Workforce Development for the Developing World

AUTHOR: Gordon Hanson, Harvard Kennedy School

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NOTE

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Harvard Center for International Development
Harvard University
79 JFK Street
Cambridge, MA 02138
cid.harvard.edu

GORDON HANSON

HARVARD KENNEDY SCHOOL

Peter Wertheim Professor in Urban Policy
Academic Dean for Strategy and Engagement

Gordon Hanson is the Peter Wertheim Professor in Urban Policy at Harvard Kennedy School and Academic Dean for Strategy and Engagement. His research focuses on globalization and its impact on labor markets, including influential work on the “China trade shock.” His current work examines regional job loss, place-based economic policy, and the local effects of the energy transition. He has published widely in leading economics journals and is frequently cited across the social sciences and in major media outlets. He is a research associate at the National Bureau of Economic Research and has held faculty positions at UC San Diego, the University of Michigan, and the University of Texas. He received his PhD in economics from MIT and his BA from Occidental College.

WORKFORCE DEVELOPMENT FOR THE DEVELOPING WORLD

Disquiet about the state of the labor market has gone global. In high-income and many middle-income countries, longstanding concerns over how globalization and technological change have left behind large numbers of middle-wage workers are being compounded by fears of a looming AI job collapse. Across the developing world, apprehensions over how to address persistently high rates of informality (especially in Latin America), youth unemployment (especially in Africa), and rapid urban population growth (in urbanizing Asia and Africa) are being exacerbated by concerns over the impacts of industrial robots, climate change, and geopolitical conflict.

There is a near ubiquitous desire to create more good jobs — positions that offer decent pay, stable employment, and upward mobility to workers on the middle and lower rungs of the income ladder. The failure to satisfy that desire is in part responsible for greater global social dislocation and support for populism and economic nationalism, which have contributed to geoeconomic instability.

BIG QUESTION: **Are there potential new approaches to workforce development to improve labor market outcomes in the developing world?**

Workforce development comprises programs that help workers acquire the skills they need to secure and retain employment, while helping employers identify workers whose capabilities match their needs. Skepticism about worker training seems to be nearly as widespread as the wish for more good jobs. Much of that skepticism is deserved. Studies in high-income and developing countries have found that government training programs often fail in their basic mission of placing participants in jobs. Yet, the news is not as bad as it may seem. One source of optimism is recent evidence on workforce development, which indicates that well-designed career and technical education can deliver lasting improvements in earnings and employment. We are beginning to understand what works with workforce development, although challenges remain with how to replicate successful programs. A second source of optimism is that through efforts to expand secondary and tertiary schooling, many countries, intentionally or not, are creating the educational institutions that would be needed to implement workforce development at scale. Because large new investments in career and technical

education are already occurring, the question is less ***whether*** countries should make such investments and more ***how*** to make them wisely and to ensure that they enshrine best practices in workforce development.

As a starting point, consider two of the most pressing challenges that workforce development is meant to solve. **One is workers not having the skills that are in demand by firms capable of creating jobs that pay well and offer opportunities for advancement.** Such enterprises are likely to be productive formal sector operations that have the potential for continued growth. Like their counterparts in high-income countries, these upper-tail firms often identify the scarcity of talent as a binding constraint on their expansion. Skills mismatch may arise from two interconnected market failures. First, firms may not be willing to cover the cost of training their workers in general skills required in their industry. Firms fear that after receiving such training, workers may be hired away by their competitors at higher pay and before training costs are recouped. The onus for the costs of general training thus tends to fall on workers. For workers, training costs include not just tuition, which may be partially or fully covered by the government, but foregone earnings while completing training. Lower-income workers may be unable to finance the costs of training because of credit market imperfections, which complicate borrowing for investing in human capital. The role of workforce development is to help workers acquire the general skills needed to obtain productive employment. Recent innovations in the design of workforce development address skills mismatch by incorporating employers into the organization training and subsidizing training for economically disadvantaged participants. In contrast to large-scale government training programs of the past, these programs have succeeded in generating benefits in excess of their costs.

A second challenge is the difficulty that workers and employers may have in figuring out whether they are right for each other. Search and matching frictions abound in labor markets. If a productive firm fears that posting an ad for a new position that offers attractive pay and benefits would invite a deluge of job applications, it may turn to screening mechanisms, which often have the unintendedly pernicious effect of excluding disadvantaged yet productive workers. Such mechanisms include utilizing social networks to identify job candidates, requiring a record of previous formal sector employment, or engaging in statistical discrimination based on worker demographic characteristics. If workers in turn fear that they will not be considered for desirable jobs, they may see investing in general

training as too risky and elect not to enroll in the options that are available. Effective workforce development requires convincing both sides: employers that graduates are employable, and participating workers that worthwhile jobs will be waiting for them upon program completion. Recent innovations in workforce systems address how to improve the matching of workers to firms.

The effectiveness of workforce development in developing countries may also depend on other factors that affect labor-market performance. If primary and secondary schools do not produce graduates who are numerate and literate, subsequent career and technical education may add little to the earnings prospects of program participants. The dearth of good jobs may be due in part to regulatory barriers, minimum wage provisions, and financial market imperfections, which keep the payrolls of productive firms artificially small. Productive firms that do succeed in growing may acquire monopsony power in wage setting, which could allow them to suppress wages by restricting hiring. Wage markdowns may dissuade some workers from taking up costly training. If underinvestment in energy and transportation infrastructure limits the access of firms to reliable power and distribution networks, labor productivity and the return on investing in job-specific skills could be dampened. Policy interventions that address these and related market distortions may enhance the perceived value of career and technical education.

Measuring Returns to Workforce Development

Making workforce development work in developing countries requires eliminating gaps in our knowledge about the effectiveness of career and technical education and how to structure the components of worker training programs. First, we need credible estimates of rates of return to alternative types of vocational education. Many countries are overrun with training providers. The race to prepare for AI is likely to make the cacophony of options even more disorienting. Reliable estimates of the labor market return to training would help policymakers allocate resources across training providers more efficiently. Evidence that the estimated returns to training vary widely across programs suggests many should not receive funding.

Second, employers and workers need to believe that training will meet their respective needs. If they do not, they may opt out of, or underinvest in, training. In well-functioning workforce systems, the interests of workers, the business sector, training providers, and the public sector are fairly represented. Because stakeholder engagement is often not the strong suit of government education and labor ministries, nonprofit organizations and other civil-society actors tend to play an important role in how workforce systems are designed and implemented.

Ideally, when it comes to data on workforce programs we would have information on both private rates of return — the expected increase in individual earnings from becoming accredited or attaining a degree — and social rates of return, which add to private returns spillovers to broader society from individual human capital accumulation. Even getting a handle on private rates of return to worker training is an immense challenge. Next, we consider what we need to know to design effective workforce development systems, what we know currently, and what options are available for closing the knowledge gap.

A Mexican Case Study

To frame the challenge, consider the case of Mexico, a middle-income country in which more than half of workers are employed in the informal sector and in which real wage growth has been sluggish for decades. Improving access to opportunity for the median Mexican worker requires making it easier to move from informal to formal jobs. Recent changes in Mexico's educational system would seem to offer a path forward. After making lower secondary schooling (grades 7 to 9) compulsory in 1993, the country began to mandate upper secondary schooling (grades 10 to 12) in 2012. The upper secondary system comprises college-preparatory high schools, which offer general academic training and a diploma ("Bachillerato General") needed for entry to university; vocational high schools, which offer technical training and accreditation ("Profesional Técnico") for entry into the labor market; and technological high schools, which allow students to simultaneously earn a diploma and technical accreditation ("Bachillerato Tecnológico").

In 2023, approximately 65% of upper secondary students were taking the general academic track, 25% were taking the technological track, and 10% of students were

taking the professional technical track. Although nearly one half of young people enroll in tertiary education after secondary school, in 2020, only 23% of those ages 25 to 34 had attained a bachelor's degree. The discomfiting coincidence of high college-preparatory secondary enrollment and low university completion raises concerns over whether vocational high schools are undersubscribed (i.e., students are not choosing the educational pathways that are best suited for their career interests), under-resourced (i.e., due to political pressure, poor information, or other factors, the government ends us diverting spending to college-preparatory tracks), or both. For Mexico to build its recently expanded upper secondary schools into an effective workforce development system, policymakers need credible estimates of returns to alternative forms of secondary education and to identify the types of students for which specializing in vocational and technical training would yield the highest economic return. Today, little such information is available.

Lack of knowledge about the value of career and technical education in the developing world mirrors that in Mexico. In high-income countries, the labor market return to education is the subject of a huge academic literature. From the 1970s to the 1990s, the return to schooling was among the most researched topics in labor economics. Early approaches applied the Mincer wage equation, in which one regresses current earnings of individuals on their educational attainment, while controlling for demographic and other characteristics. The widely cited finding that each additional year of schooling is associated with higher earnings is plagued by one of the most studied identification problems in economics: because individuals with higher unobserved earnings potential may be more likely to obtain higher levels of education, the estimated mean of earnings conditional on educational attainment may be biased upwards. To obtain causal estimates of the return to schooling, later research exploited natural experiments, including those related to changes in compulsory schooling laws , admission lotteries, and college admissions. These results confirm that the labor market returns to education are strongly positive. Subsequent advances in research in high-income countries means we have credible estimates on the returns to many specific types of education and training, including those related to workforce development.

In developing countries, research on how educational attainment affects earnings is less conclusive. Empirical estimates of returns to schooling from Mincer wage regressions do show higher earnings for individuals with higher levels of schooling. And, intuitively, returns to education in developing countries appear to be higher than

in high-income countries. Given that human capital per worker is relatively low in developing countries, we would expect the wage bump from completing additional schooling to be commensurately large. Yet, such empirical results are subject to the same omitted variable bias problem that has dogged labor-market research in high-income countries. In developing countries, parental wealth, family connections, class and race distinctions, and other poorly measured characteristics of individuals may affect who obtains higher education and who obtains more highly remunerated employment. In contrast to high-income countries, there are just a handful of studies in developing countries that provide causal evidence on the returns to education.

What options do we have for improving knowledge of the economic benefits to career and technical education? Consider, again, the case of Mexico. To build its secondary schools into a fully functioning workforce system, we would need credible evidence on: why students choose different upper secondary tracks (e.g., whether students default to the academic track because they lack information about the careers that technical and vocational tracks would allow them to pursue); how track choice and school quality affect subsequent educational attainment (e.g., whether high dropout rates in tertiary education are due more to students choosing secondary tracks that are poorly suited for them or to the poor quality of training they obtain in secondary school); and the labor market returns to alternative tracks (e.g., for students at different levels of academic performance in lower secondary school, how would selection into a technical versus an academic high school affect their subsequent earnings and success in obtaining formal sector work).

Given that many countries have digitized records in their educational systems and social insurance systems, answers to these questions are eminently knowable. Electronic records on students make it possible to follow them into the labor force, where their earnings are captured by the social insurance system or household surveys. In the United States, a rapidly growing literature combines school records with administrative earnings data to estimate the impact of career and technical education offered by public two-year and four-year colleges on earnings and employment. These empirical approaches are readily applicable in many developing countries. Although challenges remain, prospects for assessing how career and technical education affect labor market outcomes for individuals in developing countries have never been better.

Experimenting with Workforce Systems

Suppose that we succeed in acquiring credible estimates of the labor market returns to different types of vocational training in a broad range of developing countries. Valuable as such information would be, it would likely not be sufficient to craft effective workforce development strategies. We would also need to determine which components beyond education should be included in training and which actors should deliver training. Learning how to tune workforce programs properly requires new types of policy experiments.

To see why further experimentation is needed, consider what we have learned about worker training in recent research. One lesson is that make-work programs, such as subsidized employment in public sector jobs, and short-run training, such as the three to six-month programs that are commonly funded by developing country governments, tend to be ineffective. Effective programs, in both high and middle-income countries, offer more extensive training that targets skills in specific occupations with private sector employers in mind. The second lesson is that effective programs tend to include training in soft skills. Knowing how to choose a career, find a job, and interact with one's coworkers can be as important for one's income and employment as competence in occupational skills. A third lesson is that there is wide variation in the capability of training providers to deliver positive results. When averaging across studies of worker training in developing countries, the average treatment effects of training on employment are positive. Yet, this general tendency combines near zero returns on training in many large-scale government programs and high returns in smaller programs run by nongovernmental organizations. These lessons resonate with what we have learned about best practice in worker training in high-income countries.

In the late 1990s, social entrepreneurs in the U.S. nonprofit sector developed a new approach to worker training. One motivation for their work was the multi-decade failure of government funded worker training programs to improve outcomes for many target participants, including disadvantaged youth and the long-run unemployed. The new approach had four elements: targeting economically disadvantaged individuals; screening participants on math and language competence and motivation to complete training; providing 18 to 24 months

of training in job-specific skills demanded by firms in expanding sectors in the local economy (e.g., construction, healthcare, information technology, manufacturing), often in consultation with employers; and providing career counseling, assistance in job search and job placement, and guidance on behavior in the workplace.

Evidence from randomized control trials reveals that active labor market programs produce sizable gains in earnings (e.g., increases in hourly wages of 15% to 30%) that endure for up to five years beyond program completion. Yet, additional analysis suggests that when similar programs are implemented in the public sector, by other nonprofits, or at larger scale, they often fail to deliver comparable results. We have learned that active labor market programs ***can*** work but not which types of training providers are capable of implementing them.

What type of experimentation is needed to determine how to implement effective workforce development at scale? The standard approach to evaluating worker training is to conduct a trial of a specific program in which one randomizes which individuals are offered the opportunity to take-up training. We have learned a great deal from such research, including that there is wide heterogeneity across training providers in the ability to deliver training. That heterogeneity implies that we need to experiment across training providers and not just across individuals and that we need to monitor the behavior and performance of providers carefully. Provider-level experimentation means conducting evaluations at a much larger scale than in the past. Because many countries have incorporated vocational training into their secondary education systems, they would seem to have the capacity to conduct training at scale. In effect, countries have created national workforce development systems ahead of an ability to measure and evaluate them. The coincidence of expanding secondary school systems, the digitization of educational and employment records, and the accumulation of credible evidence on the impacts of specific training interventions means that we are in position to ensure that the measurement and evaluation of workforce development catch up to its practice.

A More Inclusively Prosperous Future

The future we envision is one in which individuals in developing countries enter the labor market with the skills they need to obtain good jobs. For most individuals in developing countries and for the foreseeable future, that transition will involve a move from secondary school directly into work. Making that transition as successful as possible requires rethinking our approach to workforce development. We need to target training in substantive occupational skills in demand by employers, help individuals develop the soft skills they need to excel in the workplace, be attuned to changing labor market conditions, and use training providers that can deliver high quality services. We know what effective training looks like but not how to achieve it for society as a whole. Ongoing mass investments in secondary education plus the digitization of education and employment data means that we have the capability to build the workforce development that the developing world deserves.

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