

Skills Development for Youth in India: Challenges and Opportunities

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Abstract

This paper reviews the current state of education, skills development, and employment for Indian youth, and considers the challenges facing India's skills development system. Drawing from the experience of Karnataka, one of India's most industrially developed states, the paper discusses recent initiatives to facilitate young people's transition to the world of work. In India, young people who will soon be entering the labor market, constitute the largest segment of the demographic structure. The majority of young people have limited access to education and training, and most find work in the informal sector. In recent years India has rapidly expanded the capacity of educational institutions and enrollments, but dropout rates remain high, and educational attainment remains low. While India has a well-institutionalized system of vocational training, it has not sufficiently prepared its youth with the skills that today's industries require. Thus, to speed its economic growth and take advantage of its "demographic dividend," the country has recently embarked on drastic policy reforms to accelerate skills development. These reforms have led to important changes, both in the national institutional framework and at the institutional level.

Introduction

This paper reviews the current state of education, skills development, and employment for Indian youth, and considers the challenges facing India's skills development system. Drawing from the experiences of Karnataka, one of India's most industrially developed states, it discusses several recent initiatives to facilitate young people's transition to work.

Today, youth across the world face serious challenges regarding skills and jobs, challenges fundamentally different from those their parents faced. In the globalized economy, competition has become intensified among firms and industries in developing and developed countries alike, requiring their workers to have higher levels of skills to enable them to engage in innovation, improve the quality of products/services, and increase efficiency in their production processes or even to the point of improving the whole value chain process. Rapid technological change demands a greater intensity of knowledge and skills in producing, applying and diffusing technologies. In turn, all these have changed the nature, contents, and types of skills that industry demands. As a result,

most countries recently moved to reform their education systems, to upgrade the skills of their workforces.

The challenges are greater for developing countries like India, which have long suffered from a shortage of skilled labor. But today, developing-country firms and producers have become increasingly involved in the global value chains, requiring them to meet global standards of quality and efficiency. This, in turn, requires higher levels of skills in the workforce. Moreover, many countries today need more skilled workers to compete in attracting foreign direct investment (FDI), as it is a viable strategy for bringing advanced technologies to their domestic industries, expanding their foreign trade, and thereby boosting industrial and economic development; the availability of, and even the stock of, skilled workforce in a country is a key determinant for multinational firms considering investments.

Over the last two decades, however, developing countries have primarily focused on basic education, particularly primary education, since the 1990 World Conference on Education for All (WCEFA) held in Jomtien, Thailand, and its follow up at the 2000 World Education Forum in Dakar, Senegal. But today they are well aware that expanding basic education is hardly sufficient in this globalized era if their firms and industries are to compete in the global economy, and if they are to promote sustainable economic growth, unless they work harder to upgrade their workers' skills. Moreover, though basic education has expanded considerably in recent decades, graduates of basic education who are entering the labor market have increasingly found themselves inadequately equipped with the skills that industry demands. Thus, developing countries, and all major international organizations concerned with education, have recently shifted their focus, away from basic education and back to technical and vocational education and training (TVET) and higher education (Asian Development Bank 2008; World Bank 2012a; UNESCO 2012).

In considering skills development for youth, India is particularly interesting for several reasons. First, it is expected to have the world's largest population in the next several years, as it outgrows China. Unlike China's population, which is aging, India enjoys a large "demographic dividend": the majority of its population is young. Secondly, India's labor market has traditionally been characterized as highly hierarchical and segmented, with 86% of total employment in the informal sector, including self-employment (World Bank 2012b). Third, India has recently experienced rapid economic growth, largely led by the service sector. Yet, despite its rapid economic growth since the introduction of economic reforms in 1991, employment has grown slowly, particularly in the private sector, making the 1990s and 2000s a period of "jobless growth." This has had serious implications for youth, as most new entrants in the labor markets, including the majority of youth, have ended up working in the informal sector, often for low wages without social security benefits and long-term job security. Fourth, though education opportunities in primary and lower secondary education have expanded rapidly, the majority of Indian youth, particularly in rural areas, still have very limited education and

training opportunities. Finally, the Indian government has recently made drastic changes in its policy and institutional setups for promoting skills development. It is of interest to understand how India's system of skills development has changed, with different dynamics among the government, the private sector, and training institutions.

This paper is organized as follows. The following section discusses key issues concerning training and work for youth. Next is a snapshot of India's current demographic and employment trends followed by an analysis of the education and training opportunities available to Indian youth. Drawing on recent experience in Karnataka, the following section discusses new approaches to skills development for youth at both national and state levels. The last section concludes with suggestions for policy.

Challenges Facing Skills Development Efforts

Today, youth in developing countries who are seeking work face great difficulty. First, in the globalized era, competition has intensified among firms and industries, requiring them to improve the efficiency and quality of their products and services. This forces them to hire fewer, but more skilled, workers. Thus, the entry requirements for youth seeking work have become higher and tougher. Second, the global economic crises and other trends have led firms and industries to engage in massive restructuring, resulting in fewer new job openings and growing unemployment, particularly among youth. Globally, some 200 million people are unemployed, including 75 million under age 25 (World Bank 2012a). Third, technological change, particularly the development of information and communication technology (ICT), is occurring at unprecedented speed, requiring workers to have more, and more complex, cognitive skills than ever. Moreover, the global economy is increasingly becoming "knowledge-based" (OECD 1997), demanding a higher intensity of knowledge and skills to do one's job. Fourth, global labor markets are becoming increasingly casualized and flexible (Standing 1999). Firms are adopting more flexible employment practices. An increased proportion of workers, especially new to the labor market, must now work as casual labor, without job security and stable career prospects. Finally, because more people are migrating across national borders seeking work, youth from developing countries are increasingly exposed to global labor markets, competing even with workers outside their own countries who offer more knowledge, skills, qualifications, or competencies, or for lower wages.

At the same time, the skills development systems in most developing countries are poorly equipped to meet these challenges and prepare youth with the work skills they need. Skills development is the most difficult sub-sector to organize and manage in the education sector, because it cuts across organizational boundaries, caters to diverse clients, and involves multiple delivery mechanisms, and its market characteristics keep changing (Asian Development Bank 2008, p.x). Moreover, efforts at skills development must often meet multiple objectives: help reduce poverty, provide a second chance for dropouts, and serve as a reservoir to keep youth with little academic interest out of the streets and away

from social problems. These multiple objectives make it difficult for governments to shape coherent and focused strategies and actions.

Thus, with the exception of East Asian countries, notably South Korea and Singapore (Ashton & Green 1996; Kuruvilla et al. 2002), many developing countries have experienced poor performance in TVET as they lack the mechanisms and funding to implement the programs needed to reflect industry's changing demands back into the types and contents of training. Moreover, TVET is delivered through various channels for diverse groups of people with diverse socioeconomic backgrounds, aspirations, ages, and academic abilities, across various vocational trades. It often suffers from a lack of coordination among the various ministries, public agencies, and educational institutions involved, resulting in duplicated efforts and gaps without effective outcomes. Indeed, TVET has often been characterized as inefficient, irrelevant, and slow to respond to the changing skills demands of the labor markets, and costly because of its higher unit costs. Therefore, the relevance of publicly provided TVET has been debated for more than two decades. Since the 1990s donors have turned away from TVET toward basic education (Middleton, Ziderman & Adams 1993; Asian Development Bank 2008).

Still, skills development is an urgent and important challenge for developing countries, in particular for countries with large youth populations such as India.

Trends in Demographics, Industrial Structure, and Labor Markets in India

This section presents a snapshot of India's demographic and labor market trends to provide background for the discussions that follow.

Large Youth Population

Within the next several years, India's population is expected to exceed that of China. Unlike China, however, India's population structure is still relatively young overall, and the population keeps growing rapidly, with 28 million youth being added every year! Of India's total population of 1.21 billion according to the 2011 Census (Government of India (GOI) 2011b), more than 672 million people are of working age (15 to 59). Of these, 253 million are youth aged 15 to 24, accounting for 21 % of the total population in 2011¹. With a continued decline in the dependency ratio estimated over the next 30 years, India is expected to enjoy a large "demographic dividend" for the coming decades.

With 12.8 million young people newly entering the labor market every year (GOI 2011a), the government recognizes that the country faces a serious skills shortage, as the majority of these new labor market entrants are likely to remain unskilled. It has also

¹ Calculated from the data on total population from the provisional 2011 Census Data and the 2001 Census Data available from the Office of the Registrar General and Census Commissioner, Ministry of Home Affairs, Government of India (http://censusindia.gov.in/Census_And_You/age_structure_and_marital_status, (accessed December 16, 2012).

realized that it should take advantage of the “demographic dividend” by skilling young people who could become an “invaluable asset, if equipped with knowledge and skills, to contribute to national and global economies” (GOI 2011a, p.1). In fact, the government ambitiously envisages that India could become a supplier of skilled workers “exportable” to other countries, given four factors: the vast size of the youth population, their limited domestic employment opportunities, the shortage of skilled workers in developed countries, and the growing global practice of outsourcing.

At the same time, India’s demographic profile poses serious pressure on government and society to invest in education and training. Indeed, in 2005, roughly 413 million people were in the school-going age group (6 to 24 years)(see Table 1), accounting for 35% of the total population. Since then, this figure has surely increased. Thus, expanding education and training for them and ensuring its quality will seriously challenge the government, which will have to build more schools, train and hire more teachers, and provide them with more textbooks, educational materials, and equipment. Despite India’s projected demographic dividend and its abundant labor supply, it suffers from a serious shortage of skilled workers, because of their limited access to education and skills training and a large skills mismatch in the labor market.

The school-age population includes over 100 million young people from socially-disadvantaged groups such as Scheduled Castes (SC) and Scheduled Tribes (ST) (see Table 1). As they have long experienced poorer access to education and decent employment, the government has extended affirmative action for them by setting special quotas for their entry to schools and public sector employment.

Table 1: Estimated Population of India by Age Group (in millions, 2005)

Stages of Education	Relevant Age Group	Total	Scheduled Caste (SC)	Scheduled Tribe (ST)
Primary	06-11	121	21	11
Upper Primary	11-14	74	12	6
Secondary/ Upper Secondary	14-18	94	15	8
Higher Education	18-24	124	19	9
All Education Levels	06-24	413	68	34

Source: GOI (2008)

In addition, Indian women and girls suffer from various forms of inequality at every stage of their lives. According to the 2011 Census, the sex ratio of India’s population aged 0 to 6 years is 914 females per 1,000 males, because social values favor having sons, and pregnancies are often terminated early if the child is found to be female (GOI 2011b). Women are also disadvantaged in their access to education and employment opportunities.

Segmented Labor Market Structure

India's labor market is highly stratified and segmented. As Table 2 shows, only 6.9% of the total workforce is in the organized sector, defined as private-sector firms employing 10 or more workers and all public sector enterprises. This figure has declined in recent years. Within the organized sector, the private sector is fairly small, accounting for only 2.2% of total employment. The remaining 93% of employees work in the unorganized sector: private enterprises with under 10 employees, the self-employed, and casual and family workers.

Table 2: Structure of Labor Market in India

Sector	No. of Employees (in millions)				Average Annual Growth (%)	
	1983	1993/94	1999/00	2004/05	1983 to 1993/1994	1994 to 2005
Total Population	718.10	893.68	1,005.05	1,092.83	2.1	1.9
Total Labor Force	263.82	334.20	364.88	419.65	2.3	2.1
Total Employees	239.49	313.93	338.19 (100%)	384.91 (100%)	2.6	1.9
Organized Sector	24.01	27.37	28.11 (8.3%)	26.4 (6.9%)	1.2	-0.3
Of which, in Public Sector	16.46	18.32	19.41 (5.7%)	18.2 (4.7%)	1.5	-0.7
Of which, in Private Sector	7.55	7.93	8.70 (2.6%)	8.3 (2.2%)	0.4	0.6

Sources: GOI 2008 : Tables 4.1, 4.5.

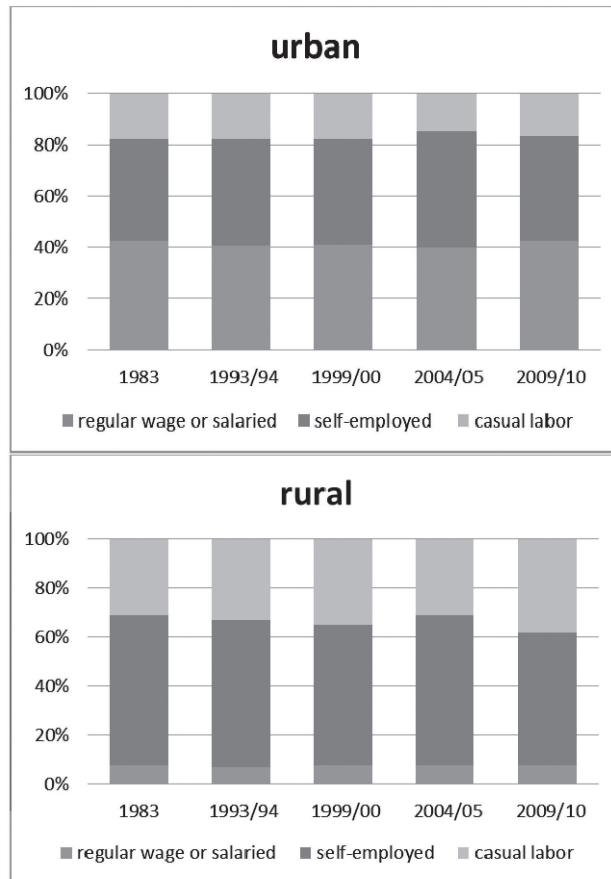
Notes: Employees include self-employed. Figures in parentheses indicate share of total employees. CDS data.

With respect to employment types, nearly one third of total employees are casual laborers and 43% are low-end self-employed (World Bank 2012b: Figure 1.2). Only 17% of total employees receive regular wages or salaries. As Figure 1 shows, casual workers and the self-employed together account for more than 90% of rural workers and about 50% of urban workers. Moreover, the share of casual labor in rural areas increased to 38% in 2009/10 (World Bank 2012b, p. 64). It generally quite difficult for youth, particularly in rural areas and especially if they are poorly educated, to find decent jobs with long-term stability and security.

Interestingly, despite the economic reforms that India introduced since the mid-

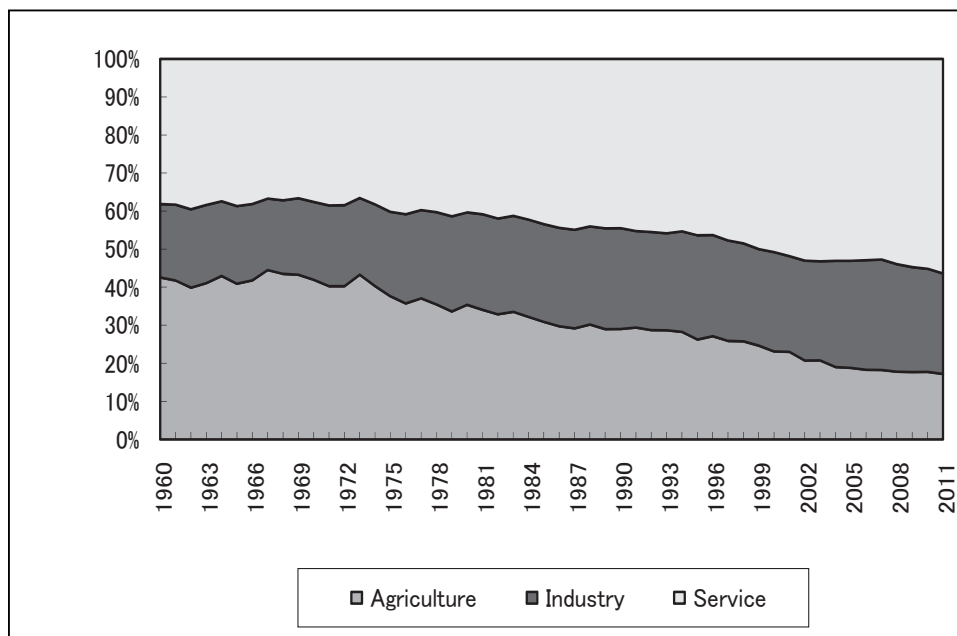
1980s and more seriously in the 1990s, employment growth stagnated in the 1990s and 2000s, making those two decades a period of “jobless growth.” Thus, even the growing Indian economy has failed to generate sufficient jobs to accommodate its new young entrants into the labor market.

Figure 1: Distribution of Rural and Urban Workers in India, by Employment Type



Source: World Bank (2012b: Figure 1.6)

Unlike the experience of East Asian countries, growth in the Indian economy has largely been led by its service sector, whose relative importance has been growing. As Figure 2 shows, while the agriculture sector’s contribution to GDP has gradually declined and that of the industrial sector has grown slightly, the share of the service sector has grown quite rapidly. In 2010, it accounted for 55% of India’s GDP.

Figure 2: Value Added as percentage of GDP

Source: World Bank, *World Development Indicators*, various years.

Looking at the amount of employment in each sector, however, agriculture is still the largest, accounting for 54%, while the industry and service sectors accounted for 18% and 25%, respectively, in 2008 (World Bank 2012b: Figure 2.6). In rural areas, non-farm employment also increased to 35% of the rural workforce in 2009/10, up from 30% in 2004/05 (World Bank 2012b, p. 95). Looking at the employment structures in non-agricultural sectors, we see that apart from manufacturing (26% of non-agricultural employment), some subsectors of the service sector such as wholesale and retail, and personal service have been growing. They now account for 48.6% and 35.6%, respectively, of non-agricultural employment (GOI 2008a).

In manufacturing, almost all firms belong to the informal sector. Formal sector firms account for only 0.7% of total manufacturing firms. The majority of informal sector firms are small, and located in rural areas (see Table 3). Size also accounts for large differentials in wages and productivity. Small firms have 12% of the productivity on average and pay 19% of the wages of large firms (World Bank 2012b, p. 105). This high prevalence of informality suggests that the majority of India's manufacturing workers, including youth, work in low-productivity, low-wage jobs, with little access to opportunities for formal skills development.

Table 3: Distribution of Formal and Informal Manufacturing Firms in India, by Location and Size, 2005

Firm Characteristic	Formal Sector	Informal Sector	Total
% of All Firms	0.7	99.3	100.0
Location			
Urban	60.2	29.0	29.2
Rural	39.8	71.0	70.9
Firm Size			
1-49	74.4	100.0	99.8
50-99	11.9	0.0	0.1
100+	13.7	0.0	0.1

Source: World Bank (2012b, Table 3.6)

Interestingly, however, manufacturing employers largely favor rural youth. Large firms, including multinationals, seek rural youths who complete vocational training even in remote areas. Indian labor laws are very protective of the rights of employed workers, making it almost impossible for firms to fire their workers². As a result, firms are very cautious about hiring new workers as regular wage employees. They are especially reluctant to take the less docile urban youth as new regular employees, fearing their greater propensity for labor disputes. Unlike practices observed among large manufacturing firms in the 1990s (Okada 2004, 2006), for the past decade or so, even large firms which had previously hired regular wage employees are increasingly taking on more new employees as casual workers to avoid possible labor disputes. Thus, today's youths, particularly rural ones, are likely to be contract workers, often receiving low wages without long-term job security.

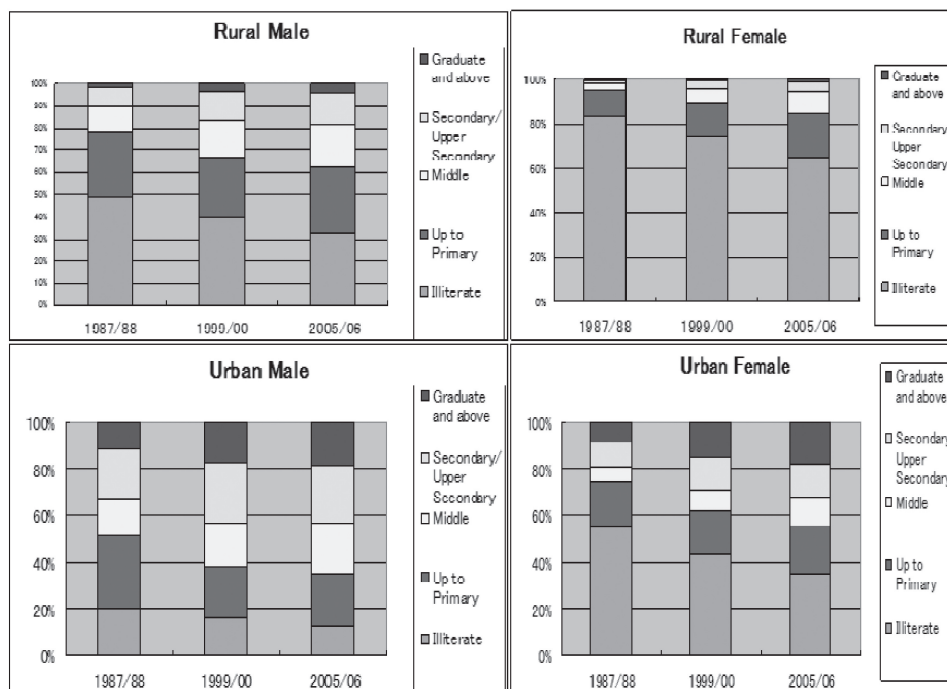
On the other end of the spectrum at the higher end of the labor market are many highly-educated professional and knowledge workers employed in such knowledge-intensive sectors as software and pharmaceuticals. Bangalore's software cluster, for example, includes a dense pool of highly-educated software engineers with highly specialized skills. This pool attracts talented professional workers and entrepreneurs, often young, who start new firms. In this competitive local labor market, highly-educated and skilled workers are in great demand. They are offered high salaries with first-class work environments including extensive in-firm training opportunities and lucrative fringe benefits such as stock options. They enjoy a highly urbanized lifestyle (Okada 2005).

Despite the widely cited successful growth of the Indian software industry, however, its fruits have been enjoyed by only a tiny fraction of the workforce. Figure 3 shows the composition of the Indian workforce by educational attainment for males and females,

² India's labor laws prohibits firms with 100 or more workers from laying off and firing any worker without permission from the government, which is almost impossible to obtain.

and in urban and rural areas. Surprisingly, as the figure shows, except for urban males, the majority of the workforce is still “minimally educated,” i.e., with no schooling at all or only primary. Thus, there is a risk that the “demographic dividend” might actually turn into a “demographic deficit” (Paul 2011) if the upcoming young labor force cannot get enough education and earn sufficient incomes to support the non-working age population in coming years.

Figure 3: Trends in Educational Composition of the Indian Workforce by Gender and by Location



Sources: NCERT (2009); *India Yearbook* (2009)

Indeed, employment opportunities are closely linked with the level of educational attainment, as evidenced in a recent sample survey by Desai et al. (2010) (see Table 4). The educated are much more likely to work as regular wage or salaried workers, earning high wage premiums (World Bank 2012b: Figure 5.3). As India’s labor market is highly stratified and segmented, young people must attain education and training, and develop their skills if they want decent jobs in the formal and organized sector. Because of the segmentation, it is extremely difficult in the Indian labor market to move up the career ladder to better jobs, crossing boundaries established by education and economic background.

Table 4: Incomes and Types of Occupation of Employed Males and Females Aged 15 to 59, by Level of Education

Educational Attainment	None	Grades 1-4	Grades 5-9	Grades 10-11	Grades 12/Some Colleges	Graduates/Diploma	All India
Mean Income (Rs)	21,734	25,984	35,718	53,982	69,230	114,004	47,804
Male (% in type)							
Cultivation	35	38	37	31	31	18	34
Livestock Rearing	36	34	32	26	26	16	31
Agricultural Labor	42	35	20	11	7	2	23
Non-agricultural Labor	34	29	27	15	10	4	24
Salaried Work	9	11	18	34	36	60	22
Business	9	13	16	19	24	22	16
Female (% in type)							
Cultivation	40	42	38	32	23	8	38
Livestock Rearing	58	54	57	51	44	17	56
Agricultural Labor	35	26	17	8	7	1	27
Non-agricultural Labor	9	10	8	7	6	3	1
Salaried Work	4	7	8	19	34	70	9
Business	4	7	8	11	13	11	6

Source: India Human Development Survey (Desai, et al., 2010: Table A.4.3a).

Education and Training Opportunities for Indian Youth

Access to Education and Training within the Formal Education System

Table 5 shows the supply capacity of educational institutions in India. As the number of institutions has recently increased at all levels, especially at the tertiary level, India's youth have also gained greater access to education. As of 2009/10, gross enrollments in primary (grades 1—8) and lower secondary (grades 9—10) education increased to 102% and 63%; those for upper secondary (grades 11—12) and higher education have risen to 36% and 18% respectively (GOI 2011c; UNESCO 2012). However, the dropout rates, and therefore wastage, are also high; about 53% of a given age cohort drops out before completing lower secondary education. These figures are even higher for socially disadvantaged groups such as the SC and ST, at 59% and 75% respectively (GOI 2011c: Table G-I, II, and III). This high dropout rate makes it difficult for those who leave school to access opportunities for skill development.

Table 5: Education and Skill Development Capacity in India

Type of Institution	1990/91	2009/10
Pre-primary schools	15,877	67,822
Primary schools	560,935	823,162
Middle/upper primary schools	151,456	367,745
Secondary	79,803	190,643
Government ITI/ Private ITC	-	7,886
Technical, industrial, arts & crafts schools	3,693	5,465*
Polytechnic institutes	879	3,292
Arts, science, and commerce colleges	4,862	14,321
Professional degree colleges (medicine, etc.)	130	2,074
Teachers' training colleges	474	3,357
Engineering, technology, and architecture	282	2,894
Other professional colleges (law, management, agriculture, veterinary, etc.)	876	1,914
Universities	184	350
Institutions of national importance		41
Research institutions	-	140

Source: MoHRD (2011). Ministry of Labor and Employment (2011)

* 2005/06 data.

Within the formal education system, some 350,000 to 400,000 secondary students are enrolled in vocational education. Vocational education accounts for less than 3% of the 14 million students in grades 11 and 12 (Asian Development Bank 2008). Following the 1986 National Policy of Education, the government has planned to make 25% of secondary education vocational. So far, however, it has not succeeded (World Bank 2012b, p. 200).

In addition, since 1988, the government has attempted to promote “vocalization” of secondary education. Vocationalization aims to diversify educational opportunities by introducing some vocational streams into general secondary education, to make graduates more employable and to provide an alternative path for those pursuing higher education. Since then, 9,619 vocational secondary schools have also been created offering 150 courses, to accommodate about 1 million students (GOI 2008b). These efforts, however, are still very small, accounting for only 4.8% of total enrollments in higher secondary education (GOI 2011c)³.

At the higher education level, the number of institutions has increased, with a

³ Internationally, however, “vocalization” of secondary education has proved to be ineffective, because it is costly and difficult to implement, requiring specially trained teachers, workshops, and equipment that are expensive to maintain and update, and different orientations from academic programs (Johanson & Adams, 2004).

rapid increase in private colleges. As of 2009/10, India had 350 universities and 24,560 colleges, including 2,894 engineering and technology colleges (see Table 6). In addition, it has 41 institutes of national importance, including the Indian Institutes of Technology (IIT), Science (IISc.), and Management (IIM), with campuses located in several locations in different regions. Entry into these prestigious institutions is extremely competitive. In addition, 1,274 polytechnics as well as colleges offer diploma-level courses to train future technicians and supervisors. And, the government has recently proposed establishing 1,000 polytechnics, some run by state governments, and some through public-private partnerships (PPP).

Interestingly, the wage premium for both upper secondary education and higher education has increased; indeed the wage premium for higher education doubled between 1999/2000 and 2009/10, even though a much larger share of the labor force was acquiring higher education (World Bank 2012b, p.27), generating further demand for higher education.

Despite all this expansion of education opportunities, however, India's youth still have limited educational attainment. According to the 2011 census (GOI 2012b), the literacy rate for Indians over age seven is 74% (68.9% for rural and 85.0% for urban populations). As Table 6 shows, Indian youths are getting more education at all levels. However, the levels of completion for the upper-secondary and tertiary levels are still low, at 22% and 10% respectively. Thus, the mean years of schooling for young people aged 15 to 34 remains very low at 7.1 years: 7.9 for males and 6.3 for females (World Bank 2012b: Table 5A.2). And again, these figures are lower for the socially disadvantaged, including SC and ST (World Bank 2012b). Young people's access to education is still largely conditioned by gender, location and socioeconomic status.

Table 6: Percentage of each Cohort that has Completed Education

	2000			2010		
	Male	Female	Total	Male	Female	Total
Primary completed by 15 to 19-year-olds	77	63	70	89	84	87
Lower secondary completed by 20 to 24-year-olds	60	39	49	72	56	64
Upper secondary completed by 25 to 29-year-olds	20	10	15	27	18	22
Tertiary completed by 30 to 34-year-olds	1	0	1	12	8	10

Source: Compiled from World Bank (2012b: Figure 5A.6)

Moreover, even when young people have complete education, their skills remain fairly poor. A recent study by Pratham (2010) found that only 62% of children in grade 4 could read a paragraph, the expected level for grade 1 (cited in World Bank 2012b: Figure 5.11). Thus, another challenge is improve the quality of formal school education in order to improve the basic skills of young people.

Skills Development Opportunities outside the Formal Education System

Outside of the formal education system is a well-established vocational training system, the Craftsman Training Scheme (CTS), established in 1951. The public Industrial Training Institutes (ITI) and private Industrial Training Centers (ITCs), under the Directorate General of Employment and Training (DGE&T) of the Ministry of Labor and Employment, provide pre-employment vocational training as key post lower secondary institutions to train the technical workforce. Under CTS, nation-wide, 8,306 ITIs/ITCs (2140 public ITIs and 6166 private ITCs) in 114 trades in 44 engineering and 24 non-engineering courses offer six months to three years of vocational training for those who have completed 8 to 10 years of schooling. Each state government is responsible for overseeing its ITIs. In total, over 740,000 trainees are enrolled in training courses at ITIs and ITCs.

At ITIs, tuition was free until 2006. Trainees also received fixed monthly stipends based on government norms. Currently, however, students pay Rs.1,200 (approximately US\$21) per month; SC/ST pay Rs. 150 per month, and Other Backward Castes (OBC) pay Rs.50. The majority of trainees are rural males aged 16 to 24, from economically disadvantaged families. Thus, traditionally, CTS has served more of a social policy function, providing skills training opportunities that are alternatives to schooling primarily for economically and/or socially disadvantaged, rather than strengthening the industrial skill base. Among the most popular trades at ITIs are welders, fitters, machinists, auto mechanics, and electricians, because these skills can be used widely across many sectors, and promise high employability⁴.

Despite this orientation, the demand for vocational training has generally been low even among the socially disadvantaged. Both parents and youths prefer general education, partly because it is considered to better prepare students for examinations for the government jobs. Moreover, because of India's traditional hierarchical social structure based on the centuries-old caste system, society has not generally highly appreciated or valued craft and trade skills. Students prefer white-collar jobs in their search for upward mobility. Vocational training has largely been seen as a second-choice option for economically disadvantaged and/or academically less capable. Table 7 shows the choices made by students who completed grade 10 in Karnataka, passing the exams for either the Secondary School Leaving Certificate (SSLC) or the Central Board of Secondary

⁴ Interviews with 15 ITIs in Karnataka, October and November 2012.

Education (CBSE). As the table shows, over 80% of students choose the PUC (pre-university course) track, while less than 10% choose to go to ITIs. This low demand for vocational training is a major challenge for India in strengthening its technical skill base to promote industrial development.

Table 7: Choice of Education Type by Students Passing SSLC/CBSE in Karnataka

	ITI (%)	Diploma (%)	PUC (%)
2003	8.9	5.6	85.5
2004	7.8	5.5	86.6
2005	8.9	5.9	85.2
2006	6.0	5.6	88.4
2007	7.0	6.5	86.5
2008	7.6	8.1	84.3
2009	8.3	8.5	83.2
2010	9.4	9.1	81.6
2011	8.7	9.7	81.6

Source: Compiled from data obtained from the Government of Karnataka (2012)

Notes: SSLC stands for Secondary School Leaving Certificate and CBSE for Central Board of Secondary Education. PUC stands for the Pre-University Course for those who complete lower secondary education (grade 10) in Karnataka. Students who pass the 10th standard through either SSLC or CBSE can pursue higher education by entering PUC or three-year diploma courses at colleges/polytechnics, or take vocational training at ITIs.

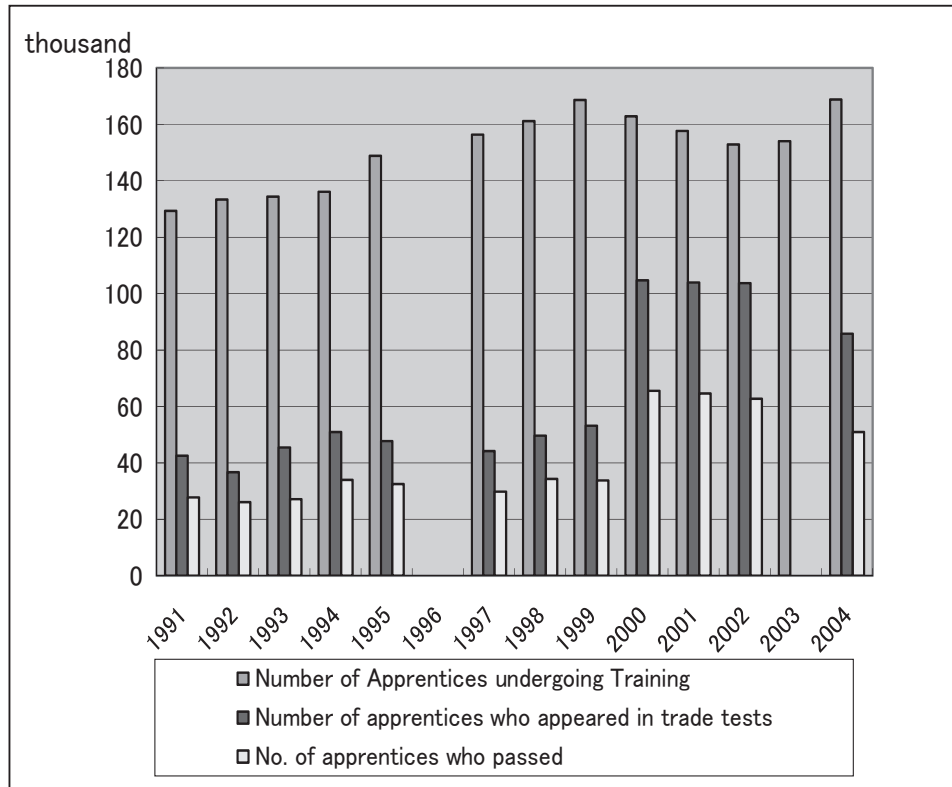
Still, across all of India, only about 2.5 million places are available in vocational training courses, though about 12.8 million persons enter the labor market every year (GOI 2011a). Moreover, given that students need lower secondary education to enter an ITI, there are very few formal vocational training opportunities for young people who have never been to school or who have dropped out during primary or lower secondary education. This leaves more than half of the age group unqualified for ITI training. Thus, without having gained vocational skills, or even basic skills, the majority of young people are likely to find jobs only in the informal sector (see Figure 4). Indeed, at present only 6% of those in the Indian workforce attain any form of vocational training. This results in a huge skills gap in the labor market, in terms of both quality and quantity (GOI 2010). With rapid economic growth raising the demand for skilled workers, it is no surprise that an ILO study reported that 48% of Indian employers find it difficult to fill jobs (FICCI 2012).

Finally, vocational training at ITIs is generally considered ineffective. First, given its vast population, India does not have enough ITIs to accommodate the many new young entrants. Second, ITI training has largely been supply-driven rather than demand-driven. The centrally-fixed and highly-standardized curriculum provides little flexibility to respond to local demands for specific skills or to the structure of local industry and labor markets. Third, vocational training has been slow to respond to industry's changing skills needs. Fourth, limited budgets have meant left facilities and equipment at most ITIs inadequate and outdated. Moreover, the quality of ITCs is mixed. Private ITCs often have smaller campuses and poorer facilities and equipment compared to public ITIs. Fifth, as ITI certification is required only for employment at medium and large firms, the majority of the workers absorbed in the informal sector may find it difficult to get their skills recognized. Finally, unlike East Asian countries, India has had no mechanism for coordinating economic development policy and vocational training, until the 11th 5-year plan (2007-2012).

Apart from the institution-based training at ITIs, India has had a well-institutionalized apprenticeship training scheme (ATS) since 1961 when the government enacted the Apprenticeship Act modeled on the German/Swiss dual system. This scheme provided one-year on-the-job training at large firms for those who completed ITI training (see Okada 2006 for more details). Unlike traditional apprenticeships, those within India's ATS largely take place at large firms, as the act made it mandatory for both public and private firms to accept a fixed number of apprentices every year based on the size of their workforce. During apprenticeship training, establishments pay stipends of Rs. 820 (US\$14.40) to Rs. 1,230 (US\$21.30) per month to each apprentice⁵.

However, access to these apprenticeships is very limited. To participate, a student must have completed the CTS (one to three years of formal vocational training at an ITI/ITC), after completing 8 to 10 years of formal education. Moreover, in reality, fewer and fewer firms have been accepting apprentices under ATS, as private firms have become reluctant to do so. Moreover, while official skills certification can be obtained from the National Council for Vocational Training (NCVT), the passing rate for ATS is low (see Figure 4). Thus, the government is currently planning to remodel the apprenticeship scheme.

⁵ When firms have under 500 employees, they and the state government share the cost of training.

Figure 4: Trends in Apprenticeship in India

Source: Data from the DGE&T, Ministry of Labor and Employment (2008).

As in many other countries, the governance of India's vocational training system has been complex. Until recently, the Ministry of Human Resource Development (MHRD), which is responsible for formal education, was only slightly involved in TVET. In addition to the Directorate General of Employment and Training, more than 17 ministries/ departments of the Indian government, along with their related agencies, provide and/ or sponsor formal/non-formal TVET programs for specific groups, covering about 2.5 million people annually (GOI 2011). However, these TVET programs vary in many ways, including duration, target groups, entry qualifications, testing and certification, and curriculum. The result is overlap and duplication, and little unified recognition of qualifications and equivalence. In recent years, however, private training firms such as NIIT have been offering a wide range of IT-related training courses, providing young people with practical and general skills that are in high demand in the labor market.

Enterprise-Based Training

While evidence is limited, little formal in-firm training occurs in India, partly

because most firms are small and operate in the informal sector. However, some private leading firms, such as Tata Motors and Bosch, have their own training institutes, with state-of-the-art training facilities and excellent training programs for their employees. Some multinational firms that have entered India more recently, such as Toyota, also set up their own training institutes, which offer excellent training, mainly for those who work for the firm after they complete training. Not only do these enterprise-based training institutes provide higher quality training that is closely related to the job, they also provide opportunities for trainees to be hired as employees afterwards. However, generally, there is very little enterprise-based training in the formal sector of the economy. Only 17% of manufacturing firms in India provide any training for employees (Asian Development Bank 2008: Figure A5.5).

Recent Development in Skills Development for the Youth

Drawing on data collected in several rounds of fieldwork conducted in India, this section discusses recent changes in the policy, institutional frameworks, and practices at national, regional, and institutional levels.

Reframing the National System of Skills Development

Recently, India has finally become serious about skills development, introducing a series of education and training reforms. Its 11th 5-year Development Plan (2007—2012) focused on skills development as a priority issue for the first time (GOI 2008b). The prime minister's Independence Day speech of 2006 emphasized the need for a vocational education mission. In his Independence Day speech of 2007 he announced that 1,600 new ITIs and polytechnics, 10,000 new vocational schools and 50,000 new skill development centers would be established to provide access to vocational training for over 10 million students (GOI 2011a). In addition, in his budget speech of 2007, the finance minister described the emerging shortages of skilled workforce in many sectors (GOI 2011a). These political commitments from the top leadership of the central government have raised awareness among the line ministries that they must expand TVET programs “to take advantage of the demographic dividend of the country and to fulfill the aspirations and right of the youth to gainful employment and contribute to national productivity” (GOI 2011a, p.1). These speeches have generated a momentum for skills development, and a strong sense of urgency among government officials, industry, and educationalists.

In 2009, India's government announced its first skills development policy and set up a new institutional framework involving close coordination among government, industry, and training institutions to facilitate skills development efforts at the central level. First, it set up the Prime Minister's National Skills Development Council (NSDC) to coordinate various schemes provided by various ministries. The Office of the Advisor to Prime Minister for Skills Development serves as an apex coordinating body and as a secretariat

for the NSDC. Second, the National Skills Development Board (NSDB) was set up under the Planning Commission to coordinate 17 relevant ministries. Third, the National Skill Development Corporation (NSDC) was created, operating as a public-private partnership (PPP) involving industry associations and industry representatives to upgrade training institutions and deliver vocational training. Fourth, Sector Skills Councils have been set up for about two dozen sub-sectors involving various interested industrial associations to identify skills gaps and enhance skills training in each sub-sector. These organizations are responsible for developing policies, setting priorities and strategies, and overseeing and coordinating the various stakeholder initiatives and efforts. These Councils also try to involve employers more in establishing skills standards and assessing training performance. The creation of the NCSD in charge of skills development directly under the Prime Minister's Office helped show that the government was seriously committed to promoting skills development and raising awareness about skills development among policymakers, industry leaders, training institutions, and the general public. Also, it has made it easier to coordinate among various line ministries and concerned agencies. This new national-level institutional framework has changed the way TVET is governed in India.

Moreover, in 2010, the first national manufacturing policy was issued, with emphasis on skills development as a strategy to strengthen India's manufacturing. Indeed, it emphasized skills development for minimally-educated workers in the unorganized sector, and proposed a Modular Employable Skills (MES) scheme under DGE&T. Unlike ATS, under the MES scheme, ITIs and anyone with relevant experience can offer short-term courses (often two weeks) primarily for workers in the unorganized sector with five years of schooling, to minimize the opportunity cost of being away from work. The relevant industry designs the courses to include the necessary skills. After completing their training, the Regional Director of Apprenticeship Training awards the MES trainees a certificate for the skills they have learned. This ensures that their skills are portable and will be recognized by the appropriate industry in India or even abroad⁶. However, MES is currently offered on a limited scale. It will take a more formalized and institutionalized format to implement courses to enhance public awareness and recognition of the skills certified under the scheme and to improve access to the MES among workers in the unorganized sector.

And recently, the government, in consultation with education ministers from 12 states, introduced a National Vocational Education Qualifications Framework (NVEQF) providing guidelines for a nationally-recognized qualification system, to standardize training contents, set national standards, and recognize the skills learned at schools, vocational training institutes, and higher education institutions. The development of NVEQF has led to a closer partnership and collaboration of government with industry to

⁶ For example, courses in plumbing are popular among people wishing to work in the Middle East and Australia.

develop courses, curriculum, assessment, certification, and placement. Also, to improve the quality of training, the government introduced the concepts of competency-based training and training modules. These have changed the basis for certifying vocational training from duration to competence. Now individuals can have their skills recognized regardless of their educational and employment paths.

India is experiencing an acute sense of urgency, given its serious shortage of skilled labor in the face of the potential “demographic dividend,” the need to sustain rapid economic growth, and an interest in making its young skilled workforce “exportable” to global labor markets. Some advanced countries, especially Australia and Western European countries, are keenly interested in India’s potential skilled labor, and have started offering attractive incentives and generous support to India’s TVET and higher education sectors. Such external support and pressure has helped the Indian government make institutional reforms.

Moreover, the private sector, particularly key industrial associations such as the Confederation of Indian Industries (CII), and the Federation of Indian Chambers of Commerce and Industry (FICCI), have played key roles in increasing public awareness about skills development--organizing workshops and seminars and lobbying the government to promote institutional reforms. These associations are now represented and actively participate in various committees of tertiary and training institutions as well as national boards. Industry has also felt an urgent need to promote skills development given their frequent problems in finding workers with adequate skills. Thus, they have also demanded a well-designed skills development system with greater involvement on the part of the private sector.

Under the current 12th Five-year Plan (2012—2017), the government emphasizes skills development even more ambitiously as a priority agenda item. Projecting that by 2022, India’s working-age population will reach 700 million, of whom, 500 million will need to be skilled, the government set a national target of skilling 500 million people by then, allocating increased budgets for skills development. Thus, it ambitiously plans to increase the capacity of training institutions to 15 million (currently 2.5 million), by setting up more ITIs, encouraging the private sector to engage in vocational training, and expanding tertiary education (GOI, 2009).

State-level Initiatives: Experience in Karnataka

Reflecting the central government’s growing interest in and commitment to skills development, the various state governments have also recently accelerated their efforts in that direction. The experience of Karnataka, one of the most industrially and educationally advanced states, is of interest.

To expand access to skills development for less advantaged social groups, the Karnataka government formulated a well-defined affirmative action program. This scheme tries to improve access to skills development at ITIs for women, disadvantaged groups

(SC, ST, and OBCs), minorities, the disabled, and economically challenged people. In Karnataka, 50% of students may be selected on the basis of general merit, and the other 50% are reserved (15% for SC; 3% for ST; and 32% for OBCs). One third of the total seats must be reserved for women, and 3% for the physically disabled. Moreover, though general-merit trainees now pay tuition of Rs.1,200 per year, SC/ST trainees are fully reimbursed. These arrangements have improved their access to training at ITIs. In fact, many ITIs in Karnataka accept more students from these groups than their quotas require.

Still, the shortage of instructors is seriously affecting the quality of training. Given budget constraints, ITIs are always short of regular qualified instructors. A widespread practice is to hire temporary instructors on a short-term basis, rather than permanently filling vacant positions. These instructors are less qualified, as the ITIs often cannot attract qualified people given the poor pay they can offer. This practice also leads to a lack of continuity in teaching, and low quality. Moreover, infrastructure, facilities, and equipment are often outdated and inadequate, seriously affecting the quality of teaching, despite some efforts to modernize and upgrade.

In 2012, the Government of Karnataka, one of India's largest IT hubs, introduced a system of on-line admission throughout the state. As the system allows applicants to choose courses offered at ITIs in any location, this system has improved matching between demand for and supply of training courses in specialized trades.

Innovative Reforms at Training Institutes

Reflecting the changing policy environment for skills development, training institutions have recently introduced several new initiatives. Supported by the World Bank, the government selected 500 ITIs as Centers of Excellence (COE) to offer “advanced module” training, and upgrade their facilities, equipment, and machinery to the same standard used in industry. Under the COE scheme, each ITI must establish an institute management committee (IMC) of 8 to 10 members. The IMC chair is selected from the private sector, often from a leading local private firm, and has power to approve major decisions about the ITI's management. Operating as a public-private partnership, the IMC is expected to forge partnerships between ITIs and the private sector to: share labor market information, especially on the types of skills in demand; develop curriculum; and seek donations of equipment and tools from the private sector to upgrade ITI facilities and equipment. Also, the creation of IMCs has increased industry participation in decision-making around the ITIs, to greater autonomy for ITIs, more channels to send trainees for internships, and improved facilities through more donations from industry. These closer linkages with employers and increased autonomy may help ITIs meet industry demands. In fact, COE courses achieved close to 100% job placements of their trainees at many ITIs.

Recognizing the importance of involving industry, some ITIs recently created partnerships with leading firms such as Toyota, Tata Motors, and Suzuki to offer training

courses to cater to the firm. For example, four ITIs in Karnataka offer a Motor Mechanic Tool and Maintenance (MMTM) course jointly with Toyota located in Bangalore. The curriculum follows NCVT norms, but Toyota decides on the topics to cover in the syllabus so it can teach firm-specific skills. Toyota takes all the students in their second year as apprentices and places them at its dealers. The courses enjoy 100% placement rates as all the trainees who pass all the requirements are placed as regular employees at Toyota dealerships on the completion of training. This tailor-made arrangement in close collaboration with particular firms has helped make training more relevant, better able to respond to industry needs, and has significantly improved placement rates. Many ITIs are keen to work with leading firms to create such firm-specific courses and to increase opportunities for both apprenticeships and instructors' training with these firms.

Conclusion

This paper has examined the opportunities for Indian young people to develop their skills, and the constraints that challenge them. Today, India faces complex and enormous challenges in fostering skills development for youths, for several reasons: the size of the youth population, and the hierarchical and segmented nature of both the labor market and society as a whole. Indeed, Indian young people fall into two main groups. A tiny fraction from economically well-off middle classes get good education and training and well-paid jobs in the organized sector. Meanwhile, the great majority of youth from economically and socially disadvantaged groups get very limited education and little access to vocational training. They work in the unorganized sector. The majority of Indian youth enter the labor market without adequate vocational skills, leading to unstable, informal, low-wage employment, such as casual labor and various forms of self-employment.

In India, the bulk of employment is in rural areas and in the unorganized sector, and almost all manufacturing firms are in the informal sector. Given the highly-stratified and segmented nature of the labor market, Indian youths must acquire education, training, and skills if they are to find decent jobs and experience any social mobility. Thus, with rapid economic growth, demand for education is likely to grow further at all levels in coming years. However, access to education, training, and employment opportunities is still largely determined by youth's socioeconomic backgrounds, gender, and geographic locations.

Despite its projected "demographic dividend" and its recent expansion of formal education at all levels, India suffers from a serious shortage of skilled workers: limited access to education and skills training, high rates of school dropout, and large mismatches in the labor market. Indeed, despite the well-known success story of the Indian software engineers, educational attainment among Indian young people remains very low on average, only 7.1 years. Though enrollment rates have increased, dropout rates remain very high in primary and secondary education. Obviously, this lack of skills creates serious constraints on the production and innovation capabilities of Indian industries, and

their competitiveness in the global economy. With most firms in the informal sector, and a minimally-educated workforce, how can the country develop its manufacturing industries to meet global standards and then move them to high value-added sectors and make them more innovative?

This paper has identified an enormous skills gap in India between what industries demand based on recent rapid economic growth and the skills that young people acquire through vocational training. For more than a half century, well-institutionalized public vocational education and training systems have been in place both within and outside the formal education system. But they are not large enough to accommodate many school graduates, and they have not been able to provide young people with the vocational skills that industries need. Thus, youths' access to vocational training continues to be limited.

However, the Indian government has recently embarked on a drastic reform of its training policy, intensifying its efforts to increase the number of skilled workers. It has formulated National Skills Development Policy and National Manufacturing Policy; set up a new institutional framework to accelerate and coordinate skills development efforts, and developed the National Vocational Education Qualification Framework (NCEQF). Training institutes now have more autonomy and private-sector involvement, and have improved their governance and curriculum. These changes are too recent to examine the effects on training outcomes. But it will be interesting to see how these reforms improve access to and demand for vocational training among youths as well as the outcomes of training.

Based on the discussion above, some suggestions for policy may be offered here. First, for India to promote industrial development and achieve sustainable growth, it must increase its investment in education and training for youth. In particular, to move further into a knowledge-based economy and move up the value chain, it is indispensable for India to improve the quality of education at every level. Second, the focus of India's skills development system does not correspond to either the level of skills demanded by industry or the overall levels of education of most young people. Thus, the government must ensure that most young people at least finish lower secondary school (i.e., 10th grade). Third, to open training opportunities for youths who have not completed secondary education, it would be helpful to create more courses at ITIs with lower levels of educational requirements. Fourth, training for the informal sector needs to be strengthened. Generally, it is difficult to reorient formal training institutions toward the informal sector (Johansson & Adams 2004). Given the vast size of the informal sector, however, it is critically important to institutionalize some training for work in the informal sector. Rather than the current somewhat ad-hoc delivery of training such as the MES, more institutionalized and structured settings may help offer more effective and streamlined training for the informal sector.

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