

Executive Summary

The present study on the issues of reforms in the Indian vocational education and training (VET) has been undertaken at a time when the country faces both opportunities and challenges in India's growth story. While the opportunities are in terms of a demographic dividend, the challenges are posed by persisting skill gaps: hardly 2 per cent of the Indian workforce has formally acquired skills and another 2.4 per cent workers have some technical education. It is estimated that nearly 291 million workers are required to be skilled by 2022 if India is to be a leading manufacturing economy in the world. A drastic restructuring of the Indian VET has been suggested as one of the key conduits through which the persisting skills gaps could be plugged and inclusive growth could be pursued in the midst of a demographic and structural economic transformation. The present study engages with this question by offering a reform agenda but through the adoption of certain critical elements of the historically successful German dual system (i.e. the combination of practical and theoretical vocational training). As Euler (2013) suggests, the dual principle is a core element of dual system, it may well work in other vocational educational models as well. However, the Indian labour market requirements and skill needs raise concerns that go beyond Euler's suggestions.

The three major **objectives** of the study thus are: to understand the skill related issues of Indian and German companies operating in four sectors (chemicals, automobiles, electrical and electronics, and IT) in India; to examine the German dual system of education and replicability of some elements of the same in the Indian context; and to develop workable recommendations on how an effective Indian model in terms of skill enhancement, standards and work-effectiveness could be developed and advanced.

The **methodology** adopted in the primary survey is a sectoral approach with a focus on four sectors – does automobiles, chemicals, electronics, and IT – spread across four city clusters of economic (especially manufacturing) activity in India: Chennai, Bangalore, Pune, and Mumbai. The survey was done in three states. 43 firms were surveyed, of which 12 were German companies, 7 joint ventures, 20 were Indian companies and the rest (4) were joint companies with other countries. Thirty two of the 43 enterprises in our sample employed more than 100

workers (and hence were relatively large); the rest, employ less than 100 workers (and are called 'small' when we report our survey findings). In terms of sectors, 38 companies were in manufacturing, while five of them were in services. Similarly, out of 38 total manufacturing firms surveyed, 22 were from Auto and auto related firms which accounted for the largest share in the sample. Nine were from Electrical and Electronics while about five firms were from chemical sector. If we look at the distribution of firms in terms of nature of products (capital goods, intermediate goods and consumer durables etc.), we find that most of the firms (35) are in the intermediate sector, followed by an equal distribution of firms in capital goods and consumer durables. Many of the firms belonging to the intermediate sector are suppliers of electronics, brake systems, chemicals, ICT and manufacturer of machine tools.

Findings from the primary survey

- a) Thirty six firms out of 43 revealed that they were facing some of sort of skill related problems, both in number and quality of skill.

Smaller companies are facing a major shortage of skilled persons. Small firms generally face competition for low-end skills such as fitters and electricians. Large companies face the problem of quality of skills. However, given the relatively small size of our sample, one cannot necessarily generalize across manufacturing in India.

The nature of training and availability of infrastructure varies according to the size of firms. Larger firms have fully equipped training centers, while smaller ones give functional and work-oriented training to fresher's, based on their immediate skill needs.

- b) A frequently cited deficiency in the current system of vocational education training (VET) was that there was a lack of linkage between theory and practice that needs to be resolved.
- c) To meet the skill gaps, companies resort to on-the-job training for new recruits and many firms have an in-house training programme on factory premises. They also resort to technological changes; in other words, firms replace labour with new machines.

Thirty out of 43 companies surveyed reported in-house training of some description; among these 27 are large companies (employing more than 100 workers) and the rest 3 small and medium.

In-house training was being given in all four main sectors surveyed. Out of 22 companies in automobile sector, 15 had in-house training center. Within the 9 companies in the electrical and electronic sector, 7 had some form of training facilities. The remaining 8 which are having training facilities are in chemical and IT sectors.

- d) Twenty seven companies of the 43 surveyed have expressed interest in working with other companies in skill development. Some of the companies expressed a reservation in regard to joint funding models as firms were unwilling to share their “proprietary knowledge”. Firms expect government to co-ordinate between firms and contain the *free rider* problems. Firms expressed willingness to be part of such cooperation in case of some generalized basic training. Twenty three companies expressed their interest in working with the government with respect to joint funding; but the small firms are reluctant to make any major investments in training.

Smaller firms expressed interest in cluster training for skill needs in specific industry. They expect government to play an active role in co-ordination or building nodal agencies to impart training.

- e) Some firms expressed a desire that government can ensure a return on firms investment on training by changing regulations or provide incentive to those firms which provide training.
- f) Several enterprises suggested that changes in the Apprenticeship Act are required to make the remuneration and duration of training more flexible.

Elements of German dual system that could be adopted

A distinction should be made between the dual system of education and the “dual principle”. The latter refers to the “integration of theory and practice, thinking and acting, systematic and case-based learning” (Euler, 2013:8). The great success of Germany is that the dual principle has been systematically institutionalised in the educational system of the country. It is the dual principle that must become the cornerstone of reforms in the Indian VET system, especially in secondary schools. Conception and execution is a continuum and is essentially embedded in the German dual education which could be emulated in the Indian context. This requires an integration of theory and practice in the schools and worksites. Learning venues in the Indian context should be both the class rooms and worksites/factories – this is the first lesson.

Second, while the earliest age at which vocational education is available in Germany is 10 years, it is 13 years in India: an early induction into the vocational education system is worth emulating. However, a miniscule share of all vocational trainees enters formal VET at 13; most enter at age 15. In Germany VET is not treated as distinct and separate from the general education system, a model worth emulating in the Indian context. Early introduction into the secondary school level of vocational education in the country as a whole is a second lesson.

Third, an integrated approach to the VET in which various stakeholders as social partners (private companies, the state, trade unions, employers' associations etc.) are actively involved in Germany in curriculum design, codifying skills and fixing standards. This participatory approach is desirable for India wherein the contribution of the private sector to curriculum building is non-existent. The curricula and codification of skills and standards should be developed in India in conjunction with industry and with the full participation of various stakeholders.

Fourth, Teachers' Training is a strong component of the German dual system which is to be adopted in India. India's VET faces serious shortage of teachers. Even more serious is the problem that teachers themselves have had little or no practical industry experience, which is the opposite of the situation in Germany or China. China's success as a manufacturing nation is partly founded upon good industry exposition of both students and instructors.

Fifth, the VET should provide a vertical and horizontal mobility for progressively gaining further qualifications which would in turn inspire parents and students to treat the vocational pass outs dignified. This problem may now get addressed in India on account of the introduction of a national vocational education qualification framework.

Sixth, the public-private partnership model as integral to the German dual system with joint curriculum design, codification of skills, and joint certification should be followed in the Indian case where at the movement is solely governed by the Ministry of Human Resource Development.

Seventh, while more than 70 per cent of training costs are met by the private sector in Germany, it is abysmally low in India. The public-private participation in sharing the cost of training as in Germany should be adopted in the Indian case as well. This should be read along the lines of 19 large companies which reported their willing to earmark funds for skill development joint funding.

Only 3 small companies expressed their interest in joint funding which implies they require support from the government.

Finally, the regulatory system in Germany with the involvement of the federal, regional and local governments and the various stakeholders offers lessons for the development of an institutionally and legally embedded VET in India. Indian VET Act can be passed along the lines of German VET Act which would integrate governance strategies.

Recommendations

Vocational education in the school system

Germany's dual system of education is embedded in the school system, and at least half of all school children are part of the vocational stream. This fact offers an important lesson for India, since the Indian school system did not allow (until the recent rollout of the vocational qualification framework by the Ministry of Human Resource Development) for VE at secondary level (classes 9-10).

Assuring Duality Principles

The dual principal is needed to be implemented in India to meet the serious skill shortage Indian firms are facing. Drawing on the spirit of Euler's duality principle and the German experience steps are required to be taken by Government to bridge the gap between theory and practice, and private enterprises need to proactively collaborate in this task.

Partnership between Government and Private Enterprises

A significant element of the dual system in Germany is active collaboration between Governments and private enterprises which is desirable and replicable in the Indian context.

There have been many initiatives for such collaboration on the PPP model (public private partnership) in respect of government Industrial Training Institutes (ITIs) since 2009. The National Skill Development Council (NSDC) – which is owned 51 per cent by industry chambers and 49 per cent by the Government of India – has been a successful initiative in this sphere. However, the most promising example of partnership (found in our survey) which provides training to a large number of trainees was that of Tata Motors, which has adopted over 100 government ITIs, in the auto trade, and both trainees and the company have benefitted from this collaboration. The other excellent example of government/private enterprise participation in training is the ‘Campus Connect’ program of Infosys, the Indian software giant, which is a first of its kind industry-academia interaction program. Sixty engineering colleges all over India have taken part in this program, with more than 275,000 students and nearly 10,000 faculty members benefitting from an aligning process between engineering talents and industry requirements. SAP labs India (P) Ltd. too has tie-ups across colleges in India.

Funding: public-private participation

The most significant element in the German dual system that is most desirable in the Indian context is the partnership between government and business in sharing the vocational training cost. Almost four-fifths of the total cost of VET in Germany is borne by the private sector – which alone should be a salutary lesson to private firms in India. In order to attract private investments in the training sector, the government would do well to introduce the necessary institutional-legal governance structures. There has already been action in this direction. Members of the Federation of Indian Chamber of Commerce and Industries (FICCI), individual firms like Tata Motors and so on have already adopted many Industrial Training Institutes (ITIs) in India and have expressed interest in running many more.

Industries and their associations should be encouraged to help revamp teaching materials, practical training and occupational standards in the light of their skill needs. Even before the National Skills Qualification Framework becomes mandatory, local industry must contribute in the following four ways: a) offer teachers/trainers from industry to vocational school courses and to ITIs to meet the shortfall of teacher/trainee who have practical industry experience; b) local industry must be encouraged proactively by the central and state

governments to introduce new courses relevant to the needs to local industry, and contribute to the design of curriculum for such courses; c) industry should be required as part of its corporate social responsibility (as articulated in the new Company Law passed by parliament in 2013) to provide internships to both students of vocational education in school as well as ITIs; and d) based on such application of the duality principle, enterprises should provide counseling to students of such vocational schools/ITIs in respect of job placement. These actions can all be taken immediately, without waiting for any law.

In our primary survey we found that while large firms have the financial muscle to conduct in-firm training, smaller firms do not. Therefore, appropriate mechanisms need to be developed to facilitate training for smaller firms.

What is important in this context is that the duality principle should be made mandatory in which the state and industry associations should play a key role. The government and private companies should come to a consensus regarding the norms to be followed with respect to the structure and content of the course and how they should be rendered integral to the practical training.

Cluster-based training for small firms

Small firms can develop cluster based approaches; industry associations are required to support such approaches through offers of funds with the help of state initiatives. This would supplement the work of the central government's Ministry of Micro, Small and Medium Enterprises (MSME), which runs cluster-development programs for MSMEs.

A National Training Fund

The German construction industry pays a small tax, earmarked for use by the industry for purposes of training. In fact, 63 other countries of the world have an earmarked tax on companies, which is used to reimburse the training costs of firms. India should similarly adopt a National Training Fund (which has been proposed in the 12th Five Year Plan's chapter on skill development (Planning Commission, 2013). NSDC, FICCI and CII should cooperate with

think-tanks working on employment/employability issues to develop the design of a NTF for India to address the long-term problem of skill shortages.

A legally-embedded VET system

Germany has had a VET Act for several decades, which underlines the importance accorded to VET by the state. China has had a similar Act since 1996. India is in urgent need for such a legally-embedded VET system. It would be particularly helpful in mandating private sector participation in training. It could also provide legal sanction to the introduction of joint certification by government and private institutions of skills, which is another feature of Germany's VET system. Such certification would facilitate the placement of students/trainees in enterprises, as the latter would have greater confidence in the competencies of trainees who they have certified.