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Skill India
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National Skill Development Corporation

Prime Minister Distributes Krishi Karman Awards



The Prime Minister, Shri Narendra Modi presenting the Krishi Karman Awards in Tumkur, Karnataka on 2 January, 2020.

The Prime Minister Shri Narendra Modi distributed Krishi Karman Awards for Progressive Farmers and Commendation Awards to the states at a public meeting in Tumkur, Karnataka on 2, January 2020. He also released the 3rd installment of PM-KISAN (Pradhan Mantri Kisan Samman Nidhi) of Rs 3000 for the period of December 2019 - March 2020. This will benefit approximately 6 crore farmers. He also distributed Kisan Credit Cards (KCC) to select farmers of Karnataka. The Prime Minister handed over the Certificates to beneficiaries under PM-KISAN from 8 States / UTs.

The Prime Minister said that the land of Karnataka witnessed a historic moment when money under the PM-KISAN scheme was distributed directly into the personal accounts of nearly 6 crore farmers in the country. The Prime Minister said a total of Rs 12 thousand crores has been deposited under the third tranche of the scheme.

Prime Minister recalled that there was also a period in the country, when one rupee was sent for the poor in the country and only 15 paise out of it reached the beneficiaries. And now he said that the money is reaching the poor directly without the intervention of the middlemen.

The Prime Minister said that the irrigation projects that have been stalled for several decades are now being implemented. He also said that the centre has always given priority to the interests of our farmers with the schemes like crop insurance, soil health cards and 100 Percent Neem Coated Urea.

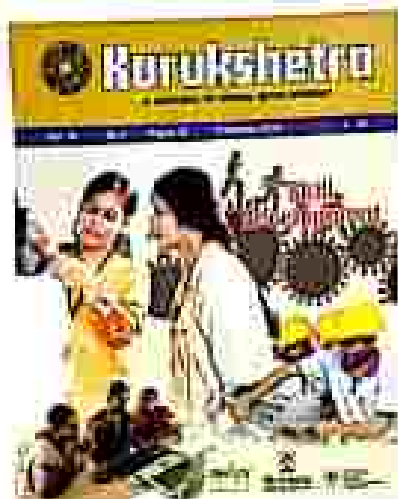
He said that due to the efforts of the Government, both the production and export of spices from India has increased considerably. He said that apart from horticulture, South India also has a large share in the production of pulses, oil and coarse grains. The Prime Minister said, "Seed hubs have been built to promote pulses production in India, of which more than 30 centres are located in Karnataka, Andhra Pradesh, Kerala, Tamil Nadu and Telangana itself."

Referring to the Government's efforts on Fisheries sector, Prime Minister said the government is working at three levels to strengthen the sector. First, encouraging fisheries in villages through financial assistance to fishermen. Second, modernising the fishing boats under the Blue Revolution Scheme. And third, constructing modern infrastructure related to fish trade and business.

The Prime Minister said, "fishermen have been linked to the Kisan Credit Card facility. New fishing harbours are being built in large rivers and in the sea for the convenience of fish farmers. A special fund of Rs. 7500 crore has also been created for modern infrastructure. Fishermen's boats are being modernised for deep sea fishing and navigation devices are being installed in boats for the protection of fishermen with the help of ISRO."

Keeping in view the nutritional security of the country, Prime Minister requested to create a new category in the Krishi Karman Awards, for Nutri Cereals, Horticulture and Organic Agriculture. This will give impetus to people and states doing better work in these areas, he added.

(Source: PIB)



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Editorial

As the world steps into a new decade, India stands on the cusp of becoming a global power of the 21st century. With a favourable demographic dividend and increasing Percentage of youth in the workforce, the potential for growth and development is at its highest. It is crucial for the country to take advantage of this opportunity and bring the nation on the path of rising socio-economic progress. However, the formidable challenge that stands in front of the country today is of utilising this potential and focusing the energy of the growing workforce in a productive manner. To achieve this aim, Skill Development is vital for the enhancement of the workforce and to bring in the unused resources into the mainstream.

Addressing this issue, Hon'ble Prime Minister launched the Skill India Mission on July 15, 2015 and formulated a Ministry of Skill Development and Entrepreneurship (MSDE) to oversee, implement and coordinate various initiatives introduced along similar lines. The programme has been able to instil a sense of self confidence in the youth of the country and have provided them with a platform to support themselves with the skill training. Under the aegis of the MSDE, flagship scheme like Pradhan Mantri Kaushal Vikas Yojana (PMKVY), National Skill Development Corporation (NSDC), National Scheme Development Fund (NSDF), Sector Skill Council (SSC), National Skill Development Agency (NSDA) among others were launched for holistic skill enhancement and training as well as to encourage entrepreneurship. The Union Cabinet also approved the National Policy for Skill Development and Entrepreneurship in 2015 "to create an ecosystem of empowerment by skilling on a large scale and to promote a culture of innovation based entrepreneurship which can generate wealth and employment."

A Skill Development culture needs to be built from bottom to top. It should be integrated within the education system wherein students at school and college levels master at least one job skill and gain a certification of proficiency. Similarly, vocational education for school dropouts and those pursuing higher education post school, can be used to impart niche skills along with a set of specific competencies for comprehensive growth. Vocationalisation of School Education, a centrally sponsored scheme, is an important step towards preparing educated, employable and competitive human resource for various sectors of economy. Initiatives such as YUVA by Delhi Police for rehabilitation of youth in conflict with law through development of soft skills, vocational training, basic computer knowledge and skill enhancement is one such example.

Skill Development and Entrepreneurship training for women is imperative for narrowing the gender gap, enriching the future generations and empowering women. Exposure is necessary for women entrepreneurs to move from traditional fields of employment towards new-age business ideas and skills. It is important to note that Skill Development needs to be amalgamated with new innovations and technology. New age skills such as Artificial Intelligence, machine learning, 3D printing, Data Science should be promoted to prepare the country's youth for future advancements and explore uncharted territories of science and technology for faster, sustainable and inclusive development of the people. Healthcare is critical to an efficient workforce. Skill Development in healthcare is much-needed, considering the shortage of health professionals. There is a requirement for skilling, reskilling and upskilling as well as establishment of urgent mechanisms for healthcare facilities to run smoothly and reach to all parts of the country.

For India to become the skill capital of the world, skilling of rural India assumes great importance so as to enable the rural workforce in realising their potential and become part of the country's progress.

INITIATIVES TO PROMOTE SKILL DEVELOPMENT AND ENTREPRENEURSHIP

Dr. Mahendra Nath Pandey

Comprehensive reforms have come into play to build awareness around skilling and we are witnessing a mind shift towards vocational training. It is my faith that as facilitators, we will be able to bring together the industry and youth to assure them with a future led by a robust skilling framework. The roadmap to making India the 'Skill Capital of the World' is fast becoming fruition reality.

On July 15, 2015, Hon'ble Prime Minister Shri Narendra Modi etched out his vision of Skill India, a movement to take India on the fast track to economic growth and progress. As the nodal ministry charged with fulfilling this grand vision, the Ministry of Skill Development and Entrepreneurship (MSDE) has been responsible for all skill development efforts across the country, from building the vocational and technical training framework to skill up-gradation, building new skills not only for existing jobs but also for new job roles that have arisen with Industry 4.0.

Our vision statement is "to create an ecosystem of empowerment by skilling on a large scale at speed with high standards and to promote a culture of innovation based entrepreneurship which can generate wealth and employment so as to ensure sustainable livelihood for all citizens in the country". With this in sight, the Ministry laid special emphasis in 2019 on convergence, increasing scale, meeting aspirations of the youth and improving the quality of skilling. This has led to enhanced skilling opportunities and the creation of a trained workforce in the country, besides inculcating the entrepreneurial spirit among the public at large.

Hon'ble Prime Minister Shri Narendra Modi launched the Skill India campaign in July 2015, with

an aim to train India's youth in market-relevant skills empowering them for the New India and the global market requirements. The programme has been able to instill a sense of self confidence in the youth of the country and have provided them with a platform to support themselves with the skill training of their choice. According to a 2015-16 report released by MSDE, less than 5 per cent of India's workforce is formally skilled. Compare this to South Korea (96 per cent), Japan (80 per cent), Germany (75 per cent), the United Kingdom (68 per cent) and the United States (52 per cent), and we have a lot of ground to cover. Our aim is to increase these numbers, adopt successful models from these nations and empower many more of the country's youth.

Driving convergence across various schemes of vocational training, National Skill Development Mission formulated in 2014, gave a fillip to the skill development and entrepreneurship efforts in the country. As a result of the tenacious efforts under NSDM, more than one crore youth is being imparted with skills training every year under various programmes of the Central Government.

Today, technology also plays an integral role in enabling one common process for all through the newly introduced Skill India Portal which has converged skilling data from various Central



Ministries, State Governments, Private Training Providers and Corporates on a single platform. This has enabled data-driven decision making by policymakers and removed information asymmetry in the skilling ecosystem, emerging as a single touch point for the country's citizens to access skilling opportunities and seeking related services.

Among the various initiatives and programmes under the umbrella of Skill India, much-needed reforms have been introduced to apprenticeship training. This has been instrumental in catering to the needs of both a burgeoning talent pool and the industry that seeks trained youth. The Guru-Shishya Parampara has been the essence of the Indian education system dating back to ancient times when students learnt from textbooks and through experiences, helping reality mirror thought. It is an acknowledgement of this tradition that the Government introduced comprehensive reforms in Apprenticeship Act, 1951. To recognise and celebrate the contributions of the trainers and gurus towards Skill India, we also organised the first-ever Kaushalcharya Awards to felicitate trainers from different sectors for their exceptional contribution towards creating a future-ready skilled workforce. These trainers have helped thousands of youth and have inspired many more technically-equipped and experienced people to join the Skill India Mission.

Industrial giants Germany and Japan, where the working age population is a fraction of that of India's, have three million and 10 million apprentices, respectively. China has 20 million. India has just 0.4 million, which amounts to less than 0.1 per cent of the employed workforce. This highlights the potential that the demographic advantage of a 'young' nation like ours has. It is estimated that Indian industry can absorb 10 million apprentices annually, proving that there is huge capability, potential and scope for an apprenticeship-based approach. The country's youth will trigger this burst to the creation of a modern industrial ecosystem.

The New India of our Hon'ble Prime Minister's dream is also attuned towards skill training with demands of Industry 4.0. The new Industrial Age is boosted by unprecedented technological advancements in Artificial Intelligence, automation, machine learning, robotics and blockchain. It calls for an urgent need of trained professionals in varied fields where skills are based on the demands of the present economy. Our visionary programmes

like Make in India, Start-up India and Skill India are identifying the talent pool for positioning the country as the next big global destination for investors.

India is soon expected to rank among the world's top three growing economies and the top three manufacturing destinations. The MSDE is also working closely with Central Public Service Units for their support, particularly in bolstering the National Apprenticeship Promotion Scheme (NAPS), so we can stay ahead of the curve if we are to scale the peak of growth. Launched in August 2016, NAPS acts as a guide of basic training and on-the-job practical experience at workplace with various industries. The main objective of the scheme is to promote apprenticeship training and to increase the engagement of apprentices. This has been one of the most sustainable models of skill development with great outcomes worldwide.

In November 2016, MSDE introduced STRIVE, Skills Strengthening for Industrial Value Enhancement, a World Bank funded project aimed at creating awareness through industry clusters and geographical chambers that would address the challenge of involvement of micro, small and medium-sized enterprises (MSMEs). The project is also aimed at integrating and enhancing delivery quality of Industrial Training Institutes (ITIs), constituted under the Directorate General of Employment & Training (DGT).

To keep up with relevant market demands, talent will need to reinvent itself with agility in this changed landscape of job opportunities. The Skill India Mission received a huge boost from its in-plant orientation programmes, including the Recognition of Prior Learning (RPL), which has successfully certified lakhs of candidates in the unorganised sector. The objective of this Skill Certification Scheme is to bring about a shift from the unorganised sector to an organised economy by formally recognising the existing skills of the youth in our nation through a process of assessment and certification programme. This will also entail a module on upgradation of skillsets making them more efficient in their work leading to a better livelihood and bringing respect to their work. RPL recognises and certifies a person's previous learning and work experience as per established standards. It is an effort to formalise the organised sector of the industry to create a sustainable work

ecosystem. It is a testament of the effectiveness of the programme and the efforts of all the people involved in its successful implementation that lakhs of candidates have been certified across the country, including in the distant Andaman & Nicobar Islands. Whether it is recognising the employees of Rashtrapati Bhawan, Supreme Court; attendants in Rajdhani and Shatabdi trains in Indian Railways, Porters on selected airports; artisans, weavers and craftsmen from across geographies in the country or service providers available on UrbanClap – Skill India is ensuring that standards and productivity is ensured across varied segments and job roles.

A number of exemplary contributions have additionally made it possible to achieve such success. Aimed at training farmers with small landholdings, the Maharashtra State Skill Development Society (MSSDS) RPL Project registered around 95,032 certifications under the job role of Group Farming Practitioner. The Grain Tarang Employability Training Services envisioned towards creation of Business Development Service (BDS) network for small and marginal farmers recorded 27,063 candidates eligible for certification.

The RPL project with the Ministry of Power (SAUBHAGYA) aimed at achieving universal household electrification registered over 27,215 candidate certifications under Lineman Distribution and Technical Helper Distribution job roles. The RPL project with CREDAI, an initiative to fulfil the gap and upgrade skills of the construction workers listed over 14,135 certifications of candidates under Assistant Bar Bender & Steel Fixer, Assistant Shuttering Carpenter and Assistant Mason. Over 2.81 million candidates have been enrolled under the project so far.

The marker of the RPL programme success is not numbers alone, it is the tireless efforts of the

implementing agencies and the partner organisations that has brought such good results.

In keeping with the vision of inclusive development, the Ministry trained its focus on regions like Jammu & Kashmir (J&K) and LWE (Left Wing Extremist) regions. To bring the union territory of J&K under skill training, officials of MSDE and the State Skill Development Mission (JKSSDM) met to discuss steps to ensure 100 per cent coverage of all eligible beneficiaries from the region and the way forward. Officials from various organisations, including NSDC, Department of Jan Shiksha Sansthan (DJSS) and various Sector Skill Councils (SSCs) were present in the meeting and came up with long term concepts to promote skilling. Additionally, National Skill Training Institute (NSTI) Jammu has been made operational and trainers are further being trained to impart skill training under National Skills Qualification Framework (NSQF). For better outreach of skill training to all parts of the country, a NSTI extension centre was also opened in Leh. Ministry is taking all possible steps to create a precision trained workforce in the nation and all these steps are a part of this strategy.

Global investors are viewing India as a business destination. Strong fundamentals have given our economy the right push to create a stable business environment; and market-oriented reforms and initiatives like Make in India, Digital India, Mudra Yojana, Atal Innovation Mission, 50-minute loan, Stand-up India and Start-Up India are encouraging entrepreneurship among Indians. Bilateral meetings have been organised at regular intervals between officials of MSDE and their counterparts in countries like Singapore, the UAE, Japan, Canada and Australia to boost capacity for skilled workforce in the country. We are working closely on transnational standards



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EMPOWERING
YOUTH WITH SKILL TRAINING FOR
EMPLOYABILITY
AND BETTER LIVELIHOOD.

to bridge demand for skilled workforce in these countries by collaborating and supplying them with trained professionals.

About 54 per cent of our population is under the age of 35 and close to 15 million enter the workforce every year. The only way enough jobs can be created for such a huge number consistently is by creating an environment for entrepreneurship and innovation, which encourages young people to aspire to become job-creators and employers. In the last few years, we have worked tirelessly to bridge the skill gap.

Entrepreneurship and entrepreneurs are central to the growth and development of a society. Economists have stressed how economic backwardness of a region can be attributed to its lack of entrepreneurs. The greater the number of entrepreneurs the more the development of an area. In the past few years, we have been working persistently to bridge the skill gap by giving entrepreneurs easy access to funding, providing the right mentorship and improving ease of doing business in the country.

We also instituted the National Entrepreneurship Awards in 2016 to honour young entrepreneurs for their contribution to create an ecosystem of entrepreneurship development. We have been able to scale up the participation in the flagship event aligned with Prime Minister's vision of creating a skilled India, where the youth is not only self-employed but also creates jobs for others. MSDE conferred 30 young entrepreneurs and six organizations and individuals for building entrepreneurship ecosystem in the country. Concerted effort among 12 partner institutes across the country ensured a significant increase in the number of applications. The success of this remarkable effort can be seen in the 75 per cent rise in the applications completed for National Entrepreneurship Awards 2019. It is a reflection of the stature of the coveted awards among young entrepreneurs.

We have undertaken consistent and strategic efforts to promote entrepreneurship and provide necessary support to skilled candidates interested in starting their enterprise, including the common norms for skill development, which recognises self-employment at par with placement. Likewise, introducing a 20-hour mandatory module on entrepreneurship in short-term skill training programme, converting Pradhan Mantri Kaushal Kendras (PMKKs) into Entrepreneurship Hubs by

providing trainees mentoring and handholding support, are efforts in this direction.

MSDE and National Skill Development Corporation (NSDC) also launched India's first National Skills Competition – IndiaSkills, a biennial competition. This year, IndiaSkills 2020 will provide a platform for skilled and talented Indian youth to showcase their abilities at regional and national level competitions in over 50 skills. Regional legs of the competitions are organized across four zones, culminating at the national competition in Delhi. Winners of IndiaSkills will then get a chance to represent the country at the WorldSkills International Competition to be held in China in 2021. WorldSkills International Kazan was held in 2019 and the 22 winners of IndiaSkills 2018 and their experts had represented the country with their outstanding performance at this global platform also known as the Olympics of skills. India won one gold, one silver, two bronze and 15 Medallions of Excellence. India was ranked 13th among 63 countries that participated in the competition, making it the best finish for the country in the coveted skill championship. They were felicitated with certificates and cash prizes for their remarkable performance.

MSDE has also scaled up the IITs Dual System Training (DST) scheme to at least 1000 IITs. The DST is a model of training inspired by the German method and provides industry exposure through industry led trainings to students of the various IITs. In a bid to keep up with the times, MSDE launched new age courses in 12 NSTIs. These include Internet of Things – Smart Healthcare; Internet of Things – Smart Cities; 3D printing; drone pilots; solar technicians and geo-informatics among many others.

Comprehensive reforms have come into play to build awareness around skilling and we are witnessing a mind shift towards vocational training. It is my faith that as facilitators, we will be able to bring together the industry and youth to assure them with a future led by a robust skilling framework. The roadmap to making India the 'Skill Capital of the World' is fast becoming fruition reality. We have pledged to provide constant support to the youth of our nation who are joining the movement for building a "Kushal Bharat, Kaushal Bharat".

(The author is the Union Minister of Skill Development and Entrepreneurship. Email: minister_msde@gov.in, drmpandeymp@gmail.com)



SKILL DEVELOPMENT IN INDIA: THOUGHTS AND IDEAS

Parag Bujta, Mukesh Kumar Gupta, Dr. Sazahr Khurana and Ms. Ankita Saxena

India has made huge progress in the field of skilling, but keeping in mind its huge potential and large number of people to be skilled, sustained and innovative efforts in right earnest involving all stakeholders is the need of the hour. For India to become the skill capital of the world, skilling of rural India assumes great importance as it would also enhance employability, employment and entrepreneurial activity in rural areas, where majority of the population still resides.

Skill development leads to improved productivity, employment, self-employment, economic growth and consequently poverty reduction. Skill development, especially in a country like India with its large young population, which is estimated to be 34.33 per cent of total population in 2020,¹ assumes greater importance to effectively reap the demographic dividend. Skilling the growing workforce would improve their productivity and employability which, in turn, will improve incomes and the quality of life.

With majority of population living in rural areas, the need for sustained skilling, up-skilling and re-skilling is very much the need of the hour and assumes great importance for rural India. While most of the skilling initiatives being undertaken today have universal reach, there are also dedicated programmes for skilling in rural areas.

Keeping in mind the large numbers required to be skilled, there emerges a need to strengthen the skilling ecosystem and introduce innovative measures. The various initiatives which could be considered to strengthen the skilling ecosystem include measures for making skill aspirational, introducing and popularising a hybrid system of online skilling to complement the traditional brick and mortar skilling ecosystem, linking up skilling with entrepreneurship, skilling, up-skilling and re-skilling, linking skilling to potential industry demand both in India and abroad, engaging private sector and industry in skilling and improving the quality of training.

Skilling to be Made Aspirational

To build a sustainable skilling ecosystem, skilling along with vocational education needs to be made aspirational and sought after. Today, vocational courses have low acceptability due to several reasons including lack of well-defined



career progression and low awareness among the stakeholders. It is perceived as a preferred option for those who have not succeeded in the formal education system or have opted out of it. Information, Education and Communication (IEC) efforts to sensitize all the stakeholders would go a long way in making skilling and vocational education aspirational. For example, in the recently concluded "WorldSkills" competition at Kazan,

India's performance has improved substantially. These skilling competitions should be encouraged at all levels and performances should be showcased to create more world champions in order to make skilling acceptable and aspirational.

To strengthen the skilling ecosystem, we also need to understand youth preferences and gauge their aptitude and interest. Mapping aspirations of the youth is important for sustainable skill development and making the skilling ecosystem more demand driven. The use of psychometric tests along with personal counseling, career guidance and awareness drives in rural areas could help assess and shape youth aspirations. At the same time, regular skill gap studies and assessment of industry demand would go a long way in matching demand with supply and shaping policies.

Reskilling and Upskilling

Along with fresh skilling, India requires a sustainable re-skilling and up-skilling ecosystem, which besides making the workforce present and future ready, would also address the concerns of women who for several reasons including family commitments, take a break from work and then want to rejoin. The skilling ecosystem also needs to address the requirements of persons retiring early and those seeking career progressions.

Online Skilling to be Encouraged

Complementing the existing skilling ecosystem with increased use of Online Skilling which, in a technologically-driven environment, appears to be a viable, cost effective solution that would enable a person to select a trade of his/her choice, with flexible time and pace of learning and not be bound by courses offered by training

centres in his/her vicinity should be encouraged. Online skilling would increase the span of both horizontal as well as vertical reach of youth to skill courses. This also implies that online skilling would improve the reach of rural youth to formal training system as they would be able to access these training courses online. In rural areas where personal internet connectivity may not be fully established, an Integrated On-Premises Training Module can be used at the existing Skill Centres, Common Service Centres (CSCs) or other E-kiosks.

A possible way forward is to set up a hybrid model of online skilling having online theory sessions along with practical training videos and also practical hands-on training model, especially for manufacturing sector skills. As regards to the service sector, the programmes can be totally online including assessment and certification. Online skilling would require an integrated online skilling platform which would have the National Skill Qualification Framework (NSQF) approved courses on it that could be accessed by the potential trainees. The existing online skilling courses being run by government and private players could also be put onboard this online skilling platform with the private players being encouraged to make their courses NSQF compliant. The online skilling platform would also have details of the practical training centres for candidates to choose from. Practical training could be provided in existing skilling centres, ITIs, Polytechnics, Industry, etc. In addition, private sector may also be persuaded to set up these Practical Training Centres which could also double as full-fledged skilling centres & even production centres. A robust and continuous assessment and certification framework would also need to be set up.



The role of private sector, industry, industry associations and SSCs would assume great significance in designing the courses and curriculum for online skilling and continuously updating it to keep it relevant & future ready. Government would have to take a lead in promoting this online skilling platform and preparing the courses & curriculums. Private sector partnership in the same should also be encouraged.



Private Sector Participation

Private sector and industry participation should be leveraged in strengthening the skilling ecosystem. Enhanced industry linkages could lead to more employment opportunities for skilled candidates as they would be industry ready. Industry associations and local industry chambers could also be engaged for providing entrepreneurial mentorship and hand-holding for the candidates who, after skilling, would like to start their own venture and become job creators rather than job seekers.

Linking Skill to Entrepreneurship

To ensure employability, employment, entrepreneurship and self-employment amongst skilled youth the skilling curriculum should have a fair dose of entrepreneurship and knowhow to start one's own enterprise. Skilling should create not only job seekers but also job creators and job givers. Self Help Groups (SHGs), their federations, NGOs, besides Industry associations, Chambers of Commerce, Sector Skill Councils, etc., should also be roped in to provide entrepreneurial handholding especially in rural areas, where we need to create more diverse employment opportunities. Necessary credit support along with market linkages also needs to be provided. Setting up of incubation centres and cluster-based approach would give great impetus to this. Soft-skills training is also an indispensable part of skilling for both employment as well as entrepreneurship.

Role of Apprenticeship in Skilling

The need to strengthen and popularize apprenticeships in India is immense and immediate as it is one of the best ways of on-the-job skilling and increasing the employability of a person manifold. It is a win-win situation as the industry also gets a ready pool of trained, industry ready workforce. Apprenticeships needs to be popularised and incentivized with measures like preference in recruitment, higher stipends for female apprentices and assistance to Micro, Small and Medium Enterprises (MSME) engaging apprentices. Besides increasing apprenticeships, this would also lead to increased female labour force participation.

Integrated Portal of Job Seekers and Job Givers

There is also a need to have a single integrated portal wherein all data of job seekers as well as job givers is available and regularly updated which will go a long way in augmenting matchmaking and placement of trained youth. It would also help industry get trained workforce of their choice and job seekers to search employment in location of their choice as this portal would become the go-to choice for both job seekers and job givers.

Skilling for Future Jobs

In the age of rapid technological advancements, it is also immensely important to pre-

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Skilling for Global Markets

India should leverage its demographic dividend by skilling labour force for global markets which would support the vision of making India the 'Skill Capital' of the world. As Indian labour would become equipped with international industry standards and processes, increased number of Multi-National Companies and overseas producers would be encouraged to set up their manufacturing units in the country which would in-turn support the 'Make in India' campaign of the government.

Skilling for global markets can be facilitated by setting up specialized market research cells which would conduct demand-supply gap analysis in major employing sectors in different economies, thereby identifying opportunities for the Indian labour force and also the skill sets required to equip them for these opportunities. The use of our diplomatic missions abroad should also be strengthened for necessary market information and connecting with the governments and companies

in need of trained workforce situated there, and also for projecting future requirements.

To train youth with skills specific to international market demands, specialized skill hubs could be set up which would impart training as per technical and non-technical skill requirements. Industry help would be required to set up these training hubs for which private sector participation should be encouraged. Encouraging government to government tie ups could ensure better protection of workers' rights. Work in this direction is ongoing and needs to be strengthened and scaled up.

Conclusion

India has made huge progress in the field of skilling, but keeping in mind its huge potential and large number of people to be skilled, sustained and innovative efforts in right earnest involving all stakeholders is the need of the hour. For India to become the skill capital of the world, skilling of rural India assumes great importance as it would also enhance employability, employment and entrepreneurial activity in rural areas, where majority of the population still resides.

Footnote

1. Youth in India, 2019, Ministry of Statistics & Programme Implementation

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SKILL DEVELOPMENT: A WAY FORWARD

Dr. Sanku K. THAKUR and Dr. Subramani Prathy

The demographic advantage of India in a real sense can be transformed into demographic dividend by imparting right skills to the youth in tune with the current and future skills in demand. Though there has been a significant focus on skill development, the employability of skilled manpower has remained a big challenge. In such a situation, skill development needs to be more comprehensive by including industry alliances for internship and employable skills within its ambit.

The National Policy for Skill Development and Entrepreneurship 2015 mentions that more than 54 per cent of India's population is below 25 years of age and 62 per cent of India's population is aged between 15 and 59 years. This demographic dividend is expected to last for the next 25 years. The policy also says that the average age of the population in India is 29 years as against 40 years in USA, 46 years in Europe and 47 years in Japan. Labour force in the industrialized world is expected to decline by 4 per cent, while in India it will increase by 32 percent.¹ The demographic advantage of India in a real sense can be transformed into demographic dividend by imparting right skills to the youth in tune with the current and future skills in demand.

India has a total workforce of about 52 crore out of which 49 per cent are employed in agriculture, however, their contribution is only 15 per cent of the GVA (Gross Value Added). In

China only 21 per cent of workforce is employed in agriculture.² Growth has often been highest in sectors that are relatively capital intensive, such as automobiles and pharmaceuticals. There is a need to increase the pace of generating good quality jobs to cater to the growing workforce, their rising aspirations and to absorb out-migration of labour from agriculture. By some estimates, the Indian economy will need to generate nearly 70 lakh jobs annually to absorb the net addition to the workforce. Considering the shift of labour force from low productivity employment, 80-90 lakh new jobs will be needed in the coming years.³

Globalisation, growing domestic market, automation and adoption of new technologies like AI, Robotics and Internet of Things by various segments of the economy have significantly impacted skills in demand. Though there has been a significant focus on skill development, the employability of skilled manpower has remained

a big challenge. As per India Skills Report 2019, the employability of final year students of ITIs and polytechnic has declined in recent years and Electronics and Communication Engineering (ECE) and IT courses have the highest employability rates. Lack of focus on industry linkages and core employable skills were the main reasons for the downturn in employability. This is corroborated by the fact that engineering courses which are linked with industries or corporates have higher employability rates. The report also revealed that around 43 per cent of engineers from various institutes across the country had remained unemployed. In such a situation, skill development needs to be more comprehensive by including industry alliances for internship and employable skills within its ambit.

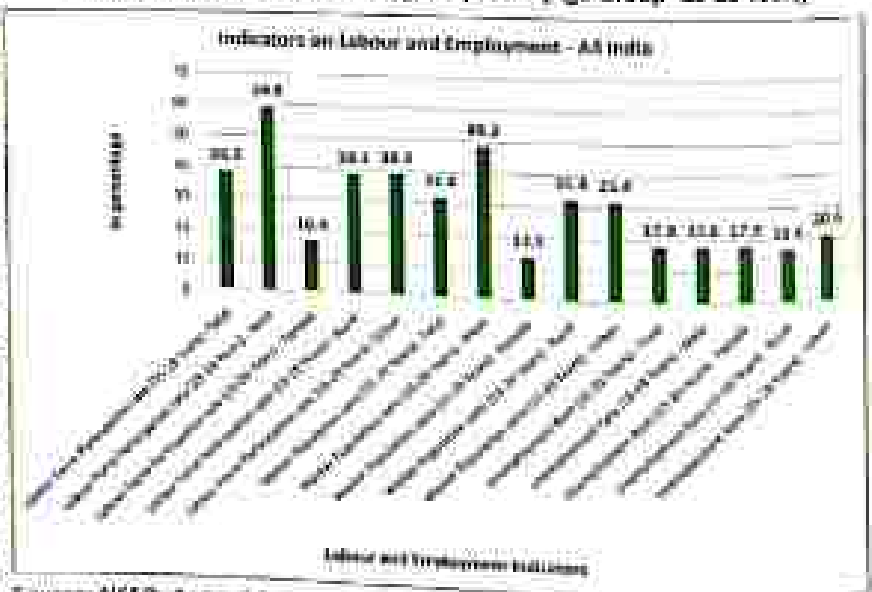
Aim of any skill development programme is to reduce unemployment and make a higher per cent of population economically active. Labour Force Participation Rate is one of the key indicators, which explains the conditions of labour market and the extent of population that is economically active. The Labour Force Participation Rate (LFPR) is defined as the percentage of persons in the labour force among the persons in the population. LFPR for the persons 15 years or above was nearly 49.8 per cent. The LFPR for persons of age 15–29 years was 38.2 per cent in 2017–18. LFPR had declined over the years by 5–6 per cent from 2011–12 to 2017–18. Workforce including the persons who worked for a relatively long part of a year constituted around 34.7 per cent in the year 2017–18. Worker Population Ratio (WPR) in India had also decreased from around 42.3 per cent in 1977–78 to 34.7 per cent in 2017–18. WPR during 2017–18 for the persons of age 15–29 years was 31.4 per cent.⁴

Unemployment Rate, defined as the percentage of unemployed person in the labour force, was 6.1 per cent in 2017–18 and if, one considers unemployment as a percentage of population, around 2.2 per cent of total population was unemployed as per latest NSSO survey in 2017–18. NSSO data reveals that Unemployment Rate was higher among the educated than among those whose educational

level was lower than secondary. Furthermore, the Unemployment Rate among the youth has increased over the years. During 2004–05 to 2011–12, the Unemployment Rate among rural youth was much higher as compared to that in the overall population. Unemployment Rate among the rural male youth increased from around 5 per cent to 17.4 per cent from 2011–12 to 2017–18 and similarly, in urban areas Unemployment Rate among urban male had increased from 8.8 per cent to 18.7 per cent during 2011–12 to 2017–18. Unemployment Rate of female youth in rural areas also increased by around 13 per cent during the above-mentioned period. This indicates that despite increasing pace of skill development, unemployment rate among the youth has not declined. Table 1 has mentioned LFPR and WPR among the persons of age group 15–29 years. The people in this age group are the most likely target group of skill development programmes in India. From Table 1, it can be inferred that more than 60 per cent population of the mentioned age-group are not in the labour force.

If, one examines the distribution of workers by status of employment in terms of broad categories like self-employment, regular wage/salaried employees and casual labourer, it is observed that around 24.90 per cent of workers are casual labourers and 22.8 per cent of workers are from salaried/wage employment category.⁵

Table 1. Labour Force Participation Rate (LFPR), Worker Population Ratio (WPR) and Unemployment Rate among the youths (Age Group- 15-29 Years)



Source: NSSO, Annual Report, PLFS, 2019



Sector-wise employment status as per the NSSO survey reveals that there has been reduction in persons engaged in agriculture. The proportion of rural male workers engaged in agricultural activities fell from 59.4 per cent in 2011-12 to 55 per cent during 2017-18. The proportion of workers in rural areas engaged in manufacturing sector, trade, hotel and restaurant, transport, storage and communication has increased as per the NSSO's latest report. With advent of government focus on infra-sector, there has been structural shift of employment from agriculture to non-farm sector like construction, trade and transport. In addition to this, introduction of advanced automation technology has given boost to growth of information technology and business process outsourcing sectors. These sectors are expected to provide employment to many trained youth provided that they acquire the skills to meet the changing needs.

Supply of appropriately skilled manpower is a necessary condition for reducing unemployment, meeting the aspirations of youth, increasing productivity and remuneration. On the skill development front, the mismatch between demand and supply of skilled labour is one of the causes for increasing Unemployment Rates among youth. As per the data published by NSSO, Annual Report, PLFS, 2019, around 44.14 per cent of employment was coming from rural based activities like agriculture, forestry and fishing and manufacturing was contributing 12.13 per cent and construction sector had a dominant position with 11.67 per cent employment. Across the service sector related activities, wholesale, retail trade, repairing motor vehicle and motorcycle had provided 10.09 per cent employment. Table 2 gives the details of employment across different segments of the economy.

Table 2: Percentage of employment across various sectors of Indian economy

| Sectors as per NIC | Percentage of Employment -all India |
|---|-------------------------------------|
| Agriculture, forestry & fishing | 44.14 |
| Mining & quarrying | 0.41 |
| Manufacturing | 12.13 |
| Electricity, gas, steam, and air conditioning supply | 0.34 |
| Water supply, sewerage, waste management and remediation activity | 0.25 |
| Construction | 11.67 |
| Wholesale, retail trade, repairing motor vehicle and motorcycle | 10.09 |
| Transportation and storage | 4.93 |
| Accommodation and food service activities | 1.87 |
| Information and communication | 0.99 |
| Financial and insurance activities | 1.05 |
| Real estate activities | 0.21 |
| Professional, scientific and technical activities | 0.83 |
| Administrative and support service activities | 1.19 |
| Public administration and defence, compulsory social security | 1.62 |
| Education | 1.78 |
| Human health and social work activity | 1.20 |
| Art, entertainment and recreation | 0.28 |
| Other service activities | 1.92 |

Source: NSSO, Annual Report, PLFS, 2019

NSSO defined technical education as a degree in engineering, medicine, agriculture, etc., or a diploma/certificate in agriculture, engineering/technology, medicine, craft, etc. In India around 97.30 per cent of persons of age 15 years and above had no technical education and around 2 per cent of persons of age 15-59 years had received



should be required to provide the information required for such mapping. In addition to this, Panchayat should be a geographical entity to mobilise rural youth for skill development and training programmes in a formal manner and Panchayat office should maintain a data-base on skill requirements after counselling rural youth. Employment and skill counselling centres should be established in each Panchayat. If possible, Government should establish skill training centres at the Panchayat level in PPP mode on long-term basis.

- It should be made compulsory for industry stakeholders to publish their vacancy details through the National Career Centres with some incentives given to industries, which are hiring trainees of flagship schemes like PMKVY and DDU-GKY.
- Training capacities of trainer in training institutes need to be upgraded to ensure the availability of qualified trainers. Trainers' training centres should be established in each of the districts of India. The training centres in addition to providing training should conduct trainings to upgrade the training skills of trainers. The training centres for trainers should have labs equipped with advanced tools and technology. Trainers' training should include a relevant industry-exposer component in the course work. Master trainers may be selected from reputed industries to train the trainers.
- MSDE should have a single regulatory body with branches in all states to lay down minimum standards for all players in the skilling system like training providers, assessors, etc., and to issue NSQF aligned certificates.
- Centralised MIS should be there to provide information on skill development on all types of

short-term training programmes implemented by various departments, ministries, institutes and other organisations.

- MSDE should issue guidelines to the TSPs regarding training centre locations and selection of job roles through state level officials and TSP should obtain clearance from labour department prior to starting the training programmes. More emphasis should be given to link labour department with skill development missions at the state/district level. Labour department should generate demand for skilled manpower and coordinate accordingly with the skill development functionaries.
- NITI Aayog's report, Strategy for New India@75 states that to address the requirement of skilled workers in the unorganised sector, scaling up RPL is required under the PMKVY, using bridge training, apprenticeship, dual training, work-based learning and advanced courses. In addition to scaling RPL, there should be a focus on the identification of transferable skills.
- NITI Aayog's report, Strategy for New India@75, also posits that an Overseas Employment Promotion Agency should be set up at the national level under the Ministry of External Affairs, apart from working with the MSDE to train and certify Indian workers keen on overseas employment, in line with international standards.
- Internship in industries is quite important as both the employer and trainee understand each other's requirements. So, more emphasis should be given on increasing interactions between industry and trainees.

Footnote

1. National Policy For Skill Development And Entrepreneurship, 2015
2. Strategy for New India@75, Niti Aayog, Govt. of India
3. Ibid., p. 1
4. NSSO, Annual Report, PLFS, 2019
5. Ibid., p.2.

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SKILL DEVELOPMENT: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Srinivadar Sharme and Shaahranjan Jha

The technological innovation has experienced exponential growth in last two decades. These innovations have not only impacted the economic growth potentials but also resulted in rapid transformation in labour market globally. With changing structure of manufacturing industry, these demands significantly matchup with new age skills to ensure a large proportion of the labour force remains relevant. This is important since the new skills like Artificial Intelligence (AI) and Machine Learning can potentially shape new jobs, and change the interaction of humans and machine.

With impressive economic growth in the recent past and crucial policy initiatives, India is uniquely positioned in the global context to become 'Skill Capital' of the world. The percentage of poor in India has reduced from 45.3 per cent in 1993-94 to 21.9 per cent in 2011-12. Same period also witnessed a drop in the India's percentage share to total poor in the world. This also highlighted that India's progress in this space has outpaced other developing countries. Currently, about 54 per cent of the country's population is below 25 years of age and by 2022 the average age of workforce participants in India would be 29 years – making us 'youngest' country in the world.

It is important to note that new age skills such as Artificial Intelligence and Machine Learning are being promoted in variety of sectors to enhance efficiency and productivity. With automation being pushed even in services such as healthcare and transport, the possession of new age skills is considered to be significant advantage. Therefore, it is important to have policy focus upon equipping youth with new age skill to match maintain global competitiveness.

Initiatives

While rising skills are expectedly largely dominated by tech skills, soft skills are also growing in prominence. This is because tech is breaking

The technological innovation has experienced exponential growth in last two decades. These innovations have not only impacted the economic growth potentials but also resulted in rapid transformation in labour market globally. With changing structure of manufacturing industry, these demands significantly matchup with new age skills to ensure a large proportion of the labour force remains relevant. This is important since the new skills like Artificial Intelligence (AI) and Machine Learning can potentially shape new jobs, and change the interaction of humans and machine. At the centre of this crisis lies skills instability. Further, in the absence of policy focus this could result in large skill gaps and inequality.



out of its silos, and soft skills, such as creativity, problem solving, and critical thinking are in demand to expand the application of new technology. Research shows that soft skills are increasingly valued. They are seen as key to navigating more automation and AI in the workplace. Together, soft skills and rising skills paint the picture of adaptable, flexible talent ready to navigate new demands in their evolving roles:

The Government of India has made significant efforts recently to increase the availability of skilled labour force. Of note is the emphasis on improving standards of ITIs and apprenticeship. There has been a significant drive towards building a proper eco-system of skills development and creating synergies with key stakeholders through the National Policy on Skills Development.

With the launch of "Make in India" campaign, a bigger push towards skills development was observed. In the year 2015, Government of India launched the National Skills Mission, making it target oriented and time bound. An important step towards more realistic approach was the initiative towards convergence of different schemes of skills development. The launch of Standard Training Assessment and Reward (STAR) scheme paved way for more skills training and also opened the way for foreign collaboration in program design and certification by foreign companies. The Pradhan Mantri Kaushal Vikas Yojana (2015) (PMKVY) was designed on similar lines to the STAR scheme. PMKVY has more detailed and robust monitoring systems with extensive focus on school dropouts.

The Government of India in Budget 2019-20, indicated the ambition "To prepare our youth to also take up jobs overseas," which would entail increased focus on skill-sets needed abroad including language training. The focus would also be on new-age skills like artificial intelligence, Internet of Things (IoT), Big Data, 3D printing, Virtual Reality (VR) and Robotics. These skills will equip youth to take up high-paying jobs in the domestic and international market.

All the major skills development programmes in India like PMKVY, SHREYAS (Scheme for Higher Education Youth in Apprenticeship and Skills), Programmes in ITIs, for the last few years have

been focusing upon creating opportunities for skilling the workforce for future driven jobs and industry-oriented courses aligned to industry 4.0.²

Challenges

There are two important reasons as to why, there is an urgent need in India to make fast move towards technological adoption in the wake of industry 4.0. First, India's growth story in recent past has been dictated by capital deepening and not necessarily by large base of labour force. Second, a large proportion of labour force is employed in the informal sector, implying they are less educated with limited exposure to skill development.

It is important to note that sustaining a higher rate of growth will require significant improvement in the availability of skilled human resource. Particularly, with advancement and diversification in the labour market, the need for a skilled workforce is greater than ever before. The majority of India's population (63 per cent) is within the working age group (15-59 years) and hence the demand for skills is higher than ever before.

The current size of India's formally skilled workforce is very small (approximately 2 per cent). In contrast, countries like South Korea and Japan have 96 per cent and 80 per cent skilled workforce respectively. About 60 per cent of the Indian population has education qualification less than higher secondary (Class XII). The skill shortage must be addressed in order to sustain growth in manufacturing and service sectors.

The country presently faces a dual challenge of severe paucity of highly-trained quality labour and non-employability of large sections of the educated workforce that possess little or no job skills. Efforts have been made in past to address the persistent



201). However, the demand and supply side has been draft in silos, whereas, it needs to be understood that the skill development issue in India is pertinent both at the demand and supply level.

The major challenges to be addressed pertain to the fact that only about 21 per cent of males and 12 per cent of females in rural area have education attainment up to secondary level. This presents vicious cycle of joblessness mostly because the demand for skilled worker has increased manifold in the recent time. Further, about 89 per-cent of youths do not have any vocational training.

Figure 1 presents the number of youth trained under DDUGKY (Deen Dayal Upadhyaya Grameen Kaushalya Yojana) as a percentage of target between 2015-16 to 2019-20. This is important to note that the pace of training is rather slow, whereas majority of States still not have met 50 per cent of the target. Under PMKVY's recognition of prior learning 2692637 candidates have been trained of which 2152500 candidates have been assessed under 742 job roles so far. In the IT/ITeS sector, 179264 candidates have been trained under short term training. This presents unique opportunity to States to realign their approach towards skill development and emphasise upon minimum number of candidates those must be trained with skills required for industry 4.0.

Way Forward

In the age of industry 4.0 there are enormous opportunities for identifying new means of economic prosperity. However, this definitely depends upon how well the existing training programmes are geared towards incorporating new age skill for millions of youth who are residing in the rural areas. This is essential because there is a positive feedback loop between new age technologies and skilling or up-skilling rural youths. General proposition is that the adoption of new technologies generates demand for new skills, and in today's context it is Artificial Intelligence and Machine Learning. Apart from focus on short term skill training, up-gradation of ITIs as centres for new age skills training for candidates can be an important way forward. The points mentioned can be considered as way forward for initiating systemic structure for expanding opportunities to rural youths for accessing new age skills training.

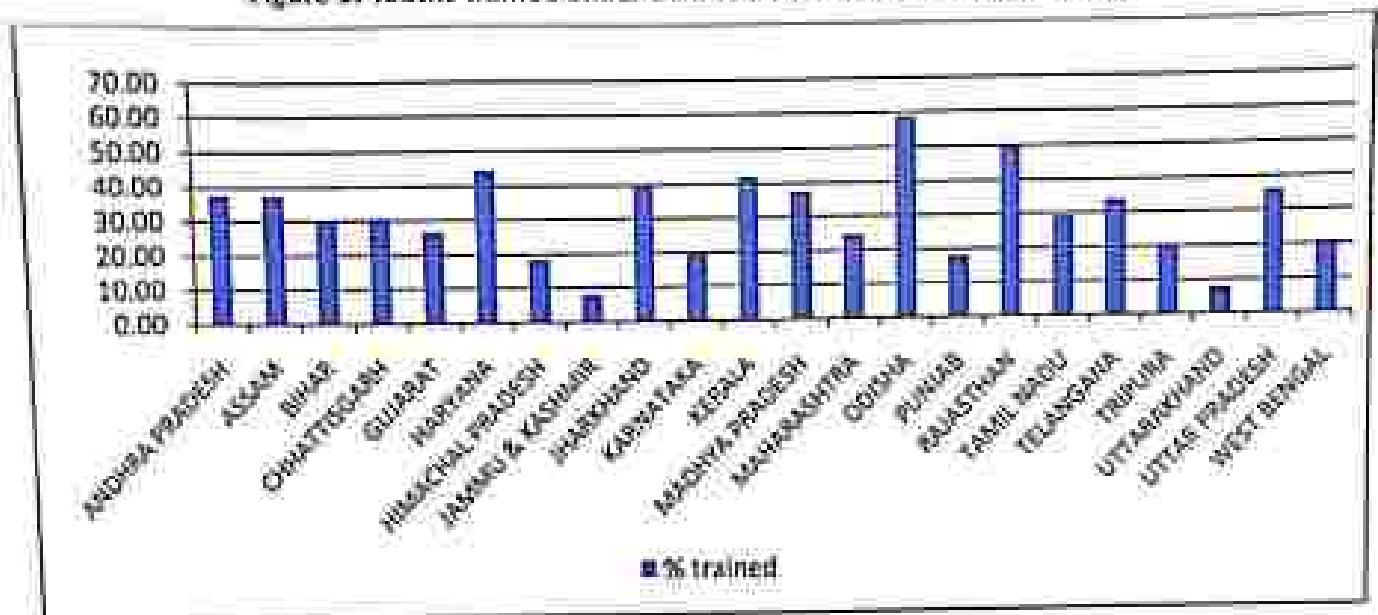
The following table briefly presents that the rising skills are dominated by technology, however, some non-tech stands out:

| Category | What do professionals with these skills do? |
|---------------------------------|---|
| Internet of Things (IoT) | Developing and managing connected devices |
| Location detection technologies | GIS based location detection technology |
| Fraud detection | Fraud detection through technology |
| 3-D printing | Research and 3-D printing |
| Smart Sensors | Sensor based system development for human development |
| Cloud computing | Cloud based data storage |
| Social Media Marketing | Promoting products and/or services through social media platforms to achieve business goals |
| Workflow automation | Automating manual processes based on pre-defined business rules |
| Gesture Recognition Technology | Interpreting human gestures using a computing device as an input for applications and devices |
| Compliance | Ensuring that a company complies with regulatory and legal requirements |
| Continuous Integration | Integrating codes into a shared repository to detect problems continuously |
| Blockchain | Setting up and managing a distributed and decentralised public ledger |
| Artificial Intelligence | Studying and designing intelligent agents to perform human-like tasks |
| Robotics Process Automation | Automating high volume, repeatable business tasks and processes using software with artificial intelligence and machine learning capabilities |

System for Training or Creating a Training Market

In most of the States there are outdated system and lack of sufficient facilities and equipment or qualified instructors. Innovative approaches are warranted for strong system of vocational

Figure 1. Youths trained under DDUGKY between 2015-16 to 2019-20



Source: Koushal Project

education and training. Such approach may include establishment of additional training academies, and greater penetration of industries and industry experts along with the promotion of strategic involvement of the private sector.

Skills mismatch and link between training and industry needs: In its current state, the vocational education and training system is not responsive enough to the changing industry skill demand, and the country as result is faced with widening gap between skill supply and demand. Effective and efficient pathways are warranted to address the skill mismatch through building clear linkages between general education and vocational education system and industries. Further, there is need to review and upgrade the curriculum of vocational education in consultation with the industry experts.

Upgrading outdated training systems and under-qualified instructors: Effective framework to improve quality of vocational education and training and also pathways for school dropouts for their entry to vocational education will be of vital significance. It is important to note that despite the high unemployment in most of the States, vocational courses are not the first choice of students completing secondary education.

Current Availability of Trainers in Vocational Sector: The National Policy on Skill Development and Entrepreneurship, specifically in relation to trainers in the skill sector, states that "the

availability of good quality trainers is a major area of concern."

Apprenticeship training lags behind: Though important, focusing only upon the individual traditional forms of vocational training can often lead to under achievement of targets for skills development. This approach generally overshadows the conditions and constraints faced by workers within the system. It is important to note that the current system does not incentivize the youth and workers to opt for skills development opportunities.

There is evidence to suggest that the rate of seat utilization under apprenticeship training scheme has been declining. Therefore, systems approach within skill ecosystem is required to promote innovativeness and to recognise the value of on-the-job training, by making apprenticeships in actual work environments an integral part of all skill development efforts.

Footnote

1. Industry 4.0 is the subset of the fourth industrial revolution that concerns industry. The fourth industrial revolution encompasses areas which are not normally classified as an industry, such as smart cities.

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SKILL DEVELOPMENT AND ENTREPRENEURSHIP AMONG YOUTH AND WOMEN

Vijaya Jakkur

Given the realities of rapidly changing economic landscape in the country, entrepreneurship opportunities have emerged as an important source of meeting the aspirations of the youth. An all inclusive approach to strengthen the entrepreneurship development scenario in the country which is competent, quality conscious, market savvy, innovative and has globally competitive entrepreneurs, needs to be carefully mentored and encouraged.

Today, India is one of the youngest nations in the world with more than 62 per cent of its population in the working age group (15-59 years), and more than 54 per cent of its total population below 25 years of age. During the next 20 years, the labour force in the industrialized world is expected to decline by 4 per cent, while in India it will increase by 32 per cent.¹ This poses a formidable challenge and a huge opportunity for the country. The challenge lies in channelising this gigantic youth energy towards productive avenues and the opportunity lies in taking a competitive advantage over the other economies of the world by using our human resources. Skill development is key in ensuring that this opportunity is availed and the challenge is surpassed.

The Prime Minister has urged that we need to move away from a paradigm of "job seekers" to "job creators". In a country like India where approximately 12.8 million labour force enters the job market annually,² it is not possible for the existing governmental and non-governmental institutions to generate enough jobs to accommodate all job seekers. It is imperative that a sizeable chunk of these job seekers venture into entrepreneurial activities so that not only do they make a living for themselves but also create job opportunities for others. Entrepreneurship is directed towards innovative problem-solving initiatives which can be turned into commercially viable ventures hence entrepreneurs add value to the society by simplifying the lives of people and creating new jobs in the process.



Literature on ancient Indian history has highlighted that occupation-based corporate organisations called *Shrenis* (Guilds) used to impart skills to the novice artisans by a system of apprenticeship. This shows that skill development has always held an important place in Indian culture. The need of the hour is to revive similar systems which impart trade-based and soft skills to the workforce in order to make them employable in the job market.

Skill Development for Youth

Our country presently faces a dual challenge of paucity of highly trained workforce, as well as non-employability of large sections of the

conventionally educated youth, who possess little or no job skills. Ministry for Skill Development and Entrepreneurship (MSDE) was set up in November 2014 to give fresh impetus to the Skill India Initiative and help create an appropriate ecosystem that facilitates imparting employable skills to its growing workforce over the next few decades.

A field where the initiative has lacked in India is in developing aspirational value for skill development programmes. Going to polytechnic colleges or Industrial Training Institutes is not something that many students aspire for as their first choice. The narrative around vocational courses needs to be rebuilt as stepping stones for students to move ahead in career by adding new skill sets. The skill development courses should be designed to have flexible curriculum and time duration where working professionals can pursue the courses while continuing their jobs.

Skill development and entrepreneurship culture needs to be built from the bottom to the top. Schools should have mandatory skill and entrepreneurship classes. It should be compulsory for each student to master at least one job skill and gain certification of basic proficiency in it before graduating from schools. Colleges should have compulsory credit courses for skill and entrepreneurship development courses. We need an integrated approach where skill development can be made an integral part of education system at all levels. In 2012, Ministry of Human Resource Development (MHRD) launched Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education (CSS-VSHSE) targeting both the school drop-outs and those pursuing higher education post school. NSDC has been supporting MHRD in this initiative since inception and has been a co-architect in shaping and implementing the scheme successfully.

Skill development initiatives can be used for reformation and rehabilitation of youth. In a bid to provide children and unemployed youth, who have been found in conflict with law, the opportunities to



realise their potential, NSDC in collaboration with Delhi Police has undertaken project YUVA (Yuva Udyamita Vikas Abhiyan), under PMKVY. Delhi Police has identified around 3,000 deprived youth in the capital region for imparting skill training in various trades. NSDC, through its training partners, is operating skill development training centres in the police stations across the capital city with the aim to train youth between the age group of 16 to 25 years. Along with skill training, development of soft skills, vocational skills, basic computer knowledge, spoken English are focused upon to enhance livelihood opportunities. Till date, YUVA scheme has helped training of over 2,300 candidates through 36 NSDC approved training partners in 45 skills and has placed 400 candidates. The youth are motivated to learn new skills and there has been zero per cent dropout rate till now.³

Skill development in rural areas contributes to improvement in productivity and working conditions in the agricultural sector while at the same time in enabling rural workers, particularly young people, to access emerging employment opportunities beyond the agricultural sector. The outreach and quality of skill development in rural areas needs to be improved so as to enable rural workers to acquire and upgrade technologies, improve linkages to value chains, increase agricultural production,

expand access to market and engage in off-farm activities which can generate supplemental income. Institutes for entrepreneurship training such as Rural Development & Self Employment Training Institutes (RUDSETI) need to be promoted further. The convergence with national employment programmes, such as National Rural Employment Guaranteed Scheme (NREGS), provides an opportunity for imparting skills training in rural areas.

Skill Development for Women

Women constitute almost half of the demographic dividend. The key challenge here is to increase their participation in the country's labour force, which is directly linked to economic growth of the nation. National Sample Survey (68th Round) results indicate that the worker population ratio for females in rural sector was 24.8 in 2011-12 and 54.3 for males. In Urban sector, the ratio is 14.7 for females and 54.6 for males. Female participation in the labour force has remained lower than male participation as women account for most of the unpaid work, and when women are employed in paid work, they are overrepresented in the informal sector and among the poor. They also face significant wage differentials vis-à-vis their male counterparts. It has been observed that LFPR (Labor Force Participation Rate) is the lowest for urban females.⁹

Poor ratio of participation of women in labour force gets repeated in poor ratio of participation of women in skill development courses. As per the All India Survey on Higher Education (2015-16) conducted by MHRD, out of all the polytechnic colleges surveyed, the total enrollment constituted of 83 per cent of male students and the remaining 17 per cent of females.³ This skewed ratio shows that skill development initiatives need to have a targeted focus towards women to increase the percentage of women in skilled workforce. Mainstreaming gender roles by skilling women in non-traditional roles

and increasing gender sensitivity in the workplace will have a catalytic effect on productivity and be a smart economic decision.

Regular vocational training programmes for women are being conducted through an institutional network of 15 central institutes—one National Vocational Training Institute for Women in Noida & 15 Regional Vocational Training Institutes for Women. These institutes provide training facilities exclusively for women in skills with high wage-employment and self-employment potential besides instructor training programmes.

Skill development for employability can be used as an agent of change in promoting women's employment. Women face a multitude of barriers in accessing skills and productive employment. Women are discouraged for getting into such vocations which are traditionally considered to be 'tough' such as automobiles and construction works. This restricts the job opportunities for women. Skill development programmes should encourage women to venture into traditionally male-dominated areas. Also, there are few areas where women are traditionally preferred such as in hospitality and tourism industry. These areas require soft-skills which can be acquired in a relatively shorter time frame and can fetch handsome income to female workers. National Tourism Policy has also highlighted the requirement of skilled workers in the tourism industry. Keeping this in mind women-centric skill development courses need to be designed to provide gainful employment to women in sectors where demand for skilled female workers is high.

In order to overcome barriers and facilitate participation, proactive measures should be taken such as providing hostels, scholarships, transport, training materials and loans to women pursuing skill development courses. Infrastructure and



programmes for skill development are particularly scarce in rural and difficult areas and thus the problem of access to training is most acute in these terrains. The women are increasingly becoming the main workers in rural households—as their husbands often migrate—but often equipped with only traditional and outdated skills and knowledge.

Skill development initiatives under MSDE need to work in synergy with policies of Ministry of Women and Child Development (MWCD). Ujjwala scheme for prevention of trafficking and rescue, rehabilitation and re-integration of victims of trafficking for commercial sexual exploitation, is a case in point. This scheme intends to provide rehabilitation services, both immediate and long-term to the victims of human trafficking. The rehabilitation initiatives of this scheme can be integrated with the skill development initiatives of MSDE so that the women rescued from difficult conditions can be re-integrated into the society in respectable skill-based remunerative professions. Similarly other schemes of MWCD such as Support to Training and Employment Programme for Women (STEP), Swavalamban, Kishori Shakti Yojana, etc., which focus on skilling of women should be synergistically integrated with programmes of MSDE.

Skill development for self-employment will be an important component in skill development efforts in rural areas. Post-training support, including mentoring for access to markets, credit and appropriate technologies is an important part of skill development strategy for self-employment. Training modules should incorporate specific needs of target groups, for example, literacy, the level of education and the local language. The delivery of training should be flexible in terms of hours and duration to encourage participation, particularly among women.

Promoting Entrepreneurship in India

Entrepreneurship based on innovation has immense growth potential. However, the number of local entrepreneurs emerging every year in India is very low. The Global Innovation Index 2019 ranks India 52 out of 129 countries in innovation performance. Accelerating entrepreneurship especially that is based on innovation is crucial for large-scale employment generation in India. The



growth and prosperity of all economies remain highly dependent on entrepreneurial activity. Entrepreneurs are the essence of economic growth. They provide a source of income and employment for themselves, create employment for others, produce new and innovative products and services, and drive greater upstream and downstream value-chain activities. Supportive environments are increasingly essential to successful entrepreneurship and these are evolving across the world. The ideal entrepreneurial environment has five pillars: access to funding, entrepreneurial culture, supportive regulatory and tax regimes, educational systems that support entrepreneurial mindsets, and a coordinated approach that links the public, private and voluntary sectors.

We need to inculcate a culture of entrepreneurship since the formative years of students. Students should be made aware of what constitutes entrepreneurship, what its challenges are, and how they can contribute to the society by executing innovative solutions. Recent reports of Entrepreneurship Classes being conducted in some schools of Delhi are encouraging. Schools should contact the notable entrepreneurs of their cities and invite them for interaction with students. In the last decade, India witnessed young entrepreneurs making breakthroughs across different sectors through blue chip start-ups. The stories of the co-founders of such ventures should be a part of school curriculum to motivate students from a young age.

It should be realised that what makes entrepreneurship different from a normal business is the focus on developing innovative solutions for problems. Hence, a problem-solving aptitude is an important factor to develop entrepreneurship. This

aptitude needs to be cultivated from a young age itself. Schools should develop entrepreneurship labs where students should be encouraged to develop solutions for problems faced by their communities. Competitions should be organised at district, state and national levels where students can showcase their innovations and learn from each other.

While the schools can be the nurseries for entrepreneurship, colleges are the most appropriate places to develop the budding entrepreneurs. For this, colleges and universities should have incubation centres where students can start building their ventures. Universities should facilitate avenues for funding and networking for the student entrepreneurs. Special focus should be given on empowering women and students coming from marginalized sections to provide them with enough confidence so that they venture into the risky domain of entrepreneurship as per their interest rather than being compelled to take a safe job to secure a stable income. It is seen that the current crop of start-up founders have majorly come from the urban-based and premier college educated strata of society. Entrepreneurship needs to penetrate all layers of society so that problems concerning all sections of the society can be solved through innovative solutions. There is need for institutions like DICC (Dalit Indian Chambers of Commerce) to hand hold entrepreneurs coming from weaker socio-economic background by providing them access to networking opportunities and business funding channels.

Government of India has announced the National Policy for Skill Development and Entrepreneurship which focuses on towards promoting entrepreneurship. One of the prime factors which hinder entrepreneurship is the multitude of compliances to be made with respect to government regulations and laws. Rules and regulations are necessary in the greater interest of the society however for a new entrepreneurial venture it becomes a daunting task to hire specialized professionals to deal with various government departments. This problem can be solved by providing some relaxation in compliance for newly established start-ups. Tax deduction given under section 80 IAC of the Income Tax Act, to the newly established start-ups is a case in point. Such relaxations give start-ups breathing space to grow till the time they are capable enough

to stand on their feet. Similar relaxations can be given by other government authorities.

Synthesis of Skill Development and Entrepreneurship

It is important to see skill development and entrepreneurship as complementary to each other. Entrepreneurship involves venturing into new avenues of economy where new problems are tackled which require the availability of skilled human resource. The lack of skilled manpower restricts the growth of entrepreneurial ventures. At the same time skill development initiatives need augmentation from entrepreneurs. There needs to be a continuous interaction between skill development centres and entrepreneurial ventures so that demands of the industry can be communicated to the skill development agencies which can incorporate the same in their curriculum to ensure higher employability of their pupils. Given the realities of rapidly changing economic landscape in the country, entrepreneurship opportunities have emerged as an important source of meeting the aspirations of the youth. An all inclusive approach to strengthen the entrepreneurship development scenario in the country which is competent, quality conscious, market savvy, innovative and has globally competitive entrepreneurs needs to be carefully mentored and encouraged.

Footnote

1. <https://www.mde.gov.in/assets/images/%E0%20India/National%20Policy%20on%20Skill%20Development%20and%20Entrepreneurship%20Final.pdf>
2. <https://www.mde.gov.in/assets/images/NationalSkillDevelopmentPolicyMar09.pdf>
3. <https://www.mde.gov.in/assets/images/annual%20report/Annual%20Report%202017-2018%20%78English%29.pdf>
4. http://www.mospi.gov.in/sites/default/files/reports_and_publication/statistical_publication/social_statistics/Chapter_4.pdf
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SKILL DEVELOPMENT: IMPERATIVE FOR ACHIEVING GROWTH TARGETS

Dr. Anupriya Chaudhri

Skills and knowledge are the driving forces of economic growth and social development for any country. National Skill Development Initiative will empower all individuals through improved skills, knowledge, nationally and internationally recognized qualifications to gain access to decent employment and ensure India's competitiveness in the global market. Large scale skill development is thus an imminent imperative. Innovative skill development initiatives will help to actualise the inert potential.



Skills and knowledge are the driving forces of economic growth and social development for any country. Nations with higher and better levels of skills adjust more effectively to the challenges and opportunities in the world. Skill development is the process of (1) identifying skill gaps, and (2) developing and honing those skills. Skill training is targeted training provided to candidates to help them acquire knowledge and abilities necessary for them to achieve gainful employment.

Skill and Entrepreneurship development efforts across the country have been highly fragmented so far. Though India enjoys the demographic advantage of having the youngest workforce with an average age of 29 years in comparison with the advanced

economies, India records a low percentage of workforce (20-24 years) with formal employability skills.

Recent studies indicate that employers found only few of the Indian graduates as 'employable' in the organised sector. The informal sector which comprises major chunk of the workforce has no skilling mechanism, as the skill development takes place on the job. Potentially, the target group for skill development comprises all those in the labour force, including those entering the labour market for the first time, those employed in the organised sector and those working in the unorganised sector. The current capacity of the skill development programmes needs to be

significantly improved. India has set a target of skilling 500 million people by 2022. Hence, need for quick reorganisation of the skill development ecosystem and its promotion to suit the needs of the industry is the need of the hour.

As the proportion of working age group of 15-59 years will be increasing steadily, India has the advantage of demographic dividend. Optimally utilising and harnessing the demographic dividend through appropriate skill development efforts would provide an opportunity to achieve inclusion and productivity within the country and also a reduction in the global skill shortages. Large scale skill development is thus an imminent imperative. Innovative skill development initiatives will help to actualise the inert potential, which has been articulated in the National Policy on Skill Development of 2015.

The nodal Ministry responsible for skill training and development is the Ministry of Skill Development and Entrepreneurship (MSDE). The Ministry is responsible for co-ordination of all skill development efforts across the country, bridge gap between demand and supply of skilled manpower, building the vocational and technical training framework, skill up-gradation, building of new skills, and innovative thinking. The Ministry aims to provide quality skilling on a large scale with high standards in order to achieve its vision of a 'Skilled India'.

The key elements of this Ministry are National Skill Development Agency (NSDA), National Skill Development Corporation (NSDC), National Skill Development Fund (NSDF) and 33 Sector Skill Councils (SSCs) as well as 187 training partners registered with NSDC. The Ministry also aims to work with the existing network of skill development centres, universities and other alliances in the field. Collaborations with relevant central ministries, state governments, international organisations, industries and NGOs have been initiated. This will ensure multi-level engagement, strengthening of existing initiatives and more impactful implementation of skill development efforts. MSDE has launched Skill India Mission in 2015 to provide the benefits of skill enhancement programme to around 1 crore people. To meet the demand of industries, Skill India is training the youth to deliver better possible output in the corporate world. They also provide on-the-



job training to the students to give them practical exposure to the actual workplace.

The Ministry implements the following schemes:

Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

This scheme aims to offer 10 million Indian youth meaningful, industry relevant, skill-based training. Under this scheme, the trainees are offered a financial reward and a government certification on successful completion of training and assessment. This helps them in securing a job for a better future. The scheme is implemented through NSDC. The scheme is applicable to any candidate of Indian nationality.

Apprenticeship Training Scheme (ATS)

There are five categories of apprentices namely - trade apprentice, graduate, technician, technician (vocational), and optional trade apprentice. Monthly stipend is paid to candidates by the employer.

Craftsmen Training Scheme

Training courses under Craftsmen Training Scheme are being offered through a network of 15,042 government and private Industrial Training Institutes (ITIs) located all over the country with total seating capacity of 22.82 lakh with an objective to provide skilled workforce to the industry in 138 National Skills Qualifications Framework (NSQF) compliant trades. ITIs are functioning under the administrative control of the respective state governments/UTs/private organizations. The Scheme is implemented through



Directorate General of Training. Candidates with minimum age of 14 years can apply under this Scheme with no upper limit.

Skill Development Initiatives (SDIs)

The SDIs aim to provide vocational training (courses based on Modular Employable Skills) to develop skilled manpower for the industry since May 2007 through a network of Vocational Training Providers (VTPs) located across the country. The scheme provides vocational training to school dropouts, existing workers, ITI graduates, etc. to improve their employability by optimally utilising the infrastructure available in government, private institutions and the industry. Existing skills of the persons are also tested and certified under this scheme. Training is provided by registered VTPs under the government, private sector and industrial establishments. A National Council of Vocational Training certification is granted under the scheme. The Scheme is implemented through Directorate General of Training. Priority is given to the candidates above the age of 14 years who have been or withdrawn as child labour to enable them to learn employable skills in order to get gainful employment.

National Skill Development Corporation (NSDC)

Another very important wing of Ministry of Skill Development is the National Skill Development Corporation (NSDC). This was set up as Public Private Partnership Company with the primary mandate of catalysing the skills landscape in India. This makes NSDC very unique and different. NSDC operates through partnerships with multiple stakeholders in developing and evolving the skilling ecosystem. NSDC has trained over 5.2 million students.

The main objectives of the NSDC are to:

- Upgrade skills to international standards through significant industry involvement and develop necessary frameworks for standards, curriculum and quality assurance
- Enhance, support and coordinate private sector initiatives for skill development through appropriate Public-Private Partnership (PPP) models; strive for significant operational and financial involvement from the private sector
- Play the role of a "market-maker" by bringing financing, particularly in sectors where market mechanisms are ineffective or missing
- Prioritize initiatives that can have a multiplier or catalytic effect as opposed to one-off impact.

National Policy for Skill Development and Entrepreneurship

The Union Cabinet approved India's first integrated National Policy for Skill Development and Entrepreneurship 2015. The Policy acknowledges the need for an effective roadmap for promotion of entrepreneurship as the key to a successful skills strategy. The vision of the Policy is "to create an ecosystem of empowerment by skilling on a large scale and to promote a culture of innovation based entrepreneurship which can generate wealth and employment so as to ensure sustainable livelihoods for all citizens in the country".

The Policy seeks to bridge existing skill gaps, promote industry engagement, operationalise a quality assurance framework, leverage technology and promote greater opportunities for apprenticeship training. Skill development and entrepreneurship programmes for women are a specific focus of the Policy. In the entrepreneurship domain, the Policy seeks to educate and equip potential entrepreneurs. It also seeks to connect entrepreneurs to mentors, incubators and credit markets, and foster innovation, entrepreneurial culture and social entrepreneurship.

Skill India Mission

Another initiative in the area of skill development is Skill India Mission. As technology becomes even more pervasive and job roles evolve,

there is a strong need as the part of the Government to bridge the skill gap. And, it is this need that the Skill India Mission has been addressing since its launch in 2015. The Mission was developed under the aegis of the MoSDE to create convergence across sectors and states in terms of skill training activities and to achieve the vision of "Skilled India." With the launch of the Skill India Mission in 2015, the government brought 12,000 ITIs, spread across the country, under the then newly-formed Skill Development and Entrepreneurship Ministry. This move not only enabled the modernisation of ITIs with respect to the curriculum, pedagogy, technology and infrastructure but also has helped to fast-track the adoption of state-run ITIs by corporate India.

Another good initiative is the Scheme for Higher Education Youth in Apprenticeship and Skills (SHREYAS), which the government launched in 2019. With SHREYAS, the government aims to forge a close functional link between academia and industry on a sustainable basis, and enhance the employability of the Indian youth through 'on the job work exposure'.

Apprenticeship training is one of the most efficient ways to develop skilled manpower for industry by using training facilities already available in establishments without them having to spend more. Under SHREYAS, the government has also lined up a number of industry partnerships that are expected to benefit numerous students.

Enabling the Workforce to be Future-Ready for a Global Market

Be it the ITIs, PMKVY, or SHREYAS, they all aim at skilling the workforce to meet the current skill gap in the job market. And, while that is the need of the hour, the government has also adopted a future-looking outlook and is working towards skilling the workforce in future jobs and industry-oriented courses aligned to Industry 4.0 such as Artificial Intelligence, 3D printing, data analytics, cyber-security, and automation. Skill India Mission has partnered with industry various leaders to create skill development programmes aligned to the needs of Industry 4.0.

Skill India is also working with close to 11 countries across various areas of interest to upscale

and ensure global standards in skill development. The government has also signed 19 MoUs with different countries to ensure global mobility through cross-country internship programmes and hiring of Indian workforce for special projects and requirements. In addition, the government is also working with other countries to secure training infrastructure support through international collaboration. For instance nine Japan India Institutes of Manufacturing (JIIMs) have also been opened in partnership with Japanese companies under the Manufacturing Skill Transfer Programme. India is also working closely with Singapore Institute of Technical Education to create state-of-the-art India Institute of Skills (IIS) for providing training in specialised skill sets. The first IIS is expected to be launched in Kanpur, followed by Mumbai. The government has also partnered with Emirates Driving Institute (EDI) and Youth Chamber of Commerce (YCC) in April 2019 to set up International Driver Training Institutes (IDTIs) in India to promote migration of skilled drivers from India. Similar partnerships have been done with countries like Finland, UK, Australia, France etc. to give boost to skill development and tap into international opportunities of training and employment. Eighteen National Skill Training Institutes are imparting skill training exclusively for women.

Conclusion

The Skill India Mission has played a key role in re-skilling and up-skilling the workforce to facilitate growth in skill development. The Mission has ensured that the skills are learnt through formal means and recognised and certified; and seen that the workforce is now better equipped to leverage the existing job opportunities in the country. Furthermore, for employers, this skilled workforce has translated into enhanced productivity. Going by the government-supported studies that estimate an incremental human resource requirement of 103.4 million during 2017-2022 across various sectors, India's Skill India Mission will need to keep the momentum going to achieve its ambitious growth targets.

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WOMEN ENTREPRENEURS IN INDIA: OPPORTUNITIES AND CHALLENGES

Dr. Sripavan B. Baruah

Globally, business world has realized and is working on war footing to create entrepreneurship as the final remedy to overcome all types of business and market challenges. Women are willing to take up business and contribute to the nation's growth. Their role is being recognised and steps are taken to promote women entrepreneurship. Resurgence of entrepreneurship is the need of the hour. Women entrepreneurs must be moulded properly with entrepreneurial traits and skills to meet changing trends and challenging global markets, and also be competent enough to sustain and strive in the local economic arena.

At a time when there is a sharp focus on diversity and women are being encouraged to break through unseen glass ceilings, turning entrepreneur is proving to be a good way to get more women into the workforce. Women comprise of nearly half part of the world's population and increase in the number of women entrepreneur would bring a global revolution in the world's economy wherein the development would be fast, responsibilities would be distributed, and more number of alternative solutions would be available. Developing and developed nations have realized that developing women entrepreneurship is indispensable to flourish as economically dominant nations. Therefore creation of platforms and networks for entrepreneurial culture have become prominent issues globally.

In modern era, more and more women are taking up entrepreneurial activities especially in medium and small scale enterprises. Women-owned businesses are highly increasing in the economies of almost all countries. The entrepreneurial potentials of women have gradually been changing with the growing sensitivity to their role and economic status in the society. Skill, knowledge and adaptability in business are the

main reasons for women to emerge into business ventures. Indian Government recognizes the need for women to be part of mainstream economic development. Women entrepreneurship is seen as an effective strategy to solve the problems of rural and urban poverty.

Overall, more women entrepreneurs account for improved economic growth & stability within a country. Women entrepreneurs inspire other women to start businesses. This leads to more job creation for women which ultimately helps in reducing the gender gap in the workforce. Women entrepreneurship can make a particularly strong contribution to the economic well being of the family & communities, poverty reduction, and women empowerment, thus contributing to the Millennium Development Goals (MDG).

If we look at the 6th economic census, we will find that 13.76 per cent of MSME's are women-owned i.e. approximately 8.05 million out of 58.5 million businesses. The World Bank Enterprise Survey Data, an internationally comparative data set, suggests that 10.7 per cent of MSMEs have female participation in ownership. In India, there are also urban/rural differences in rates of women's



entrepreneurship, with more women's enterprises based in rural areas (22.26 per cent of all rural enterprises), compared to urban areas (18.42 per cent of all urban enterprises) according to Ministry of MSME Annual Report. Women's enterprises are also mainly micro sized or proprietary and majority are informal.

Looking into the state level distribution of women-owned enterprises, we will find that there is a variation in the distribution of women-owned enterprises across India at state level, suggesting diversity in the enabling environments for women entrepreneurship. The largest share in the number of establishments under women entrepreneurs are clustered in the southern states of India. In terms of female owned proprietary establishments, out of top ten states, six states are from North East India.

In the last five decades, there have been phenomenal changes in status and workplace diversity in India. During the fifties, there were two categories of women who started their own business—one who took to creating and managing entrepreneurial activity where there was no male earning and the second comprised of a very small percentage of women who had the courage to break the glass ceiling.

During seventies however, women opened new frontiers and got into self employment; and by the eighties, women pursuing highly sophisticated technological and professional education increased. Women started entering into family business with much more seriousness. Women in the nineties became more capable, competent, confident and fearless with a clear goal. The 21st century is the century of Telecom, IT and Financial Institutions and women have started getting into these sectors too.

Percentage Distribution of Male/Female-Owned Enterprise in Rural and Urban areas

| Sector | Male | Female | All |
|--------|-------|--------|-----|
| Rural | 77.76 | 22.24 | 100 |
| Urban | 81.58 | 18.42 | 100 |
| All | 79.63 | 20.37 | 100 |

Source: MSME report

India needs more women entrepreneurs because of the following reasons:

- 1) Economic growth: Women can start a new business that caters to a different market or niche than their male counterparts. Enabling women benefits future generations because women tend to spend more time on their children's education and health, which in turn boosts productivity.
- 2) Narrowing gender gap: Women-entrepreneur inspire other women to start business leading to job creation for women, which ultimately helps in bridging the gender gap in workforce. Narrowing the gender gap in employment will increase global income.
- 3) Company culture and safety at workplace: Creating and preserving a strong positive company culture is a pre-requisite for the growth and long term success of any company. Studies show that a women-led company tend to have better company culture, high values and transparency. Women have struggled with how to maintain a work-life balance. It is seen that woman-led organisations are more sensitive to safety issues.

Sector Specific Business Opportunities for Women Entrepreneurs

It is seen that most of the women entrepreneurs from the North Eastern Region are mainly engaged in conventional enterprises like handloom & handicraft, jam/jelly, pickle making, beauty parlours & bakery units. Exposure is necessary for our women entrepreneurs to other sectors as well so that they can cross barriers and open their minds towards different business ideas apart from the sectors traditionally believed to be



for women. There is need now for women to go beyond the conventional sectors and look out for opportunities based on resources & skills available in the state.

- The handlooms, handicraft and fashion are a vast industry and is also growing at a great pace with different innovative creations. The plethora of opportunities in the sector starts from designer in ethnic women wear, embroidery and needle worker, cane and bamboo worker, decorative show places, pottery, carpet designer, fabricator designer, calendaring specialist, handloom technologist, fashion designing, etc.
- The Education sector has also seen a host of reforms in the recent years that could possibly transform the country into a knowledge haven. The wide-ranging arena starts with pre-nursery education, k-12 schools, supplementary education, extra-curricular activities, competitive exam preparation, colleges, vocational training institutes, creation of a common platform to connect teachers & students, platform for teachers, content sharing platform, discussion portals exclusively for teachers or students, content sharing portal, portal for searching schools or pre-schools, game-based learning, E-commerce for school accessories, communication channels between schools and parents, ERP, CRM for simplifying internal admin processes of schools, etc.
- Another tremendously growing industry is the beauty and wellness industry in India that is booming, with a tremendous potential for growth in the coming years. The Indian wellness market offers huge business opportunity waiting to be harnessed with significant scope for penetration, especially

in areas like nutrition, rejuvenation, fitness, opening of beauty salon, gym, spa, hygiene products, beauty clinic businesses, beauty professionals, hair stylists, makeup artists, yoga and fitness professionals, nail technicians & spa therapists.

- In India the logistics industry is also evolving rapidly. The business opportunities in logistics are logistics and supply chain consultancy, courier services, movers and packers, independent consultant, etc.
- Agriculture, which is the backbone of Assam economy, is also witnessing a tremendous growth. Assam is still heavily dependent on the agricultural sector. More than 100 species of Bamboo are naturally available in this region with 216 fish species, out of which 150 species have ornamental importance and 50 species have overseas ornamental value. The tremendous growth in these sectors also gives various business opportunities like agri clinic, cold chain for fruits & vegetables, livestock feed production business, rice mill, vermicompost production, banana water making, cashew processing, bakery, chips production, coconut oil production, pickle making, dal milling business, dry fruit production, honey processing, spice powder processing, packaged food processing, etc.
- Another vibrant activity and a multi billion industry in India is the Tourism Industry. The Indian Tourism & Hospitality Industry is 34th (among 140 economies across the world in 2019) as per ranking in Travel & Tourism Competitive Index (TTCI) released by the World Economic Forum (WEF). The various business trends in the tourism sector are adventure tourism, event planning, taxi and bus shuttle business, ferry business, boat cruise business, pilgrimage travelling company, online hotel booking sites, blogging on travels and tourism related topics, travel agency which does travel arrangements for guests which include securing of passports and visas to bookings for airlines, hotels, tours, etc. Together with the tourism sector the online business sector has also gained grounds globally as well as in India. Here are few online business ideas to get started with: blogger, SEO (Search Engine Optimization) consultant, specialized

retailer, social media consultant, web design, remote technical support, app development, handmade craft seller, etc.

While there are a large number of schemes for promoting women entrepreneurship, the schemes have to be sensitive to the factors that play an important role in shaping the needs of women entrepreneurs. The size and scale of a women-led enterprise is often micro, many may not be highly educated and access to market is often one of the major challenge. Of the several policies and schemes, more than few have broad objectives, which are often vague. The schemes need more clarity and focus. Moreover, the support rendered with policies and schemes spread across different departments and domains, often make it difficult for women to access them. Many policies and schemes tend to focus on only one aspect of the problem faced by women.

In spite of various initiatives by the government, women entrepreneurs have limited access to bank loans; most women entrepreneurs first and foremost rely on self-finance. In the context where majority of women lack networks, market intelligence and the knowhow to start and expand their business, market access can be a key ingredient in propelling growth.

Conclusion

Entrepreneurship is presently the most discussed and encouraged concept all over the world to overcome economic challenges. Women being the vital gender of the overall population have great capacity and potential to be the contributors in the overall economic development of any nation. Therefore, programmes and policies need to be customised to not just encourage entrepreneurship but also implement strategies which can help support entrepreneurial culture among youth. Media has the potential to play the most vital role in entrepreneurial development by creating and highlighting all such platforms which inspire women and men to grow entrepreneurship culture in society. Developing countries are definitely in dire need to encourage women entrepreneurship as women workforce is promptly available to exploit the unexplored dimensions of business ventures. Generally speaking, globally business world has realized and is working on war footing to create entrepreneurship as the final

remedy to overcome all types of business and market challenges. Women are willing to take up business and contribute to the nation's growth. Their role is being recognised and steps are taken to promote women entrepreneurship. Reurgence of entrepreneurship is the need of the hour. Women entrepreneurs must be moulded properly with entrepreneurial traits and skills to meet changing trends and challenging global markets, and also be competent enough to sustain and strive in the local economic arena.

Empowering women is a pre-requisite for creating a good nation. When women are empowered, a society with stability is assured. Empowerment of women is essential as their thoughts and value systems lead to the development of a good family, good society and ultimately a good nation.

Dr A.P.J. Abdul Kalam

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SKILLING THE YOUTH THROUGH SCIENCE & TECHNOLOGY

Nimish Kapoor

Department of Science & Technology (DST) has initiated support for research and entrepreneurial skills among youth through various programmes that will help explore uncharted territories of science and technology. It is also supporting youth who are coming forward to develop sustainable solutions for the betterment of society at large and through these programmes initiating their entrepreneurship journey.

India's youth makes up for most of the population of the country. As per India's Census 2011, youth (15–24 years) in India constitutes one-fifth of India's total population. India is expected to have 34.33 per cent share of youth in total population by 2020. There is a need of skilled youth in the field of science and technology in the country so that their proficiency in various tasks can be fully utilized. Skill development programmes are being conducted with the aim of connecting large youth population in various science and technology related enterprises. The skill development programmes are being organised by various units and councils of the Department of Science and Technology, Government of India, and by various national laboratories of The Council of Scientific and Industrial Research, Government of India. Ministry of Environment, Forest and Climate Change also initiated Green Skill Development Programme.

Major changes in the Indian economy and the accelerated rate of industrial growth imply a larger demand for vocational skills. The rapid migration of rural population to urban areas has also created a demand for trained people to meet the needs of urban services. Further, a variety of new services has emerged such as financial, health, media, advertisement, urban utilities, cable TV and entertainment, and telecom services. There has also been a sharp growth and new product/service introduction in the agro-food processing industries for both internal use and for exports, requiring special skills.

As per the India's Science, Technology and Innovation Policy (STI) 2013 "science, technology and innovation should focus on faster, sustainable and inclusive development of the people. The policy seeks to focus on both STI for people and people for STI. It aims to bring all the benefits of Science, Technology & Innovation to the

national development and sustainable and more inclusive growth. It seeks the right sizing of the gross expenditure on research and development by encouraging and incentivizing private sector participation in research and development, technology and innovation activities. A Strong and viable Science, Research and Innovation System for High Technology led path for India (SRISHTI) are the goal for the STI policy." This can only be achieved through skill development in science and technology. The key features of STI policy also include, "enhancing skills for applications of science among the young from all social sectors".

In light of the STI policy and with the motivating words of Swami Vivekananda: "If the mind is intensely eager, everything can be accomplished—mountains can be crumbled into atoms," Department of Science & Technology (DST) has initiated support for research and entrepreneurial skills among youth through various programmes that will help explore uncharted territories of science and technology. It is also supporting youth who are coming forward to develop sustainable solutions for the betterment of society at large and through these programmes initiating their entrepreneurship journey. Following are the skill development programs of DST.



Skill Development Training through Science & Technology (STST)

Skill Development Training Through Science & Technology (STST) aims at development of skills through training intervention by developing special curricula and creation of models for offbeat and innovative skill areas. The National Science and Technology Entrepreneurship Development Board (NSTEDB), DST has initiated programmes of entrepreneurship development and self-employment generation using S&T methods and techniques and by using the expertise developed in technical and R&D institutions for upgradation of skills. With development of new and better technologies it becomes essential to upgrade the skills of man-power using such enhanced versions of equipment/tools. Training has been a long felt need in some of these areas and NSTEDB has been trying to fulfill this gap right from its inception. The present STST addresses itself to upgrade the skills in a need-based manner for a select group of processes and technologies.

The main objectives of STST are to demonstrate that skills can be developed through the application of Science and Technology in order to harness the resources of S&T infrastructure of the country, which have so far remained under-utilised as well as for skill development training to enhance quality of services/products and thereby enhancing income generation among skilled workers. Each training programme under STST will vary depending upon the type of trade. However, an attempt would be made to keep the duration less than a year and in most cases between 2 to 3 months.

National Implementing and Monitoring Agency for Training (NIMAT) NSTEDB and DST

With the objectives to promote and strengthen Science and Technology entrepreneurship, the NSTEDB sponsors: (i) Entrepreneurship Awareness Camp, (ii) Entrepreneurship Development Programme/Women Entrepreneurship Development Programme (iii) Technology based Entrepreneurship Development Programme and (iv) Faculty Development Programme.

These programmes under the project namely "DST-NIMAT" are mainly conducted by various institutions and educational institutions and other specialized organisations involved in the field of S&T entrepreneurship. The project is implemented by Entrepreneurship Development Institute of India (EDI), Ahmedabad on pan-India basis.

Student Start-up NIDHI Award

Student Start-up NIDHI (National Initiative of Development and Harnessing Innovation) award aims to take forward student innovations in New Generation Innovation and Entrepreneurship Development Centre (NewGen IEDC) to commercialization stage and accelerate the journey of idea to prototype by providing initial funding assistance. National Science and Technology Entrepreneurship Development Board (NSTEDB), DST has taken this initiative of helping start-ups with initial / ignition funding. It aims to financially support maximum 20 student start-ups each year with Rs 10 lakh each.

NewGen IEDC aims to inculcate the spirit of innovation and entrepreneurship amongst the young S&T students and encourage and support



start-up creation through guidance and mentorship. The programme will be implemented in academic institutions. Students will be encouraged to take up innovative projects with possibility of commercialization. Objectives of NewGen IEDC are to channelise the knowledge and the energy of youth towards becoming active partners in the economic development process and to catalyse and promote growth of knowledge-based and innovation-driven enterprises and promote employment opportunities amongst youth, especially students.

NIDHI-STEP / TBIS and NIDHI-PRAYAS

National Initiative of Development and Harnessing Innovation (NIDHI)-Science & Technology Entrepreneurs Parks and Technology Business Incubators (STEP/TBIS) are institutional linked facilities promoted by the Department of Science and Technology to nurture innovative and technologically-led new ventures during the initial and critical period i.e. the start-up phase.

In the present climate of innovation in India, there is support available for both R&D of ideas and commercialization of products, especially that which is provided by STEPs and TBIs promoted by National Science and Technology Entrepreneurship Development Board (NSTEDB) of DST. However, the primary aim of the STEPs and TBIs is to tap innovations and technologies for venture creation by utilizing expertise and infrastructure already available with the host institution, be it an academic, technical, management institution, or a technology and research park.

There is a definite need to address the gap in the very early stage idea/ proof of concept funding. Promoting and Accelerating Young and Aspiring technology entrepreneurs (PRAYAS) is one of the nine programs, specifically made to support young innovators turn their ideas into proof-of-concepts. This support shall allow the innovators to try their ideas without fear of failure, hence allowing them to reach a stage where they have a ready product and are willing to approach incubators for commercialization. Hence NIDHI-PRAYAS can be considered a pre-incubation initiative and a source of pipeline for incubators.

Knowledge Involvement in Research Advancement through Nurturing (KIRAN)

This is an exclusive scheme for women with the mandate to bring gender parity in S&T through

gender mainstreaming. The programme is aimed at providing opportunities to women scientists who had a break in their career primarily due to family responsibilities. KIRAN is aimed to provide opportunities to women scientists and technologists for pursuing research in basic or applied sciences in frontier areas of science and engineering, focused on S&T solutions of challenges/issues at the grassroots level for social benefit and create opportunity for self-employment and also a sustainable career for the women scientists. The scheme provides one year internship in the domain of Intellectual Property Rights (IPRs) which includes theory as well as hands-on training in law firms.

Augmenting Writing Skills for Articulating Research – AWSAR

Augmenting Writing Skills for Articulating Research (AWSAR) is an initiative that aims to disseminate Indian research stories among the masses in an easy to understand and interesting format. AWSAR has been initiated by the National Council of Science and Technology Communication (NCSTC), to encourage, empower and endow popular science writing among young PhD scholars and post-doctoral fellows during the course of their higher studies and research pursuits. As over 20,000 youth are awarded PhD in S&T every year in India, the scheme aims to tap this tremendous potential to popularise & communicate science and also to inculcate scientific temperament in the masses. One hundred best entries from PhD scholars are awarded in a year. Further, twenty entries are selected from articles submitted exclusively by post-doctoral fellows relating to their line of research for monetary incentives, the highest of which can go up to Rs. 1 lakh. This programme is being coordinated by Vigyan Prasar, an autonomous institute of DST (Department of Science & Technology).



Writing popular articles based on a topic or focus of S&T research being conducted by a PhD scholar is both an art and a science, and still more of a skill or competency. It is even more challenging to tell a story about scientific affair evolving out of a RSD lab. These narratives from various research labs in the country need capturing and revealing the message of science in an easy to understand but at the same time interesting format, to connect with masses.

The workshops aimed at skill development for effective communication and noteworthy writing in popular science are being organized under AWSAR programme. Objectives of the workshops are to emphasise on effective ways of writing in the clearest way possible, use of jargon which explains its meaning clearly and use of appropriate words, language, and sentences for particular effects as well as to provide tips and techniques required for converting research in to popular writing. Research scholars can participate in AWSAR programme by submitting their popular science stories related to research work so to publish their research in way that would interest non-scientific audiences. The story should focus on answering the queries objectively.

Green Skill Development Programme (GSDP)

Green skills contribute to preserving or restoring environmental quality for sustainable future and include jobs that protect ecosystems and biodiversity, reduce energy and minimize waste and pollution. In line with the Skill India Mission, Ministry of Environment, Forest & Climate Change (MoEF&CC) has taken up an initiative for skill development in the environment and forest

sector, to enable India's youth to get gainful employment and self-employment, called the Green Skill Development Programme (GSDP). It enhances the employability of people in jobs that contribute to preserving or restoring the quality of the environment, while improving human well-being and social equity.

The programme endeavours to develop green skilled workers having technical knowledge and commitment to sustainable development, which will help in the attainment of the Nationally Determined Contributions (NDCs), Sustainable Development Goals (SDGs), National Biodiversity Targets (NBTs), as well as Waste Management Rules (2016).

The candidates completing the Course(s) may be employed gainfully in the zoos, wildlife sanctuaries, national parks, biosphere reserves, botanical gardens, nurseries, wetland sites, state biodiversity boards, biodiversity management committees, wildlife crime control bureau, industries (involved in production/ manufacturing of green products, as ETP operator), tourism (as nature/eco-tourist guides), agriculture, education & research sectors as well as engage in waste management, etc. Some of the courses enable the candidates to become self-employed.

Technology based Entrepreneurship Development Programme (TEDP)

Technology based Entrepreneurship Development Programme (TEDP) primarily focuses on training and development need of S&T entrepreneurs in a specific technology area (for example, leather, plastic, electronics & communication, fragrance & flavour, instrumentation, sports goods, biotechnology, IT computer hardware, food processing, bio-medical



equipment, glass and ceramics, jute products, sustainable building materials, herbs and medical plants processing, etc.). The participants are provided with hands-on training in indigenous technologies developed by R&D institutions that are available for commercial exploitation.

In each TEDP, 20–25 persons, having a degree/diploma in S&T, are trained through a structured training programme of about 6 weeks duration. The TEDP provides class room training on motivational management areas besides actual hands-on training in the specific technology areas by technology providers. TEDP is a structured training programme of 5-weeks duration designed to motivate and develop entrepreneurs in specific products/technologies/processes developed by CSIR labs, R&D institutions, universities, etc.

In a TEDP the entrepreneurs are exposed to technical knowledge about the products and technologies and are enabled to develop their skills at the lab of the technology provider; the R&D lab having commercially viable technologies, get potential entrepreneurs as its "takers"; and the entrepreneurship-training institute can put concerted efforts in a specific discipline of product-technology and thus can have better control over the course of the programme and its success. The participants are selected through various tests and personal interviews to assess their potential of becoming a successful entrepreneur.

CSIR's Integrated Skill Initiative Programme

Council of Scientific and Industrial Research's Integrated Skill Initiative Programme has been initiated with integrated skill initiatives in diverse areas with varying duration by the CSIR's labs. All these training programmes are interconnected and linked to industry requirements and thus would invariably contribute to the subsequent employment generation, including small-scale entrepreneurship. CSIR, with its nearly 8000 highly talented S&T personnel, excellent inter-disciplinary expertise, state-of-the-art facilities and a pan-India presence, is in a unique position to contribute towards government's enterprise of enhancing programmes in Skill India and Stand-Up India.

Some of the major skill development programmes of CSIR

- CSIR-Central Leather Research Institute, Chennai and Andhra Pradesh Scheduled

Castes Cooperative Finance Corporation (APSCCFC) signed an agreement for skill training, upgradation and entrepreneurship development of 10000 underprivileged candidates who are below the double poverty line with an aim of creating income generation assets for their households enabling their socio-economic development.

- CSIR-Institute of Himalayan Bioresource Technology, Palampur initiated Skill Development Training Programmes on animal breeding and housing practices, hands-on laboratory experiment and analytical exposure, gardenet, plant tissue culture, floriculturist-protected cultivation and laboratory practices in animal house.
- CSIR-Central Drug Research Institute, Lucknow started skill development programmes on healthcare and life sciences and offers six certificate courses of level III to VII under the CSIR-CDRI Skill Development Programme. Skill shortage remains one of the major constraints to continued growth of the Indian economy. This knowledge-gap can be addressed by professionally trained youth of India. The courses will meet the aspirations of students, young researchers and industry-sponsored personnel looking for training and will provide an opportunity for skill development and hands-on experience in the chosen area.
- CSIR-Indian Institute of Toxicology Research, Lucknow is contributing to the CSIR Skill Initiative by initiating Skill Development Certificate Course in Regulatory-Preclinical Toxicology with the emphasis on specialized courses related to environment, regulatory toxicology and computational biology where skill development is either inadequate or almost lacking. The objectives of these programmes are to skill the youths in such a way that they get employment.

Today, with the country-wide operations of Skill India programmes based on science and technology, young India is being given new wings of development and the skilled youth are preparing for long goals.

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VOCATIONAL EDUCATION ACROSS SCHOOLS IN INDIA

Summary

In a world with burgeoning emphasis on experiential learning, it is time vocational education takes centre stage in public policy. This is even more critical in the current context, given that the Economic Survey 2018-19, estimated that 93 per cent of the total workforce is engaged in informal sectors of the economy. Vocational education refers to education programmes that are designed to prepare individuals for specific occupations. An overview of literature highlights the ample benefits to vocational education, borne across the world.

With over 60 per cent of its population in the productive age group (aged 15-59), India has entered a period of demographic dividend which is approximated to last another 37 years, until 2055. The United Nations Population Fund defines demographic dividend as the 'economic growth potential that can result from shifts in a population's age structure, mainly where the share of the working age population is larger than the non-working age (or dependent) population.' In order to realise this economic potential, it is imperative to ensure that India's youth is equipped with employable skills to meet the growing demands of the labour market.

Estimates suggest that India's working age population is likely to grow by 5.7 million per year during 2021-31, and 4.2 million each year during the subsequent decade (2031-41). Thus, in a world with burgeoning emphasis on experiential learning, it is time vocational education takes centre stage in public policy. This is even more critical in the current context, given that the Economic Survey 2018-19, estimated that 93 per cent of the total workforce is engaged in informal sectors of the economy.

Vocational education refers to education programmes that are designed to prepare individuals for specific occupations. It imparts niche skills along with a set of specific competencies in defined areas of work in the economy, through the integration of a complex of knowledge, attitudes and practical experience. In India, formal vocational education is offered in schools at the secondary (Classes 9 to 10) and higher secondary levels (Classes 11 to 12),

while vocational training is provided through higher education institutes which offer degree/ diploma programmes.

An overview of literature highlights the ample benefits to vocational education, borne across the world. From an economic viewpoint, multiple studies have reflected higher returns including greater average daily wage rates, increased work participation and lower unemployment rates among vocationally educated labour in comparison to untrained labour. Further, vocational education can even serve as an impetus for entrepreneurship by creating new job opportunities.

Acknowledging the significant potential of vocational education towards boosting India's economy, the Government of India has undertaken several initiatives. Post-independence, vocational education found significance in the 1964 Kothari Commission Report, which noted that multiple jobs can be performed by well-trained higher secondary students and don't require university degrees. The report suggested two distinctive streams at the higher secondary stage – one that prepares students for further/ tertiary education in universities, and another, preparing them for a variety of vocations.

Subsequently, the New Education Policy of 1986 envisaged the introduction of a systematic, well planned and rigorously implemented programme for vocational education to enhance employability, reduce the mismatch between demand and supply of skilled workforce, and provide an alternative for those pursuing tertiary education.



Vocational education and training was one of the core thrust areas identified in the XIIth Five Year Plan. Despite the benefits of vocational education and the prominent space it has found across multiple policy and plan documents, its coverage in India has been rather limited. In fact, the XIIth Five Year Plan estimated that less than 5 per cent of the Indian workforce aged 19–24 received formal vocational education in comparison to 52 per cent in United States of America, 70 per cent in Britain, 75 per cent in Germany, 80 per cent in Japan and an impressive 96 per cent in South Korea.

Challenges in the School Education Sector

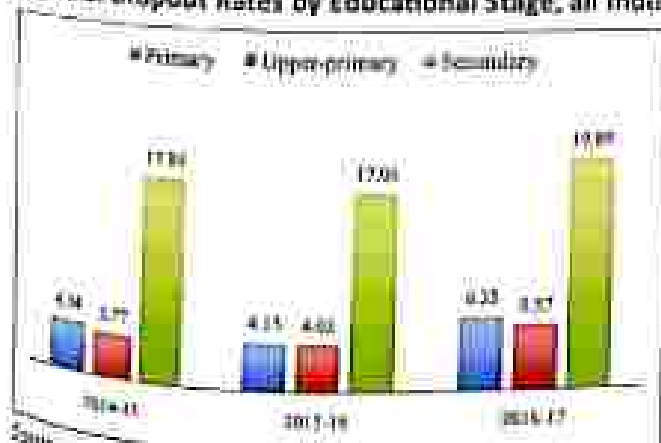
A critical challenge plaguing the school education sector is the high dropout rate, especially at the secondary stage of school education (Figure 1). Students tend to drop out of school to enter the labour market or as they perceive low returns from education.

Figure 2 depicts low and almost stagnant enrollment in vocational streams across the nation. Over 40 per cent of students enrolled in classes 11–12 chose the science stream, while less than 2 per cent of the students enrolled chose to pursue the vocational stream, across three years from 2014–15 to 2016–17.

Low enrollment in vocational education may be correlated with the low coverage of vocational education in schools. As per the Unified District Information System for Education (UDISE) 2016–17, only 4,084 schools offered National Skills Quality Framework (NSQF)-compliant vocational education in the country. In fact, only 50 per cent of the States/UTs report a positive number of schools imparting vocational education, with Haryana having the highest absolute number at 990 schools.

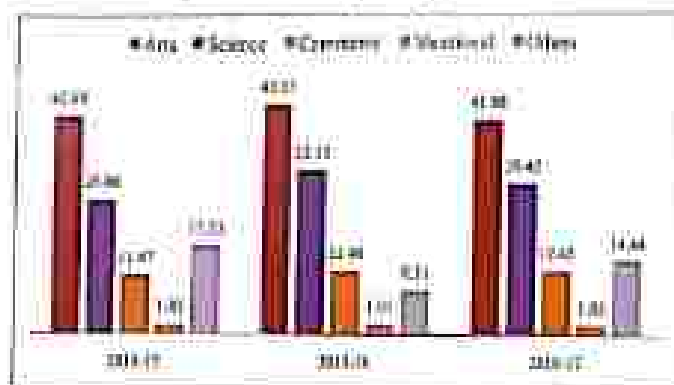
NITI Aayog's School Education Quality Index (SEQI) provides a detailed state-wise analysis of

Figure 1: Dropout Rates by Educational Stage, all India



Source: UDISE Flash Statistics, 2016–17

Figure 2: Percentage enrollment by stream at higher secondary stage, all India



Source: UDISE Flash Statistics, 2016–17

the percentage of schools covered by vocational education. As shown in Table 1, only six states and UTs – Himachal Pradesh, Maharashtra, Haryana, Jammu and Kashmir, Goa, as well as Andaman & Nicobar Islands offered vocational education in more than 10 per cent of their schools in the Reference Year (2016–17).

In terms of incremental progress from the Base (2015–16) to Reference Year, 10 States and UTs improved the coverage of schools offering vocational education. Haryana witnessed the largest increment, where the number of schools offering vocational education increased by over 9 percentage points. Despite progress in these states and UTs, the coverage of vocational education still remains less than 5 per cent in almost 75 per cent of the country.

Table 1: Percentage of Schools Covered by Vocational Education

| States/UTs | Base Year (2015-16) | Reference Year (2016-17) |
|---------------------|---------------------|--------------------------|
| Large States | | |
| Himachal Pradesh | 13.2 | 20 |
| Maharashtra | 17 | 19.7 |
| Haryana | 9.4 | 18.8 |
| Jammu & Kashmir | 4.1 | 10.8 |
| Punjab | 8 | 7.1 |
| Chhattisgarh | 1.3 | 5.8 |
| Assam | 1.5 | 2.7 |
| Madhya Pradesh | 0.6 | 2.1 |
| Uttar Pradesh | 0.5 | 0 |
| Telangana | 0.1 | 0 |
| Odisha | 0.1 | 0 |
| Kerala | 1.4 | 0 |
| Karnataka | 0.1 | 0 |
| Jharkhand | 0.6 | 0 |
| Gujarat | 0.5 | 0 |

Government agency. Further, the University Grants Commission (UGC) is implementing three schemes, namely, Community Colleges, BVoc Degree Programmes, and Deen Dayal Upadhyay Kaushal Kendras in Universities and Colleges to impart skill development based vocational courses and research programmes.

The Road Ahead

MHRD is currently in the process of creating a National Vocational Education Qualifications Framework (NVEQF). The framework would establish common principles and guidelines, aligned to global standards, for a nationally recognised qualification system covering schools, vocational education institutes and institutes of higher education with qualifications ranging from secondary to doctorate level. It is set to lay the roadmap for vertical and horizontal mobility with multiple entry and exit options for students. Involving extensive consultations with State Governments, the corner stone of the NVEQF would be the close partnership and collaboration with industry/ potential employers at all stages, right from the identification of courses to content development, training, provision of resource persons, assessment, accreditation, certification and placement.

The Draft National Education Policy (NEP), 2019 aims to integrate vocational education in all schools and provide access to vocational education to at least 50 per cent of the learners by 2025. It envisions that all students must receive vocational education in at least one vocation during their secondary and higher secondary education. Students will have the option to specialise to various degrees in vocations of their choices. However, for this to pan out in reality, multiple factors need to be considered.

Firstly, this necessitates a transformation of the current system to one that is liberal with a semester system for students to opt for various streams or courses from Classes IX to XII. Prior exposure and orientation to vocations across sectors may be provided during Classes VI to VIII to ensure that students are equipped to make informed choices at the secondary stage.

Provision of high-quality vocational education requires regular revision of the curriculum as well as collaboration with appropriate training partners. Content and curriculum must constantly be revamped to ensure India's youth are adequately skilled to meet the needs of the Fourth Industrial Revolution. It is important to leverage local skill knowledge providers to help train students for vocations that are relevant to their local contexts and improve their likelihood of

employment. Schools should ensure that all children successfully complete Class XII and must also impart supplementary courses in entrepreneurship, soft skills, communication, digital and financial literacy, etc. The feasibility of part-time apprenticeship programmes and evening/night classes may also be explored to facilitate a holistic education.

In order to successfully boost access to vocational education, there needs to be a massive expansion in the resource pool required to deliver such an education. Academic support institutions need to be strengthened and training modules need to be developed to ensure that a requisite number of effective teachers and trainers are available. This would require greater investment in human resources and infrastructure. Additionally, industry linkages must also be strengthened to facilitate transition to work. A convergence of efforts across all levels of policy and implementation—local, state and central levels—is critical to enable the transition of this vision into reality.

The World Bank's World Development Report 2019 titled the 'Changing Nature of Work' shows the need to leverage technology to facilitate improved access to vocational education. Chile, for example, is leveraging technology to address information asymmetry by creating online platforms where students can access information on the employability of individuals with various degrees, wage profiles, and courses to take for certain occupations. The report also enlists three factors that make flexibility between the general and vocational tracks imperative for the evolving nature of economic activity. First, the combination of general and vocational skills are increasingly being valued. Second, even vocational jobs seem to be requiring more intense higher-order general skills, implying that this type of skills acquisition should be accessible before and during one's working life. Third, people trained in relatively narrow vocational skills would benefit from opportunities to gain new skills. For example, the Democratic Republic of Congo and Tanzania offer "bridging" arrangements that enable vocational graduates to continue to university.

Policy and interventions in India therefore, needs to take cognizance of these aspects for future vocational reforms. Revamping the spectrum of vocational education will lay the bedrock for India to realise the Sustainable Development Goal to promote lifelong learning opportunities for all, within this decade.

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The Publications Division Showcases a Treasure Trove of Books

The Publications Division participated in the New Delhi World Book Fair 2020 held at Pragati Maidan, New Delhi from 4th-12th January, 2020 organised by National Book Trust. It was an important forum where publishers, authors, booksellers, and book lovers got an opportunity to interact. The Division received an overwhelming response at the New Delhi World Book Fair and had a whopping sale of over Rs. 52 lakh. This is a record in itself in the entire history of Publications Division in any book fair. Over the entire period of ten days, the stall of Publications Division witnessed a slew of visitors from all walks of life.



The stall of Publications Division was declared open by the Additional Secretary of the Ministry of Information & Broadcasting, Shri Atul Kumar Tiwari who also released a number of books on the occasion.

The World Book Fair 2020 had an interactive session 'Lekhak Evam Sahitya Manch' on the commemoration of 75 years of literary journal Aajka. Also, a number of books were released by



Shri Tiwari. Book lovers enriched their collection of books through a diverse range of books and journals on Indian heritage, history, rich cultural legacy and important speeches.

The theme of the book fair was 'Gandhi: The Writers' Writer' dedicated to the commemoration



of 150th Birth Anniversary of Mahatma Gandhi. Being one of the prominent Gandhian publishers, Publications Division had a befitting display of titles on Mahatma Gandhi in print and e-versions. Other prominent books on speeches of President, Vice President and Prime Minister and various diverse subjects ranging from history and heritage to children's literature were also displayed.



SKILL DEVELOPMENT AND HEALTHCARE

Chandrakant Lahariya

There is a definitive and very important role of skill development in health service delivery, which contributes to improved health outcomes, women empowerment, job creation, economic development and growth. The return on the investment on health sector skill development is clearly high and desirable. Considering the existing shortage of health workforce and need for skilling, reskilling and upskilling, urgent mechanisms need to be established.

There is a definitive and very important role of skill development in health service delivery, which contributes to improved health outcomes, women empowerment, job creation, economic development and growth. The return on the investment on health sector skill development is clearly high and desirable. Considering the existing shortage of health workforce and need for skilling, reskilling and upskilling, urgent mechanisms need to be established.

In a report released by NSDC in the year 2015, the health workforce requirements for India was estimated to be around 7.4 million (74 lakh) by the year 2022, against an estimated available workforce of 3.6 million (36 lakh) in 2013. More recently, the National Health Profile 2018 of India reported availability of 5.8 million (58 lakh) health workers—including nearly 1 million (10 lakh) allopathic doctors, 770,000 AYUSH doctors, 1.9 million (19 lakh) nurses, 900,000 pharmacists, 841,000 Auxiliary Nurse Midwife, 250,000 dentists and 56,000 lady health visitors—as on March 31, 2017. This meant a combined density of doctors, nurses and midwives in India is around

30/10,000 people, which is far below the threshold of 44.5/10,000 required to achieve Sustainable Development Goal - 3 (SDG3), as determined in the 2016 WHO Global strategy for Human Resource for Health: Workforce 2030. Thus, by this criterion, India needed around 1.6 million doctors, nurses and midwives to achieve the proposed threshold.

In early 2017, the Government of India committed to Universal Health Coverage (UHC) through the new National Health Policy (NHP). Notably, UHC is a globally agreed commitment and a target under Sustainable Development Goal - 3, to be achieved by the year 2030. The NHP 2017 has recognised the challenges of shortage & inequitable distribution of health workforce, and proposed increasing the availability and augmentation of skilled health human resource as one of the key strategies to advance UHC in the country. Keeping the focus on UHC and increasing availability of skilled health workforce in India, NITI Aayog's 2018-22 Strategic Plan for New India@75 has aimed at generating 1.5 million (15-lakh) jobs in the public health sector by 2022-23.





Human Resources and Skill Development are Interlinked

Filling the vacancies of human resources, who are sufficiently trained, is only a part of the process. These trained workforces need to have the required skills to be effective at tasks assigned. Alongside, even available staff needs to be re-skilled and up-skilled on regular basis, through on the job trainings.

Clearly, skill development in various forms (skilling, re-skilling and up-skilling) is key for any sector, more so for service predominant sectors such as health. Understandably, the need for health workforce expansion and skill development has been recognised and agreed widely in India. It was this backdrop that the Healthcare Sector Skill Council (HSSC), as not-for-profit, non-statutory, certifying organization under the Ministry of Skill Development and Entrepreneurship, Government of India has been set up. The HSSC aims to skill 4.8 million people, in a phased manner, over the next decade in the healthcare space.

There has been another emerging opportunity and initiative to add to skilled health workforce. Following upon the promise of UHC in NHP 2017, India has intensified to increase access to health services through the Ayushman Bharat Programmes with two components: setting up of 150,000 Health and Wellness Centres (HWCs) by December 2022 and Pradhan Mantri Jan Arogya Yojana (PM-JAY). In the roll out of HWCs, an estimated 150,000 new

Mid-Level Health Providers (MLHP) & Community Health Officers (CHOs) would be required and recruited in this process. Similarly, jobs are expected to be created under PM-JAY at various levels. This number represents 10 per cent of the NITI Aayog's proposed strategy.

Discussion

The workforce expansion and skill development need to be continued, focused on addressing the existing challenges. The benefits of skill development in health is likely to be maximum for rural, underserved, marginalised populations. It will help in improving their health outcomes and address inequities. However, equitable and sufficient availability of health workforce cannot be expected to be achieved by 'overflow of the production capacity' and hoping them to be available to serve in rural and underserved areas. Targeted approaches would be needed to ensure that skilled workforce is available where more needed.

Often, the discourse on shortage and skilling of health workforce is restricted to doctors, nurses and a few other categories of health staff. There is a strong case for investment in other categories of health workers. The National Health Profile 2018 estimate of 5.8 million health workers in India does not include several key cadres, such as allied health professionals, lab technicians, X-ray technicians, phlebotomists, etc. The data on allied health professionals is currently inadequate to fully estimate the shortage. However, what is known is that many more positions of allied health professionals are required to achieve a more effective skill mix. This is clearly an opportunity for skill development in India. Similarly, as 150,000 MLHP and CHOs are trained and posted at healthcare facilities, the issue of skill development for their career progression should also be considered.

There is another aspect of public health cadre in India. As of now, only a few Indian states have cadre of public health professionals which are often recommended including in the NHP 2017 and the Strategy for New India @75. The country could also benefit from the introduction of new public health cadres, including public health managers. Though, there are around 44 public health institutions offering Master of Public Health (MPH) courses and



nearly 350 medical colleges training public health professionals, there is a need for re-designing the training programmes to match the skills required to implement public health activities as well as create job opportunities for public health professionals through cadre formation. Only then will it succeed.

Though, HSSC is an emerging and important mechanism, the skill development should not be equated with only HSSC; rather it has to be a function of all healthcare institutions in India. In that process, maintaining the quality of these institutions through accreditation mechanisms, quality control and by development of suitable curriculum training programmes is necessary.

Skill development in health sector has a few other benefits such as enabling access to healthcare for marginalised sections of the community, which is central to the process. Alongside, skill development in health sector, it also improves the formal employment particularly for women and youth. Health workforce includes more women than all other sectors except education and thus contributes to women empowerment. Increasing the number of health jobs is a major opportunity to rapidly increase participation of women in the labour market. Informal employment in India represents nearly 90 per cent of all employment; thus, investment in the health workforce would increase the percentage of formal employment.

Skill development for health and resulting health improvement can prove beneficial for the economy as well. It has been estimated that for every Dollar (or Rupee) invested on health, it gives 9 to 10 times economic return. India's public health expenditure was 1.2 per cent of the GDP in 2016-17. Therefore, the commitment of increasing Government investment for health to 2.5 per cent of

the GDP by the year 2025 (NHP 2017), can contribute to economic growth. Skill development and increasing resources and investment in expanding the health workforce not only improves health outcomes, but also gives boost to employment as well as helps in achieving the SDGs.

Globally, the United Nations High-Level Commission on Health Employment and Economic Growth (ComHEEG) highlighted that investment in the health workforce can have a significant payback across multiple Sustainable Development Goals, including SDG 1 (poverty elimination), SDG 3 (good health and well-being), SDG 4 (quality education), SDG 5 (gender equality) and SDG 8 (decent work and economic growth). The shortage of skilled workforce in health is not an India-specific challenge. ComHEEG has projected global shortfall of 18 million health workers by 2030. ComHEEG has also pinpointed key policy areas that have significant potential for the health workforce to achieve high economic returns of investment and generate multiplier effects in the labour market. These include health, social protection, social cohesion, health security, among others that can provide opportunities to increase women's participation in the labour market and reduce youth unemployment or underemployment.

Conclusion

There is a definitive and very important role of skill development in health service delivery, which contributes to improved health outcomes, women empowerment, job creation and economic development and growth. The return on the investment on health sector skill development is clearly high and desirable. Considering the existing shortage of health workforce and need for skilling, reskilling and upskilling, urgent mechanisms need to be established by increasing funding to improve availability of skilled health workforce in India. This will contribute to India's progress towards Universal Health Coverage, accelerate economic growth and create employment. It is a 'everyone-win' situation for the country with maximum benefits to rural and underserved settings.

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SKILL DEVELOPMENT: ISSUES AND CHALLENGES

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Skill Development must not be viewed merely as having an individual's expertise to make them employable. Instead, it is a multi-pronged strategy providing skilled manpower to Indian industry, an essential input to the success of 'Make in India' to widen India's export base, tap global labour market and an antidote to poverty alleviation.

Skilling offers long lasting solutions for India on many fronts, the most significant of them being employment generation. India is on the cusp of demographic and technological revolution. This impacts every sector of the Indian economy, be it primary, secondary and the tertiary.

On account of large-scale digitization, the labour force entering the job market can ill-afford to be mere degree holders. They also need high class skills. The industry is entering the fourth phase of industrial revolution. The introduction of Artificial Intelligence (AI), internet of Things (IoT), machine learning, digitization and analytics, are changing paradigms in every industry. As a result, skilling or skill development is no longer a luxury, but mandatory for an individual, the industry and the economy at large.

The government in 2015 launched the Skill India initiative that aims to train and empower the

country's youth to make them more employable and enhance their productive value. The skill mission aims to impart different skills to over 400 million people in India by 2022.

Since then, various ambitious schemes such as the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) have been launched in order to enable a large number of youth in the country to take up industry-relevant skill training, which will help improving their livelihood prospects. Such a unique mission will help transform its demographic potential into a dividend to help fuel India's double digit growth in the future.

One of youngest nations in the world, India has a whopping 62 per cent of its youth in the working age group of 15-59. In addition, the young working population in India has the potential to be skilled for global jobs as well. Such trained persons can migrate to countries with large ageing populations, which have become pensioners' haven. These



countries present openings for skilled work force as they face challenges of running offices, factories, services and even roles in agriculture.

However, according to the National Skill Development Mission (NSDM), India currently faces a severe shortage of well-trained, skilled personnel. In the 'Union Ministry of Skill Development and Entrepreneurship report', India's total 4.69 per cent of formally skilled workers compares unfavourably to UK's 69 per cent skilled workforce, USA's 52 per cent, Japan's 80 per cent and South Korea's 96 per cent highly trained workforce.



According to Census 2011, 104 million fresh entrants to the workforce would require skill training by 2022 while 298 million of the existing workforce will require additional skill training over the same period.

About two-thirds of Indian employers say that they constantly struggle to find workers with the right skills. Large sections of the educated workforce have little or no job skills, making them largely unemployable.

Realising such shortfalls, the government has decided to focus on scaling up skill training to meet the demands of employers and push economic growth. The mission is being implemented through a streamlined institutional mechanism driven by the Ministry of Skill Development and Entrepreneurship (MSDE).

The National Skill Development Corporation (NSDC) set up as a public-private partnership (PPP) stimulates private sector participation in the Indian skill development sector. As a result, not a day goes without a new skill development initiative being unleashed.

Today the National Skill Development Mission is being taken forward by the active participation of the central government, state governments, industry, private sector and global participation.

To achieve a desired talent pool, collaboration with the industry has been rolled out with different Sector Skill Councils (SSC) incubated by the NSDC for fostering industry connections and developing industry-relevant courses and curriculum. So far, 37 SSCs are operational with more than 600 industry

representatives in various governing councils. There is significant participation of Indian business houses in (NSDM).

To establish itself as the global skill capital, the India International Skill Centre (IISC) programme has been launched. This involves providing skill trainings through the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and the Pravasi Kaushal Vikas Yojana (PKVY) to those seeking global mobility and certification benchmarked to international standards.

Leveraging its close ties with several countries, India is seeking international cooperation in the field as well. Both India and Japan are working together to implement Japan's Technical Intern Training Programme (TITP). It is an on-the-job training scheme that provides for internship opportunities over 3-5 years for foreign nationals in Japan, with NSDC as the nodal implementing agency.

Similarly, India has also signed for technical collaboration with countries such as the UK, Australia and the UAE for benchmarking and mutual recognition of standards.

To increase the mobility of blue and white-collar Indian workers, government-to-government and B2B partnerships are also being sought and developed for new markets such as Western Europe, Canada, Australia and East Asia.

In another major initiative, India has rightly undertaken Recognition of Prior Learning (RPL). According to estimates, there are 384 million working people who favour RPL and apprenticeship.

related interventions in India. This is a huge task that is being currently met by active collaboration with the industry and the private sector.

Another challenge being addressed by the NSDM is encouraging female participation in the labour force. There are only 91.6 million women in the country's 395.2 million-strong labour force.

To boost their participation, the current ecosystem allows them to access the skill development mission. More than 50 per cent of the candidates trained under PMKVY or the Pradhan Mantri Kaushal Vikas Yojana are women. Many of them have also been trained in unconventional roles, such as in the electronics and hardware sectors.

Skill training in areas such as digital and financial literacy, entrepreneurship, website design, 2D and 3D design, hardware repair and farm management are being offered to include and promote women in non-traditional areas.

A lacuna in skill development has been fragmentation of the ecosystem. There was duplication of roles and responsibilities of different agencies. To address this, the government merged the existing regulatory institutions in the skill development industry – the National Council for Vocational Training (NCVT) and National Skill Development Agency (NSDA) – to establish a new National Council for Vocational Education and Training (NCVET). This has paved the way for a single regulator in the country instead of multiple authorities.

The Ministry of Skill Development and Entrepreneurship in 2016 constituted a committee for rationalisation and optimisation of the functioning of the Sector Skill Councils.

The committee in its recommendation had emphasised on the need for a holistic 'Vocational Education and Training (VET)' system across India. This includes vocational education in schools and institutes of higher education; vocational education by the NSDC's private Vocational Training Partners (VTPs); public and private 'Industrial Training Institutes'; 'in-plant' training by private companies and the skill development schemes of 16 ministries of the central government.

The government has also begun to nurture skill development in the schooling system. This is because

India will have the highest number of secondary school graduates among South Asian nations, estimated to cross the 30-crore mark by 2030.

Taking note of this, a report on skill development by UNICEF titled Global Business for Coalition-Education 2030 Skills Scorecard, predicted that nearly half of this pool of graduates will lack capabilities to enter the workforce. What is heartening in the report, however, is the mention that the number will be an improvement on the present 19 per cent.

Equally, India is also addressing the concerns of skill deficit in rural areas, which is essential considering that India lives in its villages. As per the 2001 census, 72.2 per cent of the country's total population is distributed in about 638,000 villages while the remaining 27.8 per cent lives in more than 5,100 towns and over 280 urban agglomerations.

Since its inception, the Deen Dayal Upadhyay Grameen Kaushal Yojana (DDUGKY) supported by the Hyderabad-based National Institute of Rural Development and Panchayat Raj (NIRDPR) placed 4.5 lakh youth between the age-group of 18 and 35 years, across the country. The DDUGKY trains unemployed youth under the BPL category on various skills in order to provide them employability.

However, even this is quite insufficient, given the under-skilling in rural India. Realising the challenges and business opportunities, many start-ups and organisations have set up skill training centres in the country's hinterland to deliver vocational training and help individuals get more employment opportunities.

Eying a bigger pie of the billion plus market, the global multi-nationals across different sectors are not only setting up manufacturing base in India but also setting skill shop to train apprentices and upgrade skill of technical professionals.

Skill Development must not be viewed merely as honing an individual's expertise to make them employable. Instead, it is a multi-pronged strategy providing skilled manpower to Indian industry, an essential input to the success of 'Make in India', to widen India's export base, tap global labour market and an antidote to poverty alleviation. Finally, all this will help ignite engines of economic growth as India enters a new decade.

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