality and skills uncertainty—especially if the education innovations community can do a better job of mitigating current gaps and governments can provide a conducive environment for effective innovations to thrive and be scaled up.