9 Workforce development and skill formation in India

Shortage amidst surplus

Debashish Bhattacherjee and Errol D'Souza

Introduction

India gained independence, after two centuries of colonial rule, in August 1947. The first prime minister, Jawaharlal Nehru, favoured import substitution and the public sector as economic policy. Capital was deemed to be scarce and a system of controls over the private sector was instituted with industrial licensing being one of the principal instruments. The three important licensing policies that were introduced were capacity licensing, monopoly control and reserving products for small-scale industry. Under the Industrial (Disputes and Regulation) Act of 1951, firms had to seek licenses to set up, expand, relocate, or introduce a new product. Under the Monopolies and Restrictive Trade Practices Act of 1969, firms with assets over a certain threshold or with a dominant market share had to obtain clearances before entering a line of production or expanding. Selected products were to be exclusively produced by small-scale industry and these were expected to generate large employment opportunities due to their labour intensity. Labour regulations were complex with significant restrictions on retrenchment. Chapter VB of the Industrial Disputes Act requires units employing more than 100 workers to seek authorization from the government for retrenchment and lay-off and obtaining consent for this was rare. This made labour akin to a quasi-fixed factor of production and to circumvent the laws, industry often set up multiple plants, preferred using contract and casual labour over permanent labour, and chose capital intensive production techniques.

Job security regulations ought to have provided a stable employment relationship with minimum conflict regarding the possibility of job losses. Such an industrial relations climate usually translates into higher firm productivity and an incentive to invest in skills. However, anti-retrenchment laws turned out to be protectionist and did not support economic progress as workers sought to capture rents associated with high firing costs (D'Souza 2010). With entrenched insiders, firms were reluctant to invest in training and labour intensive industries migrated into the informal sector and the controlled small-scale sector. Firms in the formal or organized sector[1] sought a non-permanent workforce and invested in capital-intensive plants that required skilled employees like engineers and managers. Indian labour laws place no limitation on firing managers at the same time as

they protect workers. Organized manufacturing thus hired skilled employees and shunned labour intensive processes and the type of workers that accompany such organizations.

While economic policy emphasized anti-monopoly laws and small-scale firms, public policy prioritized higher education over basic education which created skilled engineers and managers (Kochhar *et al.* 2006). Weiner (1991) argued that Indian policy emphasized higher education at the expense of primary education. Top-class tertiary level institutions were established in the country including the renowned institutes of technology and management. The success of India's recent economic growth is attributable to the presence of tertiary education and not mass education. India is one of the top producers of students in the global top 10 per cent, with about 100,000 students a year in that category compared to 250,000 by the US and 118,000 by Korea.[2] However, it does not have high-school educated labour with basic literacy and numerical skills. This is the dichotomy of skills in India – it has a surplus of labour but with its emphasis on elite education it has a shortage of skilled workers.

The structure of this chapter is as follows. In the next section, we briefly describe the national context focusing on structural economic change and its effects on labour markets. We then describe various institutional structures that define and comprise the education and skill formation processes in the economy. In the following three sections, we examine in detail the training of managers, professional and technical staff, and production and white-collar workers. We then analyse and critique the system. Finally, the conclusion summarizes our main findings.

The national context

India is a subcontinent with the seventh largest land area among all countries with 3,287,263 km^2. The population in 2011 was 1.21 billion and the population has been growing at an annual rate of 1.6 per cent in the last decade with a current urbanization rate of 31.2 per cent. The economy was predominantly agricultural at the time of independence. It then bypassed the stage of labour intensive industrialization and emerged into a services economy with this sector accounting for 65.6 per cent of GDP by 2010–11. Despite the share of agriculture declining over the past 60 years, it still employs 57 per cent of the labour force, whereas the share of GDP coming from agriculture is 14.4 per cent. Services employ 31 per cent of the labour force, 12 per cent is employed by industry which has a share in GDP of 20 per cent. The inability of the economy to shift labour from agriculture into industry and services is linked to the low emphasis placed on primary and secondary education and the neglect of skills training.

The obsession with controls, the small-scale sector and high costs associated with retrenching labour ensured that manufacturing never gained momentum as a growth engine. The share of agriculture and allied activities in GDP declined from 55.8 per cent in 1950–1 to 14.4 per cent in 2010–11. This steep decline of 41.4 per cent of GDP during the 60-year period was accompanied by the share

of manufacturing increasing from 8.9 per cent of GDP in 1950–1 to just 15.8 per cent of GDP by 2010–11. As agriculture declined in importance, the economy skipped the stage of manufacturing growth and transformed into a services economy. Significantly, controls resulted in a manufacturing sector where 87 per cent of manufacturing employment in India was in micro-enterprises with less than ten employees, which is a smallness of scale that is unmatched amongst emerging markets and advanced economies (OECD 2007). The closest comparison is Korea where 42 per cent of manufacturing employment is in micro-enterprises.

The GDP per capita of India is US$1,320.50 which classifies it as a lower middle income country in the World Development Indicators. The UN Human Development Reports indicate a decline in inequality over time with the Gini coefficient being 42 for the period 1975–88 and declining to 36.8 for the period 2000–11. However, the inequality calculated from the government's National Sample Survey (NSS) shows that the coefficient which was 33.7 in 1983–4 increased to 37.6 by 2004–5 (Sarkar and Mehta 2010). The coefficients up until 1993–4 were fairly stable and there has been a pervasive increase in inequality since then (Deaton and Dreze 2002).

Economic growth has improved considerably since 1991, with real GDP growth averaging 7.2 per cent per year in the last decade. The growth of GDP in the first three decades after independence until 1980 was a disappointing 3.5 per cent (Rodrik and Subramanian 2005) and was the second lowest in the world after sub-Saharan Africa. Since 1980 the growth rate doubled and exceeded that of all other regions except East Asia. This is attributed to a shift in the government's attitude in 1980 in favour of private business and a shift away from the socialist policies that were existent till then. The attitudinal change was due to a calculation to mobilize political support and did not stem from a goal of enhancing economic efficiency (Rodrik and Subramanian 2005). This policy shift involved a pro-business rather than a pro-market orientation, favouring producers by easing restrictions on capacity expansion, removing price controls, and reducing corporate taxes. Pro-market policies that remove impediments to markets such as trade liberalization were introduced more than a decade later, after 1991.

The main source of growth in the past two decades has been services where educational requirements are higher than the rest of the economy (Bosworth and Maertens 2010; Ghani 2010;). On average, the years of schooling are 68 per cent higher in the service sector than for the economy as a whole. The average years of schooling in the service sector for employed persons is 7.9 whilst it is 3.2 in agriculture and 5.2 in industry. In modern service industries such as financial intermediation, real estate and business, and public administration, higher levels of education are a prerequisite to apply for a job. India has a 'small minority of persons with unusually high levels of schooling' (Bosworth and Maertens 2010: 128) and the low availability of such workers has contributed to the expansion of business and other services. However, the relative scarcity of such skilled persons is reflected in an increasing wage premium for secondary-level certificate and

Table 9.1 Context – India

Population (2011)[1]	1,210.19 million
Population growth rate, %[1]	1.6
Urban population as a proportion of total population (2011)[1]	31.2%
Active labour force (2007–8)[2]	471.7 million
Participation rates (2007–8)[2]	
Total	41.3%
Male	56.3%
Female	25.4%
Labour force by broad category (2007–8)[2]	
Agriculture	57.2%
Industry	12.3%
Services	30.5%
GDP per capita (2010–11)[3]	US$1,320.50
Income inequality – Gini Coefficient (2011)[4]	36.8
Real GDP growth (%)[3]	
1991–2000	5.6
2001–10	7.2
School life expectancy – primary to tertiary (2011)[4]	10.3 years
Education expenditure as % of GDP (2006–9)[4]	4.2
Mean years of schooling of adults (2007–8)[5]	5.5 years
Combined gross enrolment ratio in education (both sexes) (2011)[4]	62.6%
Educational enrolments,[a] all and vocational (2006) (in '000s)[4]	47,523
ISCED 2 total	678
ISCED 2 vocational	33,526
ISCED 3 total	32
ISCED 3 vocational	522
ISCED 4 total	93
ISCED 4 vocational	11,295
ISCED 5/6 total	88
ISCED 5/6 vocational	
Total number of students enrolled for graduate degrees – science and technology[b] fields (2010)[6]	4,077,954 31.8% of all enrolments for graduate degrees
Education attainment levels, 2009 (% of population aged 25 and over)	not available
Literacy (2011)[1]	
Total	74.1%
Male	82.1%
Female	65.5%

Sources: 1. Census of India (2011: 1(a): decadal population growth rate, 2001–2011). 2. National Sample Survey (2008). 3. Reserve Bank of India (2011). 4. UNDP (2011). 5. National Sample Survey (2008a: Statement no. 10.1, Chapter 3). 6. MHRD (2011a).

Notes

a Figures are enrolments excluding open university students.

b Technology is inclusive of engineering, technology, architecture and design students.

university-level graduates (Bosworth *et al.* 2007). These wage premiums are indicative of a worrying aspect of the recent growth that is associated with the demand for educated and skilled workers increasing faster than the supply. They indicate that high growth associated with the high productivity elements of the services sector is not in a position to generate employment commensurate with the growth of the labour force. Most of the labour force remains in the low productivity agriculture sector. India's recent growth is attributable to high-skill services which are constrained by the low average educational attainment of the workforce.

A striking feature of labour market participation in India is that it has generally averaged around 41 to 42 per cent of the workforce for the last 30 years. For males it has been around 53 to 56 per cent and for females it has been around 25 to 30 per cent over this period. The variation in female labour force participation is higher as females enter the labour force when they are required to sustain household incomes whenever wages of male heads of households decline, i.e. the 'added worker effect' (Mahendra Dev 2008). Workforce participation rates may decline as individuals begin to acquire human capital that is increasingly becoming an important prerequisite for labour market participation. The demographic bulge is currently taking place in the 15 to 29 age group and thus India has the world's youngest workforce with a median age of 24 in the year 2000, far lower than 30 in China (Planning Commission of India 2008). There has been a decline in the dependency ratio (ratio of dependents to working age population) from 0.8 in 1991 to 0.7 in 2001 and it is estimated that the dependency ratio was 0.59 in 2011. This decline in dependency is unlike the situation in China and industrialized countries where the dependency ratio is rising. The government realizes that harnessing this 'demographic dividend' would require emphasizing skill development of the labour force without which India would be 'facing a demographic nightmare' (Planning Commission of India 2008: 91).

Education and skill formation

The Indian constitution has made the provision of elementary education the responsibility of the state. Article 21 of the constitution states that education is a fundamental right and Article 21A declares that the state shall provide free and compulsory education to all children in the six to 14 age group. Despite this, the Right of Children to Free and Compulsory Education Act 2009 came into force after 60 years of the constitution, from April 2010. School education has simply been unavailable for large numbers of children. Thirteen per cent of habitations have no schools at the primary level and as many as 20 per cent of children in the school-going age are out of school (Dubey 2010; IAMR and Planning Commission of India 2011). The private sector has been unable to meet the demand for school education with 89.1 per cent of primary schools in the public sector.[3] With private schools unable to fill the gap even after 60 years of independence, universalizing elementary education has to be the responsibility of government schools. The government's Tenth Five Year Plan (2002–7) had laid down uni-

versal enrolment as one of the guiding principles of universalization of elementary education. As a result, the *Sarva Shiksha Abhiyan* (SSA, 'Education for All') was a major scheme launched in 2002 with the specific objective of universal enrolment. Schools got grants under this scheme for new classrooms, maintenance and teacher learning materials. The SSA was merged with the Right to Education Act in April 2010. Despite the SSA, one-fifth of children are out of school, but the scheme did result in the gross enrolment ratio (GER) improving at all education levels. The GER from Class I to Class VIII was 100 per cent and from Class I to XII it was 81.9 per cent (Government of India 2010). However, in India enrolment is an unreliable figure for measuring access to education. Figures for dropout and attendance amongst those who enrolled provide a better account of the spread of school education. Attendance has been found to be at least 25 per cent below enrolment (Dubey 2010). Dropout rates are also excessively high: for the country as a whole, the dropout rate from Class I to X was 56.7 per cent (Government of India 2010).

The major reasons for high dropout rates are the lack of interest on the part of parents and children, and financial constraints. Financial constraint was the major factor cited for dropping out according to NSS data.[4] As far back as 1966, the government had set up an education commission that suggested that 6 per cent of GDP be spent on education, considered to be a priority for a developing country. The total public expenditure on education only recently exceeded the 4 per cent mark in 2007–8, and the proportion of GDP spent on education is less than that in sub-Saharan Africa. Expenses on education such as books and stationery, travel to school, and other fees are also considerable. According to the NSS in 2007–8, the average annual expenditure for students who attend school in the five to 29 age group was INR 2,461[5] which is about 7.5 per cent of the per capita disposable income in that year. In a country where 53.7 per cent of the population is in multi-dimensional poverty and 28.6 per cent in severe poverty this is a large expenditure that is difficult for families to incur (UNDP 2011, see Table 5).

The lack of interest in schooling is attributed to the poor quality and quantity of school infrastructure and the poor quality of instruction including the irrelevance of the curriculum (Tilak 2006). In 2007–8, the average number of classrooms for all schools was just 4.3 and around 9 per cent of schools were one-classroom schools. Having different class levels all in the same classroom makes it difficult to ensure that the appropriate instruction is geared to the learning needs of children at each level. Poor quality classrooms are a matter of disquiet with 30 per cent of primary schools requiring repairs with leaking roofs and poor sanitation (IAMR and Planning Commission 2011: Chapter 6). Thirteen per cent of schools do not have drinking water facilities and half the schools do not have a separate toilet for girls which makes parents reluctant to send them. The pupil–teacher ratios in primary schools are very high, adversely affecting learning outcomes – at 47 it is amongst the highest in the world. The shortage of teachers led to the SSA recruiting 10.2 million schoolteachers since the programme began in 2002 until the end of 2010 (IAMR and Planning

Commission 2011: Table 6.21). Finally, it is not just teacher shortages but also teacher absenteeism that is severe. In surprise visits to schools it was found that 25 per cent of teachers were missing (Rogers and Vegas 2009). Other surveys find that of the teachers present in school, only half are teaching (Ramachandran *et al.* 2005). The essential problem with the quality of education has been focused on by *Pratham*, a non-governmental organization, in their inter-state district-level surveys in order to evaluate basic reading and mathematical competencies. According to their 2007 survey, 40 per cent of children aged seven to 14 could not read a small paragraph with short sentences, and 66 per cent could not divide a three digit number by a one digit number.

India's education system has a primary and upper primary stage that consists of eight years of education.[6] Subsequent to this there is a secondary and higher secondary stage each of which consists of two years of education. At the higher secondary stage (after ten years of education), there are two study streams available to students – general academic and vocational education. The Vocational Education Programme at the higher secondary stage was set up with the goal of preparing students for the world of work and is overseen by the Ministry of Human Resource Development (MHRD). This vocationalization of secondary education was introduced in 1988 and currently runs in 6,800 schools (about 11.5 per cent of higher secondary schools in the country) with an annual enrolment of 400,000 students (4.6 per cent of students enrolling for studies at the beginning of the higher secondary stage) which is less than the intake capacity of 500,000 students. Courses are offered mainly in government schools in the agriculture, business and commerce, engineering and technology, health, paramedical, home science, and humanities disciplines. At the end of the two-year course, students are given a senior secondary-level certificate. After completion of the course, the student has the option of going on for one year of apprenticeship training, though this option is available to only a few students.

The secondary school system is mainly run by state governments. However, there are parts of this schooling that are controlled by central governments, one such being the National Institute of Open Schooling (NIOS) that has been conducting vocational courses offered through 3,300 study centres since 1993. The target group of NIOS vocational courses are individuals belonging to the marginalized sections of society such as rural youth and scheduled castes and tribes.[7] The NIOS offers about 80 vocational courses in various streams and has also introduced online courses. There are some opportunities for those who complete vocational education at higher secondary level to continue studies and obtain a diploma or, occasionally, a degree in commerce, home science, agriculture or the humanities. In 1994–5, the University Grants Commission (UGC) introduced a Career Oriented Programme which is in the form of additional elective courses that focus on job skills to be taken along with the conventional arts, science and commerce degrees. On completing these elective vocational courses, students obtain, in addition to the degree, a certificate or diploma.

Vocational training in India refers to crafts training that is certified and which takes students who leave school after completing at the very least eighth grade.

These are managed by the Director General of Employment and Training (DGET), part of the Ministry of Labour and Employment, under two key schemes – the Craftsmen Training Scheme (CTS) and the Apprenticeship Training Scheme (ATS). The DGET is the prime department that notifies standards, carries out trade testing and takes care of certification, and formulates policies for vocational training. At the state level, it is the State Directorate of Technical Education and Industrial Training that decides on programmes involving industrial training under the CTS. These schemes cater to those who have completed the eighth grade and provide pre-employment training to those who will eventually become self-employed or join the shop floor in organized industry.

The Industrial Training Institutes (ITIs) are government-funded institutes for craftsmen training and the Industrial Training Centres (ITCs) are self-financed. In addition, craftsmen training for instructors are provided in 22 trades at five Advanced Training Institutes and one Central Training Institute, managed by the DGET.[8] The International Labour Organization (ILO) study (2003) assessed the ITIs/ITCs in three states and found that ITCs retain more students and have more favourable student–teacher ratios compared to ITIs. The employment of graduates from these institutions was found to be very low – for instance, 23 per cent of ITI graduates and 27 per cent of ITC graduates in the industrialized state of Maharashtra were unemployed.

The ATS makes it mandatory for employers in government and private establishments to have the requisite training infrastructure to engage apprentices in 254 groups of industries that are included in the Apprentices Act of 1961. Training is provided in 188 trades and varies from six months to four years. All India Trade Tests are conducted biannually by the National Council of Vocational Training, and National Apprenticeship Certificates awarded which are recognized for employment purposes. Realizing that skill upgrading is at the heart of sustaining economic growth, the Finance Minister announced the upgrading of 500 ITIs into Centres of Excellence in the 2005–6 budget speech. This upgrading was aimed at introducing multi-skilling courses that involved a year of broad-based training followed by specialized modular courses based on an industry-wide cluster approach involving public–private partnerships. In the 2007–8 budget, this was taken further with 1,396 ITIs being targeted for being turned into Centres of Excellence through the public–private partnership mode. Currently the DGET has decided to set up 1,500 ITIs and 5,000 skill development centres in areas where such institutions do not exist. The state governments are to provide land, the central government will provide some funding, and private partners are to build the facilities and operate them for a period of time before transferring them to the government.

There are 2,324 polytechnics offering three-year diploma courses with the requirement that entrants into the programme have completed the tenth grade or secondary education. About half the polytechnics have been established through private initiatives having a capacity of about 300,000 students. A system of Community Polytechnics was also introduced since 2000 to provide for the transfer of appropriate technologies to rural and local communities with skill development programmes.

Apart from the MHRD and the Ministry of Labour and Employment there are various types of vocational training programmes that are conducted by other ministries. For instance, the Ministry of Micro, Small and Medium Enterprises has three national entrepreneurship development institutes. In addition, the same ministry has several training programmes under the National Small Industries Corporation, the Central Footwear Training Centres, the Fragrance and Flavour Development Centre, Process cum Product Development Centre, Electronics Service and Training Centre, and the Institute for Design of Electrical Measuring Instruments.

Recognizing the severity of the problem of skill shortage, the government has recently set up three apex bodies to examine various policy options that will arrange for having 500 million skilled people by 2022. These bodies are the Prime Minister's National Council on Skill Development, the National Skill Development Coordination Board and the National Skill Development Corporation (NSDC). Policymakers have realized that India does not have the training and education infrastructure that can take advantage of its demographic dividend. Skill shortages are due to inefficiencies due to an inadequate educational system that does not have curricula that are applicable to real world problems (Srivastava 2008). The Manpower Group in its Talent Shortage Survey Results for 2011[9] reports India to be the second country after Japan where employers are experiencing difficulties in filling positions due to a lack of available talent. Whereas in Japan the increased difficulty was just 4 per cent since the previous year, in India the difficulty increased by 51 per cent. The top ten hardest jobs to fill in India were, in order of greatest difficulty to lowest: researchers (R&D), sales managers, IT staff, accounting and finance staff, engineers, IT and project managers, sales representatives, marketing and public relations staff, doctors and non-nursing health professionals, and labourers. There is a large overlap between these positions and the high priority sectors identified by the government where job openings will be prevalent in India in the next few years (see Table 9.2).

The training of managers

One of the most sought after degrees after graduation is the coveted MBA or the PGDM (Post Graduate Diploma in Management) from one of the premier Indian Institutes of Managements (IIM).[10] A nationwide Common Admission Test (CAT) is carried out online during October and November annually for admission into the two-year residential programme at these institutes. Entry into these programmes is highly competitive: in 2011, around 185,000 graduates applied for the CAT, out of which at most 9,000 will be called for an interview by at least one of these institutes, from which only around 3,000 will be offered admission.[11] Typically, the students who get in are engineering graduates with about three to four years of industrial work experience. Around 80 per cent of all IIM graduates accept jobs with multinationals, with the financial and consultancy sectors being the most sought after, and they all follow a career trajectory that is designed to propel them into the upper echelons of management (Deb and

Table 9.2 High priority employment growth sectors identified by the Planning Commission

1	Automobiles and auto components
2	Banking, insurance and financial services
3	Building and construction industry
4	Chemicals and pharmaceuticals
5	Construction materials and building hardware
6	Educational and skill development services
7	Electronics hardware
8	Food processing, cold chain, and refrigeration
9	Furniture and furnishings
10	Gems and jewellery
11	Healthcare services
12	ITES or business process outsourcing
13	IT or software services
14	Leather and leather goods
15	Media, entertainment, broadcasting, content creation, and animation
16	Organized retail
17	Real estate services
18	Textiles, apparel and garments
19	Tourism, hospitality and travel trade
20	Transportation, logistics, warehousing and packaging

Source: Planning Commission of India (2010).

Palety 2003). Since 2000, several job offers during final placements are at international locations (like Hong Kong, Singapore, New York, London and Sydney) and most of these are in the financial sector.

The structure of this two-year residential MBA programme at these institutes is similar to US business schools. The first year consists of compulsory courses in the various functional areas of management as well as in some social science disciplines. This is followed by a summer internship with domestic or foreign firms from different sectors that come for campus recruitment. In the second year, students choose an array of electives from a wide range of optional courses depending on their interests. This is followed by a final placement. Needless to say, salaries offered to these IIM graduates are high and internationally competitive.

The IIMs are not the only institutes that offer the MBA/PGDM to potential students. Several privately run business schools and state-funded university departments that vary in reputation, history and placement outcomes also offer these programmes. These follow the IIMs in the business school rankings and many of these use the CAT as their screening test for admission. According to the MHRD's Annual Report 2010, as at December 2009, there were 1,698 institutions that offered an MBA or PGDM with a total student intake of about 170,000 (MHRD 2010: 152). Most of these institutions are recognized by the All India Council of Technical Education (AICTE).[12] But there are many privately run institutions that are not recognized by the AICTE; according to one estimate, there are 4,300 institutions with 425,000 potential places (this includes both

recognized and non-recognized institutions offering either an MBA or PGDM).[13] The same survey reported that 40 per cent of these non-recognized schools had no takers and 300 of them closed over the past two years as they were unprofitable. Those institutions that are not in the top 100 business schools have a hard time placing their graduates. The rankings are important: the ratio of the average domestic starting salary of graduates from the top 25 business schools to the next 50 schools is 2:1.[14] Thus, in terms of educational institutions in India that provide general management education, we note a sharp polarization between 'good' and 'bad' business schools. Tuition fees in both these schools are significantly higher relative to other educational streams; however, a key difference between these is that entry probabilities in the good schools are determined exclusively by merit, whereas, in the bad schools it is often the capacity to pay that determines entry. A student who has secured admission in one of the good schools can easily get a bank loan, whereas this may not be so easy for those admitted to the bad schools.

So far we have sketched the taxonomy of educational institutions that provide a formal general management education for students after their first undergraduate degree. In addition to these there are several institutions that train potential managers in specialized domains, such as cost accountancy, hospital management and hotel management, that students can join after their high school examinations. The hotel management schools are also in high demand given the phenomenal employment growth that has taken place in the hospitality sector in India in the last two decades.[15] But in these sectors, graduates typically start off at entry-level non-managerial positions, slowly rising within the organization to managerial positions as a function of their seniority and job performance.

In terms of training provided by firms to its managers, India fares rather poorly relative to other countries. One study that compared a sample of Indian and British firms found that Indian firms on average spent only 1.2 per cent of their payroll expenses on training, whereas comparable British firms spent 5.4 per cent (Yadapadithaya and Stewart,2003). The same study found that the average training hours per employee per year was 4.7 in India whereas in Britain it was 7.3. According to the World Bank database (World Bank 2007), only 15.9 per cent of firms in India in 2006 offered formal training programmes for their permanent full-time employees (not just managers) compared to 67.1 in Brazil (2003), 84.8 in China (2003), 52.2 in Russia (2009), and 36.8 in South Africa (2007). One possible reason for these low Indian figures could be because firms frequently outsource their training needs to business schools that offer an array of executive education programmes (like in other countries).

All the larger and older IIMs offer different kinds of executive education that are called management development programmes. These are typically on specific topics (such as 'Supply Chain Management', 'Industrial Marketing' and 'Negotiating Skills') which can run for a few days to a couple of weeks in duration. These programmes are open to all organizations. Another kind of programme on offer is what are called 'In-Company Programmes' and these are customized modules specific to the organization's requirements. In addition,

there are 'Long Duration Programmes' on offer (6–12 months) that are usually meant for young working managers and are carried out in the evenings through computer-based online distance learning. Finally, there is a one-year intensive residential programme on offer for executives with a minimum of five years of work experience. These managers, usually with eight to nine years' work experience, are often seeking a mid-career change in their expertise. In the last few years, the 'big three' IIMs (at Ahmedabad, Calcutta and Bangalore) have started holding these programmes at locations outside India as well (in the Gulf and in South East Asia). Both the central and the state governments frequently send their senior administrators and managers from government-run public sector enterprises to these institutes in order to update their knowledge of management theories and practices. All these forms of executive training are sources of revenue for the institutes.

Due to the high salaries that MBA graduates from the good business schools command (due to the upward pressure on starting salaries from foreign financial firms), several domestic firms, especially those in the public sector, have been priced out of this market. Increasingly, many firms, especially those in manufacturing and engineering industries, directly recruit from the engineering colleges for their entry-level managerial positions, these recruits rising slowly to middle-level managerial positions over time as defined by internal labour market dynamics that typically characterize these firms. These middle-level managers then find it difficult to rise to senior positions due to their lack of knowledge in various managerial functional domains. It is precisely for this reason that they become key consumers of executive education programmes offered by the well-known business schools.

We end this subsection with a brief discussion on females in managerial positions in India. Although females in India comprise approximately 31 per cent of the official workforce (United Nations 2000), their representation in managerial positions is very low in terms of global standards. Although females comprise around 10 per cent of senior management positions in the Fortune 500 companies, in India their presence is low; perhaps as high as 5.8 per cent (Kulkarni 2002) to a low of 3 per cent (Mehra 2002; Singh 2003) of all administrative positions. In the top business schools in India, their proportion of the class size is usually never more than 10 per cent; in the lower-level schools their proportion is much higher. One reason often cited is that the CAT exam is biased in favour of quantitatively inclined and trained candidates; hence, the overwhelming majority of students in the top business schools come from engineering backgrounds where representation by females is very low.

However, things are changing, albeit slowly. Sections of employers' chambers representing females are working to improve their presence in the overall business environment. All major chambers have such wings.[16] Although underrepresented in finance, production and strategy-formulating functions, females are increasingly entering erstwhile male domains such as banking, marketing research, advertising, information and biotechnology (Nath 2000).

The training of professional and technical staff

The category professional and technical staff covers the whole gamut of occupational groups, from lawyers to accountants, from doctors to engineers, from scientists to academicians. The term could also refer to more specific occupations like nursing, architects, airline pilots, air traffic controllers, central and state government administrators and so on. But in this subsection we deal with those coming from the so-called STEM background (science, technology, engineering and mathematics). However, for students wanting to take up law and medicine, competition to enter the good law and medical schools (either government- or privately run) is intense. In these domains, there is also a polarization: good schools with bright employment prospects, and bad schools with uncertain career pathways.

Like the business schools, all engineering colleges have to be approved by the AICTE. However, there are private engineering schools operating that are not approved, with questionable curricula and placement records. Due largely to family and peer pressure, and also to maximize the probability of securing a job on graduation, most students (males, but increasingly females as well) opt to get an engineering education after completing high school. According to 2009 AICTE data, there were 2,686 engineering and technology institutions under its aegis offering roughly one million places (MHRD 2010: 152). According to more recent data, in 2010–11, there were 6,043 engineering colleges offering 1.4 million seats (with nearly 250,000 of these going unfilled) and in 2011–12, there were 8,200 engineering colleges offering nearly two million places (with nearly 350,000 of these going unfilled). The larger numbers in the more recent data most likely includes colleges not recognized by the AICTE.[17] The reasons for these large vacancies are because many of these colleges offer specializations in areas for which there are no takers and many of them are located in areas far away from large cities.

In terms of rankings and prestige, the top engineering colleges are the (world-famous) Indian Institutes of Technology (IIT); currently, there are 16 of them across various states offering roughly 10,000 places. Each IIT is an autonomous institute, linked to the others through a common IIT Council which oversees their administration. They have a common admission process for undergraduate admissions – the very selective all-India examination called the IIT-JEE (Joint Entrance Examination). In 2011, nearly half a million high school graduates sat for this test. Next on the rankings list are the Regional Engineering Colleges that are funded both by the central and the state governments in which they are located. Currently there are 17 of these. In addition, there are various engineering departments within state-run universities and a plethora of privately run colleges that vary enormously in terms of quality and reputation. In 2011, nearly 1.2 million students sat for entrance tests conducted by states for their engineering institutions.[18]

The majority of engineering graduates from the better institutions enter a range of sectors depending on their disciplinary specializations: engineering,

manufacturing, electronics, power, information technology, oil and gas exploration and so on. Students graduating from less reputable schools eventually find less desirable jobs on their own. Typically, all these graduates then undergo a year or so of job-specific training at their firms, training which could be transferred to other firms within the industry, but not across sectors. Several stay on with these firms, eventually rising to senior engineering positions. However, many do not, and after a couple of years, they typically seek admission into a reputable business school. The more academically-inclined engineering graduates (especially those from the IITs) pursue a PhD programme at well-known US universities, usually settling down there either employed in academia or in technology/engineering sectors (i.e. the 'brain drain'). In addition to engineering colleges of varying quality, in the information technology sector, there are several private and government-run institutions that offer diplomas and degrees specific to computer applications and software development, like the National Institutes of Information Technology. These graduates obtain jobs in the ever-growing IT sector.

From Table 9.3, we observe the following. The number of graduates in all disciplines who subsequently obtain a postgraduate degree and enter research domains as a proportion of total graduates is relatively low at 10 per cent in 2006–7 and 11 per cent in 2008–9. Although most high school students prefer entry into a reputable engineering college, if one looks at the faculty-wise enrolment of students in higher education for the year 2008–9 exhibited in Table 9.4, we observe that only 9.6 per cent of all students entering higher education are in the engineering/technology streams. The highest percentage is in the arts stream, and one can hypothesize that a part of this group is present here because they could not get into an engineering college of their choice. The same could be true, to a lesser extent, of those in the sciences and commerce. The low number enrolled in medical schools probably reflects the shortage of places in these schools rather than student preference.

All undergraduate colleges have to be affiliated to a university. The universities in turn are regulated by the UGC. The latter was established in 1956 with a charter for coordination, determination and maintenance of standards in higher education.[19] Table 9.5 shows the consolidated list of university level institutions as at December 2010. The colleges that offer undergraduate programmes in the

Table 9.3 Stage-wise enrolment of students in higher education, 2006–9

Stage	*2006–7*	*2007–8*	*2008–9*
Graduate	10,325,839	11,033,966	11,908,151
Postgraduate	1,094,060	1,145,940	1,489,685
Research	74,320	82,277	95,872
Diploma/certificate	118,286	114,535	148,100
Totals	11,612,505	12,376,718	13,641,808

Source: University Grants Commission (2011: Table 2.16).

Table 9.4 Faculty-wise enrolment of students in higher education, 2008–9

Faculty	*Percentage to total*
Arts	43.7
Science	19.2
Commerce/management	18.2
Education	2.1
Engineering/technology	9.6
Medicine	3.3
Agriculture	0.6
Veterinary Science	0.2
Law	2.8
Others	1.00

Source: University Grants Commission (2011: Table 2.17).

arts, sciences, commerce and law vary enormously in terms of teacher quality, reputation and entry requirements, and thus once more, we find this polarization within colleges in a university. The good colleges are difficult to enter: one has to secure very high marks at the school-leaving 'board' examinations to even apply, and a rigorous interview usually follows. The most preferred discipline in the arts stream is economics followed by history; in the sciences it is mathematics followed by physics; and those that prefer biology and chemistry would either be interested in joining a medical school or enter research.

It is not easy to obtain a decent job in India with just an undergraduate degree.[20] Those that, for various reasons (e.g. economic necessity, financial constraints, unable to obtain admission in a postgraduate programme), do seek employment, typically secure white-collar jobs in the private or public sector (clerks, low-level government employees, advertising, hospitality industry). After graduating, many students from all three streams apply to business schools. Many want to join the civil service and prepare to sit for the highly competitive all-India entrance examinations. The commerce students either join a business school, or prepare to become chartered accountants usually while employed.

Table 9.5 Consolidated list of university-level institutions (as at 31 December 2010)

Institutional category	*Number of institutions*
Central universities	42
Institutions deemed to be universities	130
State universities	261
Private universities	73
Institutions of national importance	33
Institutions established under state legislature acts	5
Total number of institutions	544
Number of colleges	31,324

Source: MHRD (2011b: 86).

Similarly, law students seek employment and specialize in a particular area of law at the firm in which they work. In addition to the standard three streams, many opt to join programmes in hotel management, media studies, architecture or pharmacy directly after high school.[21] These specialized fields are job oriented, and given the rapid expansion in the last two decades in the hospitality and media sectors, most of these graduates readily find employment.

We saw earlier that about 10 per cent of undergraduates proceed to obtain a Master's and/or a PhD degree. Table 9.6 shows the output of potential academics by subjects. What is clear from this table is that only 10.7 per cent of PhDs produced in 2007–8 is from the engineering and technology areas, the faculty that is most in demand (even though there has been a sharp increase in the production of both Masters and PhDs in engineering since the early 1990s).[22] Comparing India to China in terms of the production of PhDs paints a gloomy picture; in 2006, India produced 1,000 doctorates in engineering and 5,500 in the sciences, whereas China produced 4,300 doctorates in engineering and 32,000 doctorates in the sciences in 2003.[23] In India, doctorates as a percentage of bachelors in science and engineering in 2006 were 0.4, whereas in China it was 1.2 in 2003. The average annual growth rates of doctorates in science and engineering in India from 2000–6 was 0.8 per cent and 6.1 per cent respectively; the corresponding figures for China from 1997–2001 was 8 and 13.2.[24]

The training of production and white-collar workers

Only a small proportion of the population receives vocational education or training in any form. Moreover, such training is directly related to the residence status of the household, to gender, and to an individual's socio-economic status. NSS data collected in 1993–4 revealed low levels of skills with only

Table 9.6 Faculty-wise MPhil and PhD degrees awarded, 2007–8

Faculty	*MPhil*	*PhD*
Arts	6,078	4,405
Science	8,452	4,514
Commerce/management	2,265	873
Education	1,252	425
Engineering/technology	4	1,427
Medicine	48	277
Agriculture	270	664
Veterinary science	5	123
Law	5	127
Others[1]	794	402
Total	19,173	13,237

Source: University Grants Commission (2011: 14).

Note
1 Others include music/fine arts, library science, physical education, journalism and social work.

about 10 per cent of the population having any skill. NSS data on skills up to 2004–5 reveals a marginal increase in technical education overall and a narrowing of the gender gap. For example, the percentage of the total population with technical education increased from 2.5 in 1993–4 to 2.8 in 2004–5; for males it increased from 3.2 to 3.4, for females from 1.2 to 1.7.[25] In terms of the percentage distribution in the 15 to 29 age group in 2004–5, only 0.3 received vocational education, whereas 1.9 received technical education and 97.8 received 'general' education.[26] Table 9.7 highlights skill acquisition in the young age group (15–29) in terms of both population and 'usual status workers'. From this table we find that urban workers are more skilled than rural workers and males have more skills than females, except in the case of urban females in the 'usual status workers' group. Extrapolating from this table, we find that 65 per cent of urban males and 71 per cent of rural males in the 'usual status workers' group have no skills. This table partly shows the failure of vocational and technical education-related schemes to increase participation, more so those targeting the rural population. The NSS 2004–5 data shows that the largest percentage of trained workers is in the trade and services sectors, followed by manufacturing. A strong correlation exists between education and formal training. The percentage of workers with below primary level of education with formal training was only 0.3, rising to 10.8 for those with a secondary or higher secondary level of education and 19 for those with a college education. The data also reveals that the likelihood of being formally trained is not only higher for those with high levels of education, but also among the economically better off, males, those living in urban areas, and those belonging to upper castes (Srivastava 2008).

A relatively small section of Indian youth gets access to formal vocational education and training (VET) programmes since the overall level of general

Table 9.7 Percentage of population and 'usual status workers' with skills, 15 to 29 years, 2004–5 by gender and rural/urban

Skill	*Rural*		*Urban*	
	Male	*Female*	*Male*	*Female*
Population				
Formal skills	2.6	1.7	8.6	6.4
Informal skills	9.6	6.3	9.3	4.9
Any skills	12.1	8.0	17.8	11.4
Usual status workers				
Formal skills	2.0	1.8	7.4	11.7
Informal skills	12.2	11.2	13.8	13.6
Any skills	14.2	13.0	21.2	25.3

Source: National Sample Survey (2005).

education is low and school dropout rates are high. The technical education and VET system in India follows a three-tier system: (1) graduate and postgraduate level specialists trained as engineers and technologists (discussed in the earlier subsection); (2) diploma-level graduates who are trained in polytechnics as technicians and supervisors; and (3) certificate-level craftspeople trained in ITIs as well as through formal apprenticeships as semi-skilled and skilled workers. The programmes are considerably diverse with respect to duration, target group, entry qualifications, testing, certification and curriculum. While some courses are conducted in formal institutions with uniform curriculum and prescribed examination standards, others are need-based. Thus, after finishing Grade 8, a typical male 14-year-old who opts for VET could join a three-year diploma programme in a polytechnic after which he may join the blue-collar workforce directly, or could pursue further studies in an engineering college. The usual option is to join a one- to two-year programme at an ITI for a DGET-recognized craftsman certificate. This can be followed either by a two- to four-year apprentice certificate leading to employment in manufacturing, or more advanced training at a Central Training Institute leading to a technician's job in manufacturing, services, real estate and so on (see the World Bank 2007 report for details on India's VET programmes).

We now examine the ITI and ITC structures. The majority of these are in basic industrial trades, while the non-engineering trades required for the services sector are severely limited. Because of its educational entry requirements and long course duration, the formal skills training system is not designed to offer skills to less educated people who cannot afford such training. Moreover, with the growing significance of the unorganized sector, driven by a major chunk of the rural population, there exists a dire need to train the workforce seeking employment there especially since there are few other significant skill providers that would be able to comprehend and service the myriad enterprises and networks of the unorganized economy.

According to data made available by the DGET, there are a total of 8,039 ITIs and ITCs in India with a total seating capacity of 1.1 million places as at 31 March 2010. The ITI's two primary trades, the CTS and the ATS together make available 282 trades ranging from two years of learning to be a 'wireman' post eighth standard, to six months of learning the skills required to be an attendant operator at a chemical plant post a Bachelor of Science with Physics. CTS provides medium- to long-term institutional training that produces semi-skilled/skilled workers for industrial employment, while the ATS is a combined training programme that offers both institutional and on-the-job training with the graduated apprentices qualified as skilled. At the end of the CTS programme, trainees sit for the All India Trade Test (AITT) conducted by the DGET and successful students are awarded the NTC, which recognizes them as semi-skilled craftsmen. ATS trainees similarly appear for the AITT for trade apprentices and successful ones are awarded the National Apprenticeship Certificate (NAC). In the next section we will critically evaluate these training institutions.

While the above has been a discussion of the training and supply of blue-collar workers, the term white-collar can refer to a wide range of occupations,

from secretaries to clerical staff, from airline cabin crew to supermarket employees, from waiters and hotel employees to unskilled janitorial staff working for agencies, offices and residential complexes. We would think basic salesforce staff would fall into this rubric as well. There is scant literature and data specifically on white-collar employees in India, and thus one can only provide a sketch from anecdotal evidence. Several privately run schools training airline cabin crew have opened up across the country attracting largely young females from small cities who eventually hope to join a private sector airline. Similarly, hotel management colleges are providing entry-level jobs in the hospitality sector. The mushrooming of supermarkets has led to an increased demand for literate young salespersons who receive firm-specific training at these outlets. The availability of an array of consumer goods from internationally known brands has led to an increased demand for personnel to service these goods. Here too, high school graduates are employed after receiving appropriate training by the relevant firms. In this context, if foreign direct investment is finally allowed into the multi-brand retail sector in India, employment opportunities for both rural and urban youth from working and lower middle class families are expected to increase substantially. Given the mushrooming of gated residential complexes, a significant demand for unskilled janitorial staff has emerged and these complexes outsource this task to external agencies. Typically, these agencies recruit uneducated and unskilled youth from the urban and semi-urban centres and train them. Call-centre employees have also provided employment to both male and female youth who are well versed in English and receive substantial in-company training before they begin work.

We end this subsection with a brief discussion of government-run employment exchanges. Although this does not directly relate to skill formation of blue- and white-collar workers, it does shed light on the structure and characteristics of job seekers in these labour markets and points to the critical (though inefficient) links between industry and VET. It also serves as a prelude to the critical analysis of the skill development system in India that follows.

Employment exchanges are organizations that provide employment assistance on the basis of qualification and experience. The Departments of Employment in various states allow unemployed educated youth as well as currently employed persons residing in each state to pre-register for impending job vacancies occurring in different sectors of that state. They allow registered job seekers to search for suitable jobs, update their résumés and check their status on the jobs waiting list online. Employers can also post vacancies with these exchanges and choose from the registered candidates as per requirements. The National Employment Service provides registration, placement, vocational guidance and career counselling services to job seekers and is the joint endeavour of both the central and the state governments. Administrative control of these exchanges lies with the respective state governments.

As per the latest employment exchange statistics, there were 965 employment exchanges at the end of December 2007. As of that date, the register listed almost 40 million job seekers, of which 12 million were females. The register as

at the end of December 2006 listed 41.4 million, of which more than 29 million belonged to the 15 to 29 age group. Moreover, almost 75 per cent of those on the register are educated (tenth standard and above) job seekers.[27] If we examine the composition of those who are registered at these exchanges we find that as at December 2007, 10.7 per cent were 'production and related workers, transport equipment operators and labourers' (semi-skilled and skilled blue-collar workers) and 72.5 per cent were 'workers not classified by occupation' (unskilled blue-collar workers and the 'educated' unemployed). Interestingly, only 1.1 per cent were 'service workers'. The age distribution of those registered is also revealing: at the end of 2006, 70 per cent were in the 15 to 29 age group. These are ominous trends, as young job seekers, especially those with some education but no marketable skills, flood urban labour markets in the coming decade. Unfortunately, these employment exchanges have been very weak in actually placing those registered, especially as the private sector rarely recruits from this source. For example, in 2008, only 1.1 per cent of registered ex-ITI trainees were actually placed by these exchanges.[28]

Since India's stringent labour laws tend to discourage the hiring of permanent workers in industry (Bhattacherjee and D'Souza 2011), employers have resorted to hiring temporary workers and this process is now frequently outsourced to private agencies. Teamlease, a Bangalore-based agency has created thousands of these temporary jobs, from store clerks, janitors and security guards at the proliferating shopping malls to the sales staff at appliance makers. The agency fills these jobs at a cost which allows firms to be profitable and helps retrain India's large population of young job seekers (half of Indians are 25 or younger) who are undereducated and ill prepared to enter the labour force. Typically, Teamlease handles nearly all the wage and salary administrative functions of these temporary workers (Bajaj 2011).

Analysis and critique of the system

The poor performance of a significant part of the general education system is indicative of the even more lamentable situation with regard to VET. In the country as a whole, 98 per cent of students in the 15 to 29 year age group received education through general courses in 2007–8, and just 2 per cent received technical and vocational education (IAMR and Planning Commission 2011). This is unsurprising given that so many are out of school and the high dropout rates from primary education leaves a small proportion of youth who have the credentials to enter into vocational training courses. Thus, amongst persons in the age group 15 to 29, only about 2 per cent have received formal vocational training and another 8 per cent have received some type of non-formal vocational training (Planning Commission of India 2008). In the manufacturing sector just 16 per cent of manufacturers provide in-service training compared to 90 per cent in China (World Bank 2010). There is also a lack of capacity. Against approximately 12.8 million youth entering the workforce each year, there is available capacity to provide training to about 25 per cent or just 3.1 million per year (Teamlease 2008).

The recent initiatives for skills training such as the upgrading and converting of ITIs to Centres of Excellence and the training through modular employable skills recognize some of the deficiencies that plague worker training. A major issue is how to bring informal sector workers who constitute the significant part of the workforce into training programmes that upgrade their skills. Such workers have picked up their skills from informal apprenticeships and cannot afford the cost of training. They are typically illiterate or with limited education and are diverse in terms of the geographic regions they work in as well as the languages they understand and communicate in, thus making trainer communication a critical component of any skill imparting programme.

In the organized sector, the relevance of the training conducted is a major issue. A DGET study (2003) found that two-thirds of those surveyed were not employed in the trade for which they had been trained. This has been echoed in larger parts of the skill set of workers in a study by McKinsey Global Institute (cited in IAMR and Planning Commission of India 2010) which estimates that only 25 per cent of engineering graduates, 15 per cent of finance graduates, and 10 per cent of those with other degrees would be acceptable for employment in multinationals. The curricula at training institutions are often obsolete and do not meet the requirements of a rapidly modernizing industry and services sector. This is reflective of a lack of involvement of industry with the training institutes. Infrastructure at most ITIs are inadequate with outdated equipment and run-down workshops. Faculty are poorly trained and unacquainted with the ways in which modern industry and services sectors are organized. Finally, high growth services sectors have been neglected and it is only with the recent Skill Development Mission that services such as IT, retail, packaging, media and healthcare are being considered as sectors in which training programmes are required.

In terms of setting up of new ITIs and ITCs, there seems to be a large percentage of new proposals that are accepted over the years. Unfortunately, the rapid increase in the number of VET institutes, in spite of being mostly driven by private training providers, has not ensured efficiency. A study of ITI efficiency, undertaken by the DGET in collaboration with the ILO in 2003 (ILO 2003), reveals a slump in internal efficiency as seen from falling enrolments, increasing dropouts, low graduation rates and underutilization. A 2006 FICCI survey of ITIs revealed 51 per cent underutilization of places, particularly in the northern and southern regions of the country, enhancing geographic inequality. Of this, 21 per cent report more than 30 per cent seats unutilized (FICCI 2010). The ITCs on the other hand, have shown slight improvements in this regard, owing to the freedom they enjoy in selecting courses to be offered and in hiring or firing trainers as required. However, the quality of trainers, premises and equipment remains a cause of concern even at ITCs. With respect to external efficiency, as measured by employability of ITI/ITC graduates, the situation remains bleak. Less than 40 per cent of graduates, on average, find any form of wage or self-employment, including participation in family businesses. The DGET–ILO study identified several reasons for an apparent enrolment drop in public ITIs. Some of these are the lack of student demand for training in basic

industrial trades, declining demand from industry for training graduates and formal apprentices, shortage of government funding for public training provision, overprovision of skills training due to uncontrolled growth of private ITCs, and demand–supply imbalances at the state level.

Major structural issues also exist in the VET framework. In an economy where the unorganized sector is gaining prominence at a rapid pace, a training policy and a delivery system aimed exclusively at organized sector workers serves only a limited purpose. Moreover, with respect to ITIs, their operational flexibility and responsiveness is significantly constrained by legal, financial and management arrangements. VET development through ITIs has also ignored state-specific requirements resulting in increasing regional inequality with respect to employment opportunities and outcomes.

To cater to India's growing need for skilled human resources and thus put an end to the increasing skill gap by improving the current situation, the National Planning Commission, DGET and other government agencies have proposed a number of changes. Some of the proposed practical measures related to the ITIs are expansion of training facilities, increasing the effectiveness, efficiency and relevance of training, improving management of the training system, reforming vocational training in the states and, most importantly, training for the informal economy.

Evidence of the government's seriousness with respect to the above proposed reforms has been a substantial 150 per cent rise in plan allocation. In the eleventh five-year plan (2007–12), the Planning Commission set aside more that INR 22 billion for the Ministry of Labour and Employment (the same stood at INR 15 billion in the tenth plan and approximately INR 9.4 billion in the ninth) of which almost 41 per cent is the outlay for DGET and other worker education and training-related provisions.[29] Another step in the right direction has been the establishment of state-level VET councils and also launching state-level certifications. This would ensure easier access, more updated courses and curricula, better coordination with employment exchanges and better demand analysis at the local level.

A major improvement has been the establishment of the NSDC. The focus on using the public–private partnership as a tool for meeting skill development targets has been much awaited. The Labour Ministry intends to set up more than 6,500 skill institutes under this partnership model. The National Policy on Skill Development was also formulated and approved in 2009 aimed at setting up a demand-driven system to reduce skill mismatch, expanding outreach through innovative measures like social and private partnerships and the use of modern training technologies like distance and e-learning. The structuring of a National Vocational Qualifications Framework will enable both horizontal and vertical mobility between general and technical education through recognition and certification of competencies irrespective of the mode of learning, setting international standards of delivery, focusing on emerging occupations, propagating equity for females, disabled people and disadvantaged groups, stressing the importance of researching, planning and monitoring, and upgrading trainers'

skills to improve quality and status. Such steps imply a well-directed move towards bridging India's skill gap.

International collaborations with the ILO and foreign VET providers like IndiaSkills along with World Bank funding through projects like the five-year Vocational Training Improvement Project begun in 2007 at an estimated cost of US$359 million, have been major leaps. Not only has it opened access to international standards of skill development and training but it has brought in a flow of much required funding. A prime example is the establishment of UK–India Skills Forum, a collective umbrella for the UK skills and vocational training providers of all types from basic blue-collar trainers to higher end skills providers. As at 2008–9, 150 ITIs were taken up by the World Bank for upgrading. The same figure for upgrading through private–public partnerships stood at 300. A major focus has been on ITIs in the richer states of Andhra Pradesh, Maharashtra, Gujarat and Punjab. The Swiss government has decided to help the Indian corporate sector run a joint programme to provide vocational training to one million Indians by 2022 (India Education Review, 8 November 2011).

Another positive development is the collaboration with national-level institutes and industry. Premier institutes like the Indian Institutes of Technology and National Institutes of Technology (NIT) are helping. A case in point has been NIT Agartala, which in association with other organizations has established the first Vocational Training and Skill Development Centre. The aim is to set up 1,000 more such centres across the country within the next few years. Industry collaboration through the ITI adoption scheme has also been a major positive development. The scheme envisages upgrading ITIs through tripartite arrangements between the state governments, the central government and an industry under the partnership framework. This would not only prove beneficial to the ITIs through improved quality and resources, it could also entail a captive workforce for firms if so desired. While the ITIs have historically been the major component of VET, ignorance of their responsibilities over the years has set India back several decades. There is, however, a strong positive development with the increasing private participation and public sector reforms.

Official estimates show that in 2012 India will have had to create over 51 million jobs. But in 2010, employment exchanges filled a little over 500,000 jobs. Most of these jobs were in the government sector. Privately owned businesses, where most new jobs are located, do not use these repositories of potential employees as much as they could. According to a Teamlease report (2007), industry maintains that less than half of those who received vocational training fall in the employable category. Several Indian firms thus have no option but to import people for even blue-collar jobs.[30] Further, the Teamlease 2007 report finds that taking into account the current backlog, an estimated 200 million people in the 15 to 29 age category would require additional skill-based training over the next 20 years, i.e. an average ten million people annually – a formidable number. The fallout has been employment agencies of the state governments having 30 million educated unemployed, barely functional literates unskilled in any vocation, on their books even as industry is experiencing a severe shortage

of skilled personnel. In conclusion, since independence, Indian governments both at the centre and the states have neglected VET.

The government has recognized the urgent need to modernize these employment exchanges. This came after the release of a report prepared by Hyderabad-based National Institute of Smart Governance and the consulting firm Ernst and Young. The government realized that current exchanges act as mere repositories functioning in a reactive fashion and what was required instead was to take these exchanges beyond registration centres by equipping them to do assessment, counselling, training and finally employment. In addition, it was realized that there are more jobs in the private sector and competencies need to be appropriately tuned to match supply with demand.

On the basis of various reports and literature on the Indian VET structure we now summarize their main recommendations. First, the government should desist from expanding the number of ITIs and ITCs and reform the existing system by making it more demand responsive. Second, there needs to be a clear demarcation of the responsibilities and functions of the various organizations in the existing VET structure; as it stands now, there are too many overlaps. Splitting VET between the MHRD, Ministry of Labour, and the state governments has led to a lack of coordination. Third, the visibility of VET institutions needs to be increased so that it reaches the target market of teachers, trainers, parents and students. Fourth, courses in the curricula have to be redesigned keeping in mind the demand structure, especially in the private sector. For example, the introduction of Enterprise Skills Development at the school and college levels could be a step to a more employable population. This could be integrated into the secondary and higher secondary education structure through the use of competency-based qualifications, popularly known as National Vocational Qualifications in developed economies. On the positive side, the NSDC has established a Sector Skills Council for each industry that will decide what is taught in the vocational courses for that industry.[31]

Fifth, the government should reallocate funds from engineering, management and other higher education programmes to primary and secondary schooling and to VET institutions. This would help in more appropriate skilling of the young population as higher education graduates, especially from the average quality institutions, face low demand. Moreover, such education still remains accessible largely to the urban middle and higher income groups. Sixth, funds should be partially reallocated from the more prosperous states to others to bridge the regional inequality divide in terms of educational opportunities. Seventh, lowering entry levels: a major issue with the education structure in India is the secondary-level dropout rate. VET institutions do provide some courses from the eighth grade but introducing courses even below that level to tap the high dropouts at the primary and secondary stages could be a possible way out. An ambitious project proposal has emerged from the HRD ministry more recently that intends to make vocational education a part of school curricula. The National Vocational Education Qualification Network aims to make every school graduate employable by awarding seven levels of certification after class IX.

Finally, and possibly the most important, the development of skills for the unorganized sector should be incorporated into the national training policy and system. India has 93 per cent of its workforce working in the informal sector which contributes about 60 per cent of the GDP. These workers have exceedingly low skill levels, with the National Commission on Enterprises in the Unorganized Sector (NCEUS 2009) estimating that 2.5 per cent of these have formal and 12.5 per cent have informal vocational training mainly through informal apprenticeships.[32] Conventional training programmes are not suitable for such workers as they work long hours and are unwilling to enlist for a training programme as it would mean taking time out from work leading to a loss of income. Recognizing this, the government launched a Skill Development Initiative in 2007 with the aim of training a million persons as well as testing and certifying those skills through a modular employable skills framework. These skills are imparted through professional training institutes or through non-formal association of trainees with those who have proficiency in a trade. Sectors with high potential employment growth such as agro-business, forestry, tourism, community and personal services have been identified by the Planning Commission with a significant share of these activities located in the unorganized sector. However, the unorganized sector so far has been unable to offer lucrative employment to skilled graduates.

Other more specific suggestions for attracting students include the possible mapping of all VET institutions, making apprenticeship compulsory, standardizing certifications and establishing flexible pathways, such as allowing a vocational certificate to be recognized on par with general education certificates. The possibility of mobility across types of education, the ability to continue any type as preferred, and not have the social stigma related to VET being of 'lower repute' would encourage not only students to try the VET stream but would also make parents more open-minded. Finally, there are suggestions from some quarters to privatize India's employment exchanges currently catering primarily to the public sector where job opportunities have dried up. If not complete privatization, steps can surely be taken to collaborate with the private sector so as to increase their efficiency.

In terms of a critical analysis of the STEM sector, one has to point to several problems that characterize primary and secondary schooling as well as higher education institutions in India. While the *Sarva Shiska Abiyan* programme led to the creation of new teacher posts resulting in a small decrease in the pupil–teacher ratio (India Education Review, 30 November 2011), high rates of teacher truancy often due to an unaccountable and unionized workforce severely impinges on the quality of inputs provided (Patnaik 2011). This decline is reflected in the recently released Programme for International Student Assessment results where India was second from the bottom among the 74 countries measured (Patnaik 2011). Although the education tax introduced in 2004 led to considerable outlays on expanding school infrastructure and providing midday meals to students undoubtedly meant rising enrolment rates, severe problems of delivering 'quality' education remain. It is now suggested by experts that the

primary focus of government's policy should shift from mere physical expansion to the quality of education. According to Patnaik (2011: 10), 'the challenge is not just to get children in school, but how to educate them'.

Similar issues of quality and quantity also confront institutions of higher learning in India. According to one report, India needs 1,000 universities but currently there are only 505 with a shortage of one million faculty members (India Education Review, 14 November 2011). But, according to a former UGC chairman, most private universities are 'business centres' that are selling degrees in the name of imparting education, terming the proliferation of these institutions as a 'big racket' that should be effectively curbed (India Education Review, 18 November 2011). Several experts believe that higher education regulators (UGC and AICTE) should adopt self-disclosure and accreditation policies rather than an inspection and an approval regime that promotes corruption (India Education Review, 22 December 2011). Recently, the government proposed the setting up of an overarching body in higher education to oversee both universities and technical institutes subsuming all existing regulatory bodies, but the health ministry severely objected as the bill would take over medical education (India Education Review, 21 December 2011).

To address the severe shortage of faculty in Indian universities, and given that the projected expansion would take the GER in higher education to 25 per cent by 2017 against the current 17 per cent,[33] the current government is proposing to change laws so as to allow universities to hire faculty from abroad (India Education Review, 16 November 2011). In addition, the Foreign Educational Institutions (Regulation of Entry and Operations) Bill 2010, if passed, will allow foreign universities to set up campuses in India. As of today, foreign direct investment on education is low because of a restriction on profits as surplus revenues have to be invested back into institutional expansion in India. On the other hand, outflow of expenditure on education incurred abroad is about US$5.5 billion a year by about a quarter of a million Indian students studying overseas (Mohanty 2011). Suggestions have also emanated from the government for foreign direct investment in medical education to increase the supply of doctors and nursing staff (India Education Review, 1 December 2011). These proposals, if passed, may slow down the 'brain drain' from India.

In the last five years, the government has discussed and debated several issues related to the structure and functioning of higher educational institutions placing a major emphasis on access, equity and excellence (Pental 2011). For example, compartmentalized learning of a few sub-disciplines of science in post-school science education, limited mobility between science and technology streams, rote-learning, the absence of semester-based teaching, the divide between research bodies and universities, unrevised syllabi and an inflexible undergraduate education are all severe limitations. An interesting suggestion to create flexibility and mobility across disciplinary boundaries is the setting up of a 'meta-university': a high speed broadband network that will connect more than 400 universities and academic institutions across the country so that an undergraduate student can study subjects from various sites.[34]

Conclusions: future trends and developments

On 15 August 2007, India's Independence Day, the prime minister stated:

> For every one of our people to benefit from new employment opportunities being created across the economy, we must ensure that every Indian is educated and skilled. No nation can progress unless its people are educated. We have shown our Government's commitment in this regard by tripling public spending on education in the last three years. I request states also to give priority to education, as education alone is the foundation on which a progressive, prosperous society can be built.
>
> (Government of India 2007)

According to the Minister for Human Resource and Development, India will need 500 million skilled people and 250 million graduates to sustain double-digit growth by 2022 (India Education Review, 21 June 2011). Given the analysis contained in this chapter, these wishes and needs seem a daunting task.

The two themes that anchor this chapter on the Indian skill development system are a *shortage* of skilled persons at nearly all levels amidst a sea of surplus of generally unemployable (young) workers, and a polarization in terms of good versus bad institutions that provide skills training and education in general. While increased government expenditure led to quantitative expansions of primary and secondary school infrastructure, increasing the GER substantially, the shortage of skilled and committed teachers continues to pose significant supply-side constraints. The elite of course can send their children to well-endowed private schools. Similarly, just expanding the number of colleges and universities without taking into account the critical shortage of faculty and outdated and inflexible syllabi will merely reproduce the *shortage amidst surplus* phenomena in intellectual labour markets as in the STEM sectors. Again, the elite can send their children abroad for higher education if they do not meet the high entry-level merit criteria needed to secure admission in the good and reputable institutions. Or, they can pay large sums for tuition and get into the questionable domestic private colleges and universities but then face less than optimal employment outcomes. The one skill-imparting sector that seems to be working fairly efficiently is the managerial labour market but even here the polarization of institutions remains a worrying issue.

It is the VET sector that has the most serious problems in India, as these limitations will have grave consequences on the development of a steady supply of semi-skilled and skilled labour supply that an expanding manufacturing sector will need in the future. It is also this sector where young, partly-educated rural and semi-urban youth will most likely seek and qualify for jobs. To capture the returns from the 'demographic dividend' effectively, India will have to restructure its VET institutions and governance structures in line with best practices in comparable economies, otherwise this advantage could soon turn into a problem of unmanageable proportions. Finally, what is encouraging in this discourse is

the fact that all concerned stakeholders (the government, private industry, and public policymakers) are keenly aware of the gravity of the situation and seem committed to rapidly improving all the institutions and the structures that govern the skill development system in India.

Acknowledgement

The authors are grateful to Debarati Basu for research assistance.

Notes

1 The formal or organized sector of the economy in manufacturing comprises plants that have ten or more workers and use power or 20 workers or more and do not use power. For the remainder of the economy the organized sector refers to all companies and government organizations. The size of employment in the overall organized sector has remained static at around 27 million over the period 1995 to 2007.
2 Interview with Lant Pritchett, in the *Indian Express*, 8 November 2011.
3 The proportion of students attending private institutions unaided by the government at the primary (and upper primary) levels increased from 12 (9) per cent in 1995–6 to 20 (17) per cent in 2007–8, an increase of eight percentage points, indicating the poor educational inputs provided by the government schools. See IAMR and Planning Commission (2011, Table 6.13).
4 National Sample Survey (2008b), 64th Round.
5 This was about US$61 at the exchange rate prevalent at that time.
6 The description of the education and training system that is presented here is sourced mainly from the report of the Sub-group of the Planning Commission on 'Reorientation of the Curriculum for Skill Development on Continuous Basis', submitted to the Planning Commission in May 2010 (Planning Commission of India 2010).
7 The scheduled castes and tribes are two groups of historically disadvantaged sections of society that have been explicitly recognized in this fashion by the Indian constitution. They constitute about 24 per cent of the population and are the subject of 'reservation' policies by the state.
8 There are also specialized institutions for imparting craftsmen training to women such as the National Vocational Training Institute and ten Regional Vocational Training Institutes. Apart from these there are also 20 Vocational Rehabilitation Centres for the physically and mentally challenged, that function in the country.
9 The report is available at http://us.manpower.com/us/en/multimedia/2011-Talent-Shortage-Survey.pdf.
10 Currently, there are 13 such institutes across the country in various cities. In terms of Indian business school rankings, the IIMs at Ahmedabad, Calcutta and Bangalore are almost always the top three (see, for example, *Outlook* magazine's 'India's best business schools', 26 September 2011).
11 There are several coaching centres all over the country which prepare students to pass the CAT examination and these charge hefty fees.
12 The AICTE was instituted as a regulatory body to be at the apex of technical education in 1945. In 1987 it was granted statutory status. The mandate of AICTE is: planning and coordination of technical education, promotion of quality, and maintenance of norms and standards. See www.aicte-india.org for more information.
13 *Outlook* 2011.
14 Ibid.
15 As at December 2009, there were 69 hotel management institutions with an intake of 3,583 students (MHRD 2010: 152). The average annual employment growth rate in

the 'hotels and restaurants' sector between 1999–2000 and 2004–5 was 5.72 per cent with an employment elasticity of 0.76 (NCEUS 2009).

16 Organizations such as FICCI (Federation of Indian Chambers of Commerce and Industry), ASSOCHAM (Associated Chambers of Commerce and Industry), and IMC (Indian Merchants' Chamber).
17 *The Telegraph* 2011b: 5.
18 Ibid.
19 It is also responsible for provision of funds to entitled educational institutions. The mandate of the UGC is as follows: promoting and coordinating university education, determining and maintaining standards of teaching, examination and research in universities, framing regulations on minimum standards of education, monitoring developments, and advising the central and state governments on the necessary measures for improving university education. See www.ugc.ac.in.
20 This is not true for the top undergraduate colleges in the country. Since the mid-1990s, several firms do directly recruit undergraduates.
21 According to the MHRD Annual Report 2010 (p. 152), as at December 2009 there were: 69 institutions offering hotel management programmes with an intake of 3,583, 94 institutions offering programmes in architecture with an intake of 3,201, and 944 pharmacy institutions with an intake of 60,718.
22 Observer Research Foundation (2007).
23 Ibid. p. 31.
24 Ibid. p. 32.
25 National Sample Survey (2005) 61st Round.
26 Ibid.
27 This information is obtained from the employment exchanges section at www.labour.nic.in.
28 Government of India (2009).
29 See the Planning Commission's website: www.planningcommission.nic.in.
30 A couple of examples being DLF Laing–O'Rourke bringing over 20,000 carpenters and electricians from West Asia for its projects in India and Reliance Industries using 40,000 blue-collar workers from abroad for its Jamnagar project work. See www.wakeupcall.org.
31 The Sector Skills Council for each industry comes up with a list of job profiles in the industry and skills required for them. That becomes the National Occupational Standards for that sector and governs what is taught in the vocational courses for that industry. These councils have been formed for four sectors so far – IT, security, retail and automotive – and these are the vocational courses that will be introduced in the pilot projects (see *The Telegraph* 2011c: 22).
32 About a third of informal workers are illiterate and another third have a primary or middle school education.
33 *The Telegraph* 2012: 5.
34 *The Telegraph* 2011a.

References

Bajaj, V. (2011) 'Outsourcing giant finds it must be client, too', *New York Times*, 30 November.

Bhattacherjee, D. and D'Souza, E. (2011) 'Labour markets in India: Informality and inequality', in J. Benson and Y. Zhu (eds) *The Dynamics of Asian Labour Markets: Balancing Control and Flexibility*, Abingdon: Routledge.

Bosworth, B. and Maertens, A. (2010) 'Economic growth and employment generation – the role of the service sector', in E. Ghani (ed.) *The Service Revolution in South Asia*, New Delhi: Oxford University Press.

Bosworth, B., Collins, S. and Virmani, A. (2007) 'Sources of growth in the Indian economy', *India Policy Forum*, 3(1): 1–69, India: National Council of Applied Economic Research/Washington, DC: The Brookings Institute.

Census of India (2011) 'India at a glance, data for use of deputy chairman, planning commission', online, available at: http://planningcommission.nic.in/data/ datatable/0512/ databook_241.pdf.

Deaton, A. and Dreze, J. (2002) 'Poverty and nequality in India – a re-examination', *Economic and Political Weekly*, 37(September): 3729–48.

Deb, S. and Palety, P. (2003) *Outlook Guide to the Best Business Schools in India*, New Delhi: Outlook Publications.

DGET (2003) *Tracer Study of Trained Apprentices to Assess the Effectiveness of the Apprenticeship Training Skills (ATS)*, New Delhi: Directorate General of Employment and Training, Ministry of Labour and Employment, Government of India.

D'Souza, E. (2010) 'The economic effects of labour legislation in India: A critical essay', *Industrial Relations Journal*, 41(2): 122–35.

Dubey, M. (2010) 'Universalizing school education – a missed opportunity', *Indian Social Development Report, 2010*, New Delhi: Oxford University Press, Chapter 6.

FICC (2010) *The Skill Development Landscape in India and Implementing Quality Skills Training*, New Delhi: FICCI and ICRA Management Consulting Services Ltd.

Ghani, E. (2010) 'Is service-led growth a miracle for South Asia?' in E. Ghani (ed.) *The Service Revolution in South Asia*, New Delhi: Oxford University Press.

Government of India (2007) *PM's Independence Day Speech, 2007*, 15 August, online, available at: http://pmindia.gov.in/speech-details.php?nodeid=551.

Government of India (2009) *National Policy on Skill Development*, New Delhi: Ministry of Labour, Government of India.

Government of India (2010) *Abstract of Selected Educational Statistics 2007–08*, New Delhi: Ministry of Human Resource Development.

ILO (2003) *Industrial Training Institutes of India: The Efficiency Study Report*, New Delhi: International Labour Organization, subregional office for South Asia.

India Education Review (2011) 21 June 2011; 8, 14, 16, 18 and 30 November 2011; 1, 21 and 22 December 2011, online, available at: www.indiaeducationreview.com.

IAMR and Planning Commission of India (2010) *The Challenges Facing Skill Development in India: An Issues Paper*, New Delhi: Institute of Applied Manpower Research and Planning Commission, Government of India.

IAMR and Planning Commission of India (2011) *India Human Development Report 2011 – Towards Social Inclusion*, New Delhi: Oxford University Press.

Kochhar, K., Kumar, U., Rajan, R., Subramanian, A. and Tokatlidis, I. (2006) 'India's pattern of development: What happened, what follows?' *Journal of Monetary Economics*, 53(5): 981–1019.

Kulkarni, S.S. (2002) 'Women and professional competency – a survey report', *Indian Journal of Training and Development*, 32(2): 11–16.

Mahendra Dev, S. (2008) *Inclusive Growth in India*, New Delhi: Oxford University Press.

Mehra, P. (2002) 'Women managers: To the top and beyond', *Hindu Businessline*, 27 April.

MHRD (Ministry of Human Resource Development) (2010) *Annual Report*, New Delhi: Ministry of Human Resource Development.

MHRD (Ministry of Human Resource Development) (2011a) *Statistics of Higher and Technical Education 2009–10*, online, available at: http://mhrd.gov.in/sites/upload_ files/mhrd/files/Abstract2009-10_0.pdf.

MHRD (Ministry of Human Resource Development) (2011b) *Annual Report*, New Delhi: Ministry of Human Resource Development.

Mohanty, B.K. (2011) 'FDI low in education, finger at bar on profit', *The Telegraph*, 20 December, Calcutta.

Nath, G. (2000) 'Gently shattering the glass ceiling: Experiences of Indian women managers', *Women in Management Review*, 15(1): 44–52.

National Sample Survey (2005) 'Employment and unemployment situation in India 2004–2005', 61st Round (July 2004–June 2005), New Delhi: Government of India.

National Sample Survey (2008a) 'Employment and Unemployment Survey Reports, July 2007–June 2008', Report No. 531, Central Statistical Organization, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.

National Sample Survey (2008b) 'Education in India, 2007–08: Participation and Expenditure', Report No. 532, Central Statistical Organization, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.

NCEUS (National Commission on Enterprises in the Unorganized Sector) (2009) *Skill Formation and Employment Assurance in the Unorganised Sector*, New Delhi: NCEUS, online, available at: http://dcmsme.gov.in/ Skill_Formation_and_Employment_Assurance_in_the_Unorganised_Sector.pdf.

Observer Research Foundation (2007) *Report on Engineering Education in India*, New Delhi: Observer Research Foundation.

OECD (2007) 'India's growth pattern and obstacles to higher growth', in *OECD Economic Surveys: India*, New Delhi: Academic Foundation.

Outlook (2011) 'India's best business schools', *Outlook*, New Delhi, 26 September, online, available at: www.outlookindia.com/article.aspx?278323.

Patnaik, I. (2011) 'Not just their roll call', *The Indian Express*, 20 January 20.

Pental, D. (2011) 'Rebuilding universities, degree by degree', *The Indian Express*, 28 April 28.

Planning Commission of India (2008) 'Skill development and training', Chapter 5 of the *Eleventh Five Year Plan – Inclusive Growth, Volume 1*, Government of India, New Delhi: Oxford University Press.

Planning Commission of India (2010) 'Report of the Sub-group on Reorientation of the Curriculum for Skill Development on Continuous Basis', Planning Commission, Government of India, New Delhi, online, available at: http://planningcommission.gov.in/reports/genrep/skilldev/rep_skill_6a.pdf

Ramachandran, V., Pal, M. and Jain, S. (2005) *Teacher Motivation in India*, New Delhi: Education Resource Unit.

Reserve Bank of India (2011) 'Handbook of statistics on the Indian economy, 2010–11', Department of Economic and Policy Research, Reserve Bank of India, Mumbai.

Rodrik, D. and Subramanian, A. (2005) 'From Hindu growth to productivity surge: The mystery of the Indian growth transition', *International Monetary Fund Staff Papers*, 52(2): 193–228.

Rogers, F.H. and Vegas, E. (2009) 'No more cutting class? Reducing teacher absence and providing incentives for performance', Policy Research Working Paper No. 4847, Development Research Group and Human Development Network, World Bank, February.

Sarkar, S. and Mehta, B.S. (2010) 'Income inequality in India: Pre and post reform periods', *Economic and Political Weekly*, 45(September): 45–55.

Singh, K. (2003) 'Women managers: Perception vs. performance analysis', *Journal of Management Research*, 3(1): 31–42.

Srivastava, R. (2008) 'Education, skills and the emerging labour market in India', *The Indian Journal of Labour Economics*, 51(October–December): 759–82.

Teamlease (2007) *Indian Labour Report: The Youth Unemployability Crisis*, online, available at: www.teamlease.com/index.php?module=research&event=india_ Labour_ Report.

Teamlease (2008) *India Labour Report: The Right to Rise – Making India's Labour Markets Inclusive*, online, available at: www.teamlease.com/index.php?module=research&event=india_Labour_Report.

The Telegraph (2011a) 16 November, Calcutta.

The Telegraph (2011b) 27 November, Calcutta.

The Telegraph (2011c) 15 December, Calcutta.

The Telegraph (2012) 11 January, Calcutta.

Tilak, J. (2006) 'Education: A saga of spectacular achievements and conspicuous failures', in Council for Social Development (ed.) *India Social Development Report*, New Delhi: Oxford University Press.

United Nations (2000) *The World's Women*, New York: United Nations Statistics Division.

UNDP (2011) *Human Development Report 2011 – Sustainability and Equity: A Better Future for All*, New York: United Nations Development Programme.

University Grants Commission (2011) *Higher Education in India, Eleventh Plan 2007–2012*, New Delhi: Government of India.

Weiner, M. (1991) *The Child and the State in India: Child Labour and Education Policy in Comparative Perspective*, Princeton, NJ: Princeton University Press.

World Bank (2007) *Skill Development in India: The Vocational Education and Training System*, Washington, DC: World Bank.

World Bank (2010) *Country Strategy for India (CAS) 2009–2012*, Washington DC: World Bank, online, available at: http://go.worldbank.org/ZUIBUQT360.

Yadapadithaya, P.S. and Stewart, J. (2003) 'Corporate training and development policies and practices: A cross-national study of India and Britain', *International Journal of Training and Development*, 7(June): 108–23.