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India's Skills Challenge:
First Principles, Priorities and Responses[1]

This paper highlights some of the key issues that the Indian Ministry of Skills Development and Entrepreneurship is grappling with in the country, and outlines how the ministry is trying to address them. Though there are no technical definitions, the phrase, Vocational Education and Training, is used to describe the long duration (minimum one year) training programmes while the phrase, skills development, is used to describe the short duration (not exceeding six months) training programmes. This is not drawn from the literature but rather reflects a practice in Indian official discussions.

K P Krishnan[2]

The Skills Challenge facing India

On the demand side, skill gap studies commissioned by the National Skill Development Corporation in India in 2012 suggest that 103 million incremental skilled workers will be required across 24 high growth sectors by 2022. This points to a large demand for skilled workers in industry and service establishments. The studies also bring out the obvious fact

[1] This paper is an adaptation of the keynote address delivered at the workshop on 'Skills Development – Legacy, Current Challenges and Planning for the Future: Insights from the Indian, Southeast and East Asian Experiences', on 5 and 6 October 2017 in Singapore. It was organised by the Institute of South Asian Studies (ISAS), autonomous research institute at the National University of Singapore.

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that it is vital for the training to be of high quality and it must relevant to industry requirements.

On the supply of labour side, 54 per cent of India's population is under 35 years of age. While there is lack of unanimity on the precise numbers, it is estimated that about five to seven million young people enter the workforce every year without any formal training. India's current annual training capacity in the formal Vocational Education and Training (VET) system is only about 2.5 million with an annual throughput of about 1.5 million persons.

Another way of looking at the likely demand for skilling is the fact that about 47 per cent of children in India drop out at the secondary school level and end up in the workforce. This section of the population also requires skilling but is endowed with low levels of literacy and numeracy. These individuals need to urgently acquire marketable and foundational skills so that they become employable.

What the above brief discussion points to is the fact that there is demand for skilled workers from the industry and there is a steady supply of young people in search of skills and jobs. One would, therefore, expect that the market forces should be able to connect demand and supply, and create a market for skill development.

Conceptualising a Market for Skills Acquisition

Economics tells us that, since education is characterised by "externalities", despite the absence of "non-rivalry" and "non-excludability" in consumption, there is likely to be market failure in the form of under-provision. This is most prominent in basic education which has undisputed and near-universal positive externalities leading to a large divergence between social and private benefits and costs. The case for "state intervention" in the form of "state provision" is, therefore, very strong in basic education. Skill development in the Indian context in the factual situation described above is likely to share some of the features of basic education calling for similar state intervention.

Public economics also tells us that "state provision" does not necessarily mean "state production". In a conceptual sense, this only requires public funding. The actual production of the good or service can be by the private sector. Besides the above argument, in an area like skill development, with over 70 per cent instruction envisaged in the form of practical or hands-on training, the argument for private sector production is even stronger.

It is not clear whether it was consciously thought through but the evolution of the skill development eco-system in India seems to have actually followed this theoretical design.

Evolution of the Skill Development Ecosystem in India

The backbone of India's skill training system consists of a network of Industrial Training Institutes (ITIs). These were first set up in the 1950s, almost entirely by the state – in the Indian case, by the state governments – with a view to equip young people with the skills required to support industrialisation and infrastructure development efforts which were launched soon after independence. This was the human resource obverse of the setting up of large public sector undertakings in the engineering, manufacturing and capital goods sector that started with the Second Five-year Plan. With the huge increase in the demand for ITI seats, post-2005, one sees an explosion in the number of it is, especially the private ones. Today, there are more than 13,000 ITIs across the country, and over 80 per cent of these are private institutions. Courses here are of one to two-year duration. On completion of training, students are certified through the National Council of Vocational Training. There are some ITIs whose students are certified by the State Council of Vocational Training. These are bodies created by executive orders and are not statutory regulators like the University Grants Commission or the All India Council of Technical Education.

However, a major challenge in the ITI system, which for most of the initial years was governmental, is that it was unable to keep pace with changing industry requirements. In addition, these government institutions were and continue to be affected by the usual Indian "state pathologies". The average ITI laboratories are of poor quality, the equipment is outdated and the teachers do not get appointed in the required numbers and in time. Therefore, government it is, as a general rule, are likely to have large tracts of land,

reasonably good buildings but average laboratories and equipment, and vacancies in teaching positions. Available teachers are likely to be formally qualified and well-paid but with low motivation.

In the private sector, in the absence of regulation and supervision, notwithstanding some state of the art ITIs with strong industry partnerships such as Don Bosco in Pune or the Nettur Technical Training Foundation in Bangalore, the average ITI is likely to be poorer on all parameters in comparison to government ITIs.

Given the drawbacks in the ITI system and the need to build the capacity of skills training institutions, a parallel short duration skills training system of private sector skills training providers rapidly emerged over the last 10 years or so. In line with text book public economics principles, these emerged in response to and funded by a Government of India scheme called the Modular Employability Scheme which ran from 2007 to 2016. These providers were mostly in low capital requirement services skilling sectors. In the period 2007-09, the National Skill Development Corporation (NSDC), was specifically created, by the Ministry of Finance, then led by Dr Subbarao Ghanta, as a public private partnership, to support early stage skill training institutions with soft loans and grants and help finance a private sector-led skills ecosystem. The institutions supported by the NSDC provided short term skills training courses – across a range of different sectors to cater to India's enormous skills requirements. Courses were certified by industry-led Sector Skills Councils. A key challenge in this ecosystem is that it grew rapidly and, to some extent, like its VET counterpart, in the absence of a clear regulatory and quality assurance framework. As a result, quality of training is varied, assessments are not entirely standardised and employment outcomes are typically low.

Using Public Economics to understand the Reasons for the Outcomes

State funding and private production of services like basic education and skilling require high quality "state capacity" to ensure value for public expenditure in terms of quality. This quality enforcement could be contractual and or enforced by law by regulatory agencies. There are at least two good reasons for state intervention here to ensure quality. The first is

that the recipients of this service are likely to be the vulnerable sections of society with low bargaining power and low capacity to demand and obtain good services from relatively more powerful private providers of the service. The second is the opposite reason, namely, that there is a likelihood of collusive behaviour between potential recipients and the providers. In fact, there is more than anecdotal evidence in India of both these phenomena. The skill development efforts of both kinds, that is, short duration and long duration were supervised by a hierarchy of the Ministry of Labour in both the Government of India and state governments. These agencies had far more urgent and immediate tasks to do at any given point in time, and quality assurance in skill development tended to be relegated to the back burner. To summarise, therefore, in India, an overwhelming majority of the VET and skill development was funded by the public exchequer with "private production" and co-existed with weak state capacity and the absence of statutory enforcement of quality. The results, therefore, were sub-optimal.

This was the background in 2014 when a separate and new Ministry Skill Development and Entrepreneurship (MSDE) was created to address these above challenges and to coordinate, steer and consolidate a fragmented skills ecosystem. Flowing from the statement of problems, the three key goals envisaged for the ministry are to achieve scale; enhance quality and employability; and address aspirational issues of skills training. In pursuing work in each of these areas, the ministry has created an overarching policy framework for skills development and entrepreneurship through instruments like the National Policy for Skill Development and Entrepreneurship and the National Skill Development Mission (NSDM). These policy instruments have been translated into a coherent programme of action, and one can begin to see some positive outcomes on the ground.

Given the earlier discussion on the demand for skilling and the supply of formal VET seats, it is obvious that, even with the availability of short duration skill development programmes, there is a need for a large-scale expansion of capacity. This capacity creation will need to take note of the dramatic changes that are happening in what is called industry 4.0 and the greater use of information technology in every sphere of human life. It will also need to be geographically rationally spread out. For example, a large number of the youth needing training are in states which do not necessarily seem to be producing the jobs. Is skilling to be provided in the origin states or locations or destination states or locations? Similarly, whether short duration training programmes can be a complete substitute for the formal VET system

for a large part of the youth is not a question that has been explicitly posed and answered in the public policy debates on this subject in the country. The author's sense is that the way forward would be both long duration and short duration programmes that are modular and flexible in design, taking note of the fact that a bulk of the targeted youth are not likely to be able to do these programmes continuously for 12 to 18 months. For all the reasons mentioned earlier, much of these capacities will be created by the private sector and much of the activity will need to be publicly funded. There will be need for a high-quality data driven Labor Market Information System which will help in both micro and macro planning; not of the old central planning kind but more of the modern decision support system kind.

In the light of the evidence on the ground regarding quality, there is need for a well-designed and robust system of accreditation and affiliation of institutions, regulation of assessment and certification and strict enforcement of these systems. However, more than any other regulatory system, this will need to be with very strong industry-connect. The ultimate employers know the precise skills that they need and would need to be important partners in the development and prescription of competencies, the design of curricula and the delivery of training. The institutional mechanism of sector skills councils put in place over the last seven to eight years is being assessed and modified as required to strengthen industry cooperation for the content of training with arms-length relationships and the enforcement of quality standards.

The third aspect of the policy goals has to do with the aspirational aspects of skilling. For a variety of reasons, one finds that skill development is still not an aspirational career choice among young people in India. This is not peculiar to India, although for historical and cultural reasons, it seems to be a bigger problem in India than in many other countries. The author will leave the cultural and sociological causes in the hands of scholars who know this better and focus on two economic reasons for this and what is being planned to address this. The first of these is the absence of a skill wage premium while the second is the dead-end that skills training in India is. One will often hear that, in India, employers are not willing to pay a premium for skilling and the skilled and the unskilled effectively get the same wages and, hence, it is not rational for anyone to spend time formally acquiring skills. The author has yet to come across serious empirical research on this in India. The anecdotal evidence that he has seen points to very rational economic behaviour on the part of the employers. This can be illustrated with what Michael Spence says in his Nobel Prize winning job-market

signalling model. In this model, employees signal their respective skills to employers by acquiring a certain degree of education or skilling. Employers will pay higher wages to more educated or skilled employees because they know that the proportion of employees with high abilities is higher among the educated and formally trained ones. For the model to work, it is necessary for education or training to convey information about the sender (employee) to the recipient (employer). The low signaling value of skills training in India is one part of this aspirational challenge. In India, those who enter vocational training typically come from some of the most vulnerable sections of society. They may have had to drop out of school due to shocks that they have faced in life, and enter vocational training to seek employment. In addition, what the employers know or perceive about the training system generally leads them to assume low skills even in the trained youth leading to the absence of skill wage premium to begin with. Once the person is employed and is observed by the employer at work and found to be skilled and appropriate for the employment, there is evidence to show that the skill wage premium kicks in.

It may be argued that, due to the fact that India's skills training courses were unable to signal quality or employability, the market for skilled workers became like Akerlof's 'market for lemons', where 'low signalling value' of skilled workers leads employers to perceive vocationally trained youth as 'lemons'. As a result, skilled Indians are unable to command a skills wage premium in industry. That is also the reason why placement outcomes are low. This perception further drives down the value of skilled workers in the market, lowering the skill wage premium and creating and sustaining a low skills equilibrium in India.

The systemic long-term answer to this is strong quality standards, enforcement of these standards and the emergence of clear signals to improve both employment and higher wages. This is likely to take time. The short-term answer is a much greater use of the apprenticeship system.

India, has had a statutory regulated apprenticeship system since 1961. However only 0.3 million (out of the labour force of about 500 million workers) are engaged as apprentices. This figure is much higher in other countries. For example, countries like the United Kingdom and the United States engage around half a million apprentices each; Germany engages three million apprentices; Japan engages 10 million and China around 20 million. Hence, there is an urgent need to scale up apprenticeship training in the country. The Indian

government is addressing this challenge through two sets of policy interventions. At the statutory level, major amendments have been made to the Apprentices Act. In addition, it has introduced the National Apprenticeship Promotion Scheme, in which a component of the basic trainee fee and the stipend paid to apprentices, are paid directly to industry to incentivise them to take on more apprentices. Indian aims to train five million apprentices by 2020 through these interventions.

The second economic reason for the low aspirational aspect of the skill or vocational education system is the absence of vertical and horizontal pathways between formal and vocational education which limit career progression of Indian youth and confine them to low paying, low skills jobs. The Indian government has been working to build bridges between the formal and vocational education streams. ITI certificate holders now have a formal way of getting general or mainstream school-leaving certificates of some state government boards and the National Institute of Open Schooling. The way is to do additional units of instruction to bridge the gap and then appear in the board exams. This opens up one pathway into mainstream education. A similar arrangement with the Central Board of Secondary Education, which is the main and most prestigious school leaving certification system in India, is under discussion. In parallel ITIs, certificate holders are allowed to join engineering diploma programmes. Diploma holders already have a pathway to engineering degree programmes. The missing part of this exercise is working out a credit transfer system which allows transporting credits from short duration skill development programs into the ITI system and educational system. So, when completed, this will open up complete routes of movement from vocational to mainstream education both of a technical and non-technical kind.

In the short term, however, this is going to be a difficult issue to resolve. In the absence of an appropriate metric for measuring "employability" of the VET/skill development programmes, securing employment at the end of the programme has become and is likely to continue as the test of "quality" of the programmes. Organised sector employment has been a relatively low absorber of India's millions of youngsters entering the work force. For example, in India only 17 per cent of the workforce is employed in the organised sector.[3]

[3] Data from the National Sample Survey Office, India.

Increasingly, therefore, employment in micro and small enterprises and in the unorganised sector, on the one hand, and self-employment and entrepreneurship, on the other, will become the key for providing jobs. There are many problems with these sectors including the following:

i. Poor quality/low wage jobs on account of outdated technology and low productivity;

ii. Small scale in India typically continues to be small forever and does not grow;

iii. Many of these entities are informal and often operating on the edges of the legal system, including the myriad labour laws;

iv. Self-employment and entrepreneurship are often not by choice and are likely to be disguised unemployment/under-employment; and

v. With the increasingly formalisation of the Indian economy, these entities are under considerable stress at this point which may impact employment prospects.

The NSDM can address a number of the three challenges but "jobs" will perhaps the only metric by which its success will be measured politically and by the media. This is a challenge for which there is no immediate answer. A part of the solution is India's attempt at "skilling for export" and the international market. There are likely to be considerable opportunities here but equally many challenges.

Conclusion

In conclusion, skills acquisition for life long employability for very large numbers is a task that India will be dealing with many years to come. It is multi-dimensional and complex. It requires a highly participatory approach and the MSDE is just about beginning to come to grips with the full complexity of this challenge. Like other challenges, India has to learn from other countries that have done this earlier than it and done it better. There are as always, peculiarities of India that will inform the final approach. However, as elsewhere, economics

and other analytical disciplines will work in India as effectively as they have worked in the rest of the world.

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