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Skill Development in India: Challenges and Opportunities

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Abstract

Objectives: The Indian government's 'Make in India' campaign and the accelerated growth in the economy has highlighted the demand for skilled manpower in the country. The objective of this article to understand the current state of vocational education and training and review the vocational training models of the emerging economies.

Methods/Statistic Analysis:

The Skill development model of India is studied in detailed with reference to the 'Make In India' campaign. The vocational training model of the China and Brazil is also reviewed for the study as they are a part of the BRICS countries and also the emerging economies of the world. Singapore's vocational education model is also studied to gain additional insights on the skill development initiatives and policies.

Findings: The "demographic dividend" explains for India being the youngest workforce country in the world. The country will have the lowest median age much below that of China and Organisation forEconomic Co-operation and Development (OECD) Countries. It means that India can be the largest provider of workforce to the world. But still, India has difficulty to fill up jobs due to a shortage of applicants with the right skills and knowledge.

It also brings out the difficulty the country faces with matching the jobs to the skills available. India is still behind countries like China and Singapore in imparting skills. The paper aids in analyzing the current skill gaps in the country and the areas where there is a huge scope of supply of skilled workforce. It aims to identify the challenges faced in development of skills in the country and highlighting the employment opportunities arising in the different sectors with emphasis on the Make in India campaign.

Conclusion/Improvements: There is a huge scope of generating skilled workforce in the country and utilize the 'demographic dividend'. The branding activities and active involvement of Public Private Partnership ensure a better supply of skilled workforce.

1. Introduction

The Indian economy grew at an advanced rate of 7.6 percent year in the quarter January – March 2016, thereby making it a fastest economy to grow. India's demographic profile is helping the country to aim for an accelerated economic growth. India is expecting a huge growth in the labour market by having 64.8 percent of the population as the working population. It gives a lot of benefit to the country in the labour market. Most of the economies in the world are ageing fast,their contributions adding to the global workforce will bereduced to a great extent While, India will be an exceptionto it, with a major dominance in the global workforcein the years to come. India will be enjoying dominancein the global workforce by being the biggest provider ofskilled labour to the world. Boston Consulting Group,in its study discussed the workforce demand and supplychallenges faced in the world. It stated that by 2020the world may expect a shortage of 47 million people.

India, on the other hand will have a surplus of 56 million working people. India will be able to gain advantage of the increased working population if they able to equip its workforce with the appropriate skills. In this respect, skills development emerges as one of the most critical aspect of India's economic policies.

2. Objectives of the Study

The skill development model forms the basis of the study. The objectives of the study are mentioned below:

• To study the present system of regulation of the Vocational Education, Training and Skill Development sector in India
• To review the system adopted by countries like China, Brazil and Singapore
• To know the challenges with respect to the skill development in India
• To assess the opportunities available for skill development in India

3. Review of Literature

In order to understand the Skill Development system, the Skill Development Model of India has been studied. The skill development model of China, Brazil and Singapore is also studied in order to gain an international perspective to skill development. China and Brazil have been chosen for the study as they are a part of BRICS countries and are the emerging economies of the world like India. Singapore has been ranked as the 2nd highly skilled country of the world1 in the year 2015-16. So for understanding the model of a highly skilled country, Singapore's Vocational and Technical Education model is being studied.

3.1 Skill Development System in India

India experiences a huge advantage by having a young workforce, which means it high scope of providing manpower to the labour market. After assessing the high demand for the skilled workforce in the world, the Ministry of Skill Development and Entrepreneurship was formed. The ministry was announced in June 2014. The Prime Minister of India, Shri Narendra Modi felt the need to focus on skill development considering the changes happening in the labour market and hence the ministry was established. It focused on working in close collaboration with other ministries to meet the huge demand of skilled workforce. It aimed at establishing and lying down of consistent and common standards of teaching and collaborating the efforts of the organization aiming at development of skills. It also focuses on bringing all the other ministries to come together and function in a unified manner towards skill development. It lays down the objectives and the expected outcomes and also ascertains the different institutions that will ensure that the expected outcomes are achieved. The set-up of Skills Development with major parties involved in appropriately designed. It includes a lot of parties involved in the skill development in the country (Refer Figure 4). The Ministry works in close collaboration with the National Skill Development Corporation (NSDC). It helps training institutes map the skill sets, involves in the market research and design the relevant curriculum. It aims at bridging the gap between the skills demand and supply by boosting the skill development initiatives.

In India, the skill acquisition is by through two channels which include both formal and informal methods.

Both the Public and Private Sector aims at imparting the formal training. In addition to this, the government is also looking at the Public and Private Partnership known as the PPP model. The Industrial Training Institutes known as ITIs are run by government and is a major channel of

gaining Vocational training in the country. Apart from this, there are privately run Industrial Training Centres

Known as ITCs and vocational schools. In India, the Labour Laws also ensures that the students going for technical education are trained through the Apprenticeship training provided by the Industry. Though there is a lot of participation from the private sector on skill development but the public sector dominates the skill development programs in the country. The informal channel is more unstructured and can be imparted through working on the job or through experiential learning. The government of India designed a policy framework which aimed at developing the skills in the country. The skill development eco system includes the Apprentices Act, 1961, a formal way of skills acquisition. It also includes, The National Skill Policy, which lays down the policies and procedures for skill enhancement and the National Skills Qualification Framework (NSQF). The Apprentice Act, 1961 ensures that there is participation from the Industry in the skill development of the students undergoing a formal technical education. The Industry professionals are well equipped to train the students on skill development. The Act aims at making it mandatory for establishments in the private and the public sector to train the students. The Industry has to provide on the job training to the students hence giving them a real world exposure to skills and processes and making them employable in the labour market. The National Policy on Skill Development was framed in 2009 with an aim to strengthen the skill development initiatives of the country. It is a Public Private Partnership model which falls under the Ministry of Skill Development and Entrepreneurship. It was established in order to promote skill development by creating large and exceptional quality vocational institution with the appropriate training infrastructure. India has a lot of aspirants but it doesn't have the required infrastructure to meet the requirements of vocational education and training and hence the government involved more of such partnership to ensure the model is successful in imparting the vocational training.

The National Skills Qualifications Framework (NSQF) was enacted on 27th December 2013. The framework in built on the latest concept of competencies which analyses the knowledge, skills and aptitude needed at each qualification. The levels are graded from one to ten and are defined in terms of learning outcomes for each level. It is regardless of whether the skills are possessed through formal, informal and non-formal learning. The framework is based on competency modelling, which is considered to be highly effective method of mapping the skills needed for a particular role.

Key Bodies	Enablers	Implementing Bodies	Beneficiaries
• Ministry of Skill Development & Entrepreneurship • MHRD • Ministry of Rural Development (MoRD) • Other Central Ministries	• State Skill Development Mission (SSDM) • NSDC • NSDA • SSCs • NCVT • SCVT • Labour Laws • Minimum Wages Act • Financial Institutions • Apprenticeships Act	• ITIs • Training Providers • Captive Training by Employers • Schools • Universities • Assessment Companies	• Marginalized societies • Unemployed youth • Low income Group • School & College Students

Figure 4. Skill Development Eco-system in India.

3.2 Skill Development Model in India

India has a large, diverse and highly complex model of skill development. India has a huge population which is completely heterogeneous in nature. The skill enlargement in India is classified into two categories. They are Skill Education and Skill based Vocational Training. Figure 1 explains the varied structure of Skill Development in India. The Ministry of Human Resource Development governs the Educational and Vocational Training in India. It governs the elementary, secondary and higher education in the country. The Universities and Higher education centres focuses on the college education. The examples of it are disciplines like Arts, Commerce and Science etc3. The Technical education is provided through the engineering colleges and the polytechnic institutions. The functioning of both the education Universities and colleges is regulated by the University Grants Commission (UGC). They grant funds, ascertain and ensure common standards are established for teaching, learning and evaluation in the Universities. The technical institutes in India are regulated by the All India Council for Technical Education (AICTE).

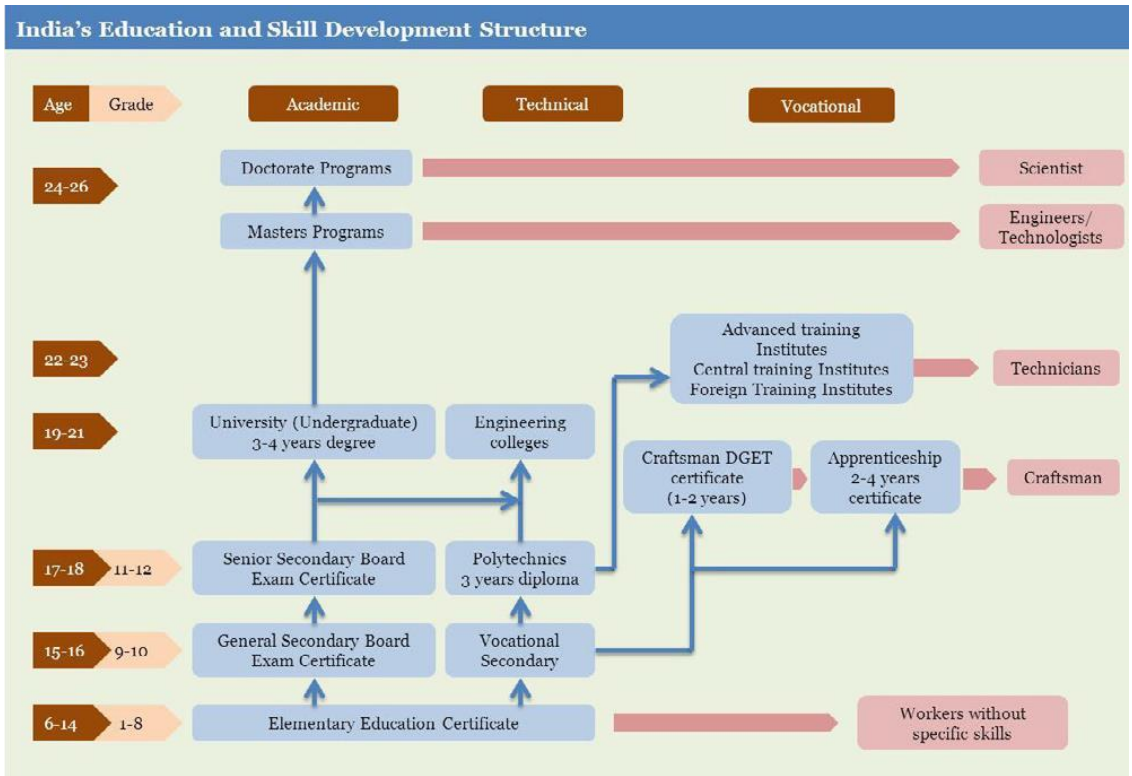

Figure 1. India's Educational and Skill Development Structure.

3.2.1 Public-Private Partnerships (PPP) model

India's Technical education has suffered tremendously because of the lack of infrastructure and the industry relevant curriculum program. With a view, to ensure that the country has more employable workforce, the government in the early 2000s, decided to launch the concept of publicprivate partnership. The government in the year 2005 – 06 decided to upgrade 100 ITIs with the help of the internal resources available. The World Bank was also roped in to upgrade additional 400 ITIs. The remaining ITIs werefocused to be developed through the PPP model. The Skill Development Initiative (SDI) under the Ministry of Skill Development and Entrepreneurship focused on the increasing the number of Public Private Partnerships. The Scheme is a 5 years project scheme aiming at training of one million persons. The scheme aims at providing people with the skills to perform the job effectively. It not only focused on the existing employees and students, but also focused on providing skills to school leavers and young graduates. The PPP model looked promising by generating a pool of skilled workforce thus reducing the supply and demand gap. It aims to design and develop syllabi for various levels and trades, development of relevant and interactive instructional material, training the trainers, the staff and faculty and ensuring a collaborative environment for the training.

3.3 China's Technical and Vocational Education and Training System (TVET)

China has been a country which has a reasonably good number of trained manpower. The TVET of China is a very broad and effective method of providing technical and vocational training to the people. The TVET of China is classified into two institutional setting. One of it focuses on education in schools while the other aims at providing vocational training. The school education

falls under the Ministry of Education (MOE) and whereas the vocational training falls under the purview of Ministry of Human Resources and Social Security (MOHRSS). The curriculum of vocational training of the school is designed in line with the theoretical concepts and knowledge of the different theoretical frameworks for a particular trade. The other section that falls under the MOHRSS focuses on post-school and pre-employment training of people. Its major emphasis is on practical and experiential learning through workplace training initiatives and also training and re-training of school dropouts and unemployed people. The vocational education forms an integral part of the educational programs of China which mandates through Education Law 1986 nine year of compulsory education including three year of vocational training. The institutional setting of vocational education broadly provides for pre-employment, post-school, and on-the-job-practical training besides training for school drop outs and a massive scale of vocational training for different levels of employees through Technical/Skilled Worker Schools. Thus, even senior secondary vocational school students also train themselves on vocational training through the three year participation in the vocational scheme education (Refer Figure 2). The Industry input is ensured through the participation in the entire TVET system. China being known for its manufacturing excellence in the world has to have a skilled workforce readily available. In order to meet the increasing demand for skilled workforce in the country, they have a robust skill development model that has a support from the government too. China is governed by the Vocational Education Law of 1996 which formulates the legal structure for the effective and proper functioning of the technical education and training system in the country. It explains the functions and responsibilities of the Ministry of Human Resources and Social Security and Ministry of Education in the vocational training. The law also discusses the roles and responsibilities of the local government, industry/private participation and the vocational training institutes in skill development in the country. It reflects that the country is highly focused on skill development and makes it compulsory from the school level itself. The implementation of the law is dealt with utmost dedication so as to ensure the implementation of skill development in the country.In China, the enterprises also support the skill developmentto a great extent. The occupational standards areclearly mentioned and there is a strong integration withthe education and economy. The Law makes it obligatoryfor the industries to provide for compulsory skill training and employment. China ensures that there is optimum participation from the Industry in vocational education and training. The Vocational Education Law, 1996 ensured that it happens. Below are the Articles from the law which reflects the Country's focus on skill development through the Industry participation.

"Article 20: Enterprises shall, in accordance with their actual situation, provide vocational education in a planned way for their staff, workers and persons to be employed. Enterprises may jointly run or run on their own vocational schools and vocational training institutions; they may also entrust vocational schools or vocational training institutions with the vocational education of their staff, workers and persons to be employed by them.

Article 29: If any enterprise fails to conduct vocational education in accordance with Article 20 of this Law, the local people's government at the county level or above shall order it to make correction; if the enterprise refuses to make corrections, the vocational educational funds that the enterprise should bear may be collected, and such funds shall be used for vocational education in the locality."

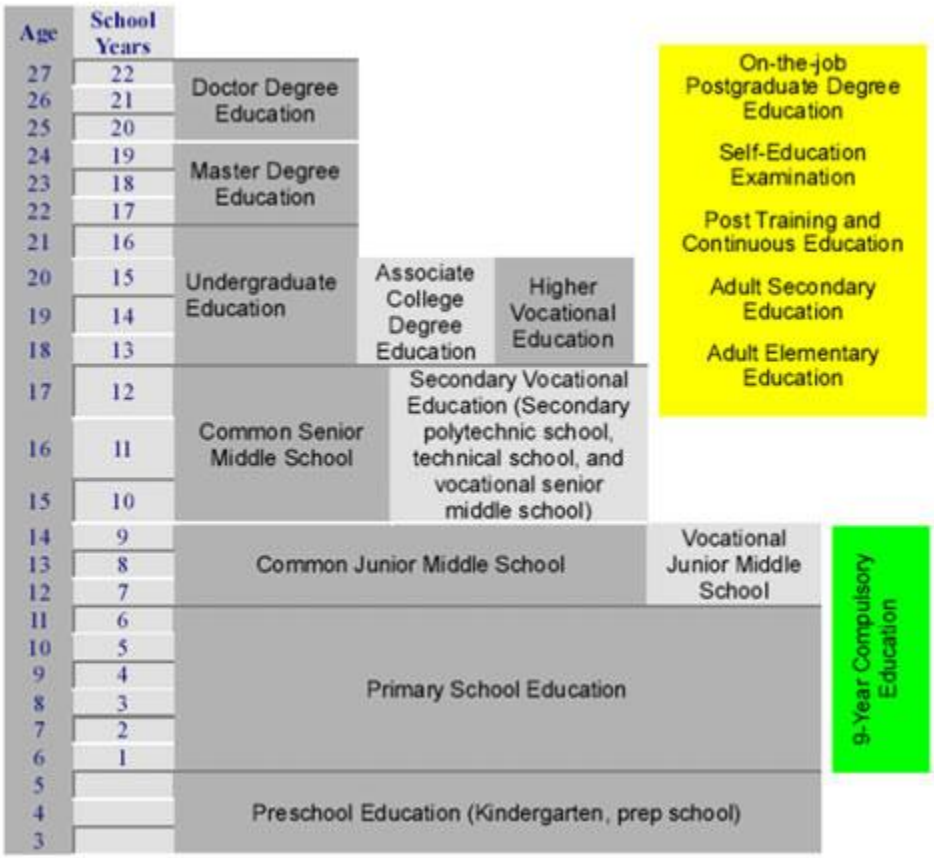

Figure 2. China's Technical and Vocational Education and Training System (TVET).

3.4 Brazil Vocational Educational Training Model

The current structure of VET is divided into three different levels namely Continued Formation courses (FIC courses), Technical Courses and Technological courses.
FIC Courses Initial or Continued Formation courses (FIC courses) are the ones with the broadest targeted population. Anyone can enrol in this type of program. There are no requirements regarding educational degree or age. Their goal is to provide an initial qualification to those whose level of educational achievement is low or have no practical training or experience. Technical Courses provide professional training to students enrolled in secondary school and secondary school graduates. These courses operate in three modalities:
I. Integrated - Offered to students who want to attend simultaneously Vocational and General Education courses at the same institution. II. Concomitant - Offered to those students enrolled in a General Sequential - Offered only to those who completed secondary school. Technological courses are equivalent to tertiary level courses. These programs are only available to secondary school graduates and grant a diploma that is equivalent to a university degree. Therefore, as mentioned before, in order to enrol in a technological course, students are required to have completed high school, but not necessarily technical high school. Technological courses tend to last three years. Brazil is also focused on creating skills at the school level. They offer programme especially the Technical ones which can be offered to the students from the same institute. Due to which, the number of students enrolling for the program are high11. The

Vocational Training Program offered by them PRONATEC is focused to promote social and productive inclusion. It has a heavy social policy component, clearly stating as its goal "to promote training opportunities to teenagers, workers and the beneficiaries of the cash transfer programs."

3.5 Singapore Vocational and TechnicalEducation (VTE) model

Singapore lays a lot of importance to the skill development and it invests heavily in the Vocational training and Technical Education. The government supports the VTE model of the country. Singapore is a preferred destination in terms of the skilled workforce as compared to India. The model is similar to India and focuses on the robustnessin the technical training provided to the aspirants. Italso lays emphasis on industry relevant curriculum and ensures on making it a cost effective model so that more aspirants can opt for the technical education. There are various schemes like the traineeship, approved training centres and certified on-the-job training centres. The government also wanted to improve the visibility of such programs and hence participated in different advertising campaigns like "using the hand," "Top of the Trade" competitions telecasted on the television, and "Apprenticeship of the Year" award. The major advantage of the TVET model is the curriculum which involved industry professionals in the design and hence ensured that the relevant skills are transferred to workforce.The VTE has centres of excellence and it collaborates with other agencies that help in the exchange of training resources, expertise of members and technological initiatives focusing on skill development. The government through the VTE model funds the training of not only the school graduates but places equal importance on the drop outs so that the people continue to train themselves.

4. India's Current Skill Analysis

The current data suggest that only 2.3% of the workforce in India has undergone formal skill training as compared to 68% in the UK, 75% in Germany, 52% in USA, 80% in Japan and 96% in South Korea. The workforce in India has little or no job skills that make them largely unemployable. It is an alarming signal for India which has the youngest population in the world. There is a lot of scope for India to provide its workforce with appropriate skills. As per the 12th Plan document of the Planning Commission, India's labour population is not educated enough. The people who completed educational qualification up to secondary level are 85 percent of the labour workforce. Approximately 55 percent have completed education level up to the primary level and a small percentage of 2 percent have undergone a formal vocational training. Efforts are being made to ensure more students enrolments in the higher education and vocational training. There are initiatives like Make In India, Digital India and programs focusing on start-ups and funding programs laid on Skilled India. The current skill landscape of India is not very positive. According to the India Skills Report 2015, it was established that India lacks on the development of skills. Of all the students applying for roles in the labour market, a mere 1/3rd of the number had the appropriate skills to match the requirement of the employers. Though we have a sufficient manpower but all are not skilled enough to get a job. The fresh employments opportunities are getting created in the field of core engineering, retail, hospitality, ecommerce and banking but there is shortfall of trained people in the country to fill the positions (Refer Table 1). Looking at the labour market dynamics, the government has started initiatives to fight this major difficulty. In fact, the Government has given utmost priority to skill development and it will continue to be a vital matter for 10 years. The Skills Gap as per the Figure mentions the expected shortage in the industries in 2022. There will be a considerable growth in the

Infrastructure sector followed by the Auto & Auto Components. In order to focus on the Make in India campaign considerable efforts are needed to impart skills in the country.

5. Challenges

India is facing a lot of challenges keeping in view the current infrastructure and the policy framework. The
challenges faced in skill development have been discussed below:

Figure 3. Skill Gap 2022.

Table 1. Incremental Human Resource Requirements across Sectors by 2020
Source: Ministry of Skill Development and Entrepreneurship

Segment	Employment base in million		
	2013	2017	2022
Building, construction and real Estate	45.42	59.40	76.55
Automobile and auto component	10.98	12.18	14.88
Banking, Financial Services Insurance	2.55	3.20	4.21
Textile and Clothing	15.23	18.06	21.54
Pharmaceuticals	1.86	2.60	3.58
Electronics – IT hardware	4.33	6.24	8.94
Retail Sector	38.6	45.11	55.95
IT and ITES	2.96	3.86	5.24
Food Processing	1.75	2.65	4.40
Beauty and wellness	4.21	14.27	10.06
Electronic and IT Hardware	4.33	8.94	4.61
Transportation and Logistics	16.74	28.4	11.66
Healthcare	3.59	7.39	3.8
Handlooms and Handicrafts	11.65	17.79	6.14
Telecommunication	2.08	4.16	2.08
Pharma and Lifesciences	1.86	3.58	1.72
Education / Skill development	13.02	17.31	4.29
Leather and Leather goods	3.09	6.81	3.72
Security	7	11.83	4.83
Furniture and Furnishing	4.11	11,29	7.18
Tourism, Hospitality and Travel	6.96	13.44	6.48
Gems and Jewellery	4.64	8.23	3.59
Domestic Help	6	10.88	4.88

5.1 Insufficient Scale and Restricted Capability

The current infrastructure facility available in the educational institutions is inadequate considering the huge demand of labour. There aren't many trained and highly skilled trainers available. It reflects the inappropriate and insufficient infrastructure not only in big cities but also in small towns and villages. The faculty needs to be motivated and skilled to take up higher responsibilities. The training infrastructure too needs to be made adequate keeping in mind the number of aspirants to be skilled. Another crucial aspect in skill development is the 'Train the Trainers'. The knowledge and experience brought in by the faculty ensures that the student has picked up the appropriate skills and has had a phenomenal learning experience. The trainer should be able to assess the needs of the students considering the labour market situation. It also requires that there is an ideal mix of both theoretical as well as practical learning experience. Hence, training of the trainer has become a major challenge.

5.2 Mobilization

The enrolment of the students for vocational education and training has become an extremely challenging task. The outlook of the people associated with the skill development is still very traditional. The students would move on to managerial roles as the technical trades positions are

associated with low salaries and lack of recognition. There are students who are not able to pay for the fee and may not be aware of the schemes run by the government which also leads to a low mobility towards such programs. Skilling has always been branded as a blue collar job, which is further associated with low pay scales, limited growth and less challenging roles. Like Singapore, our government needs to focus a lot on the branding strategies for skill development which may ensure a high mobility towards such programs.

5.3 Employer's buy-in

The industry doesn't distinguish whether the person has acquired the skills through on the job training or has gone through a formal training. Many companies make their own skill centres through which they develop the people. Though the Skill Development also focuses on the Public Private Partnership Model but it needs a lot of effort from both the players in development of skills.

5.4 Scalability

Any model to be successful needs a lot of support fromstakeholders too. Since there is very limited buy-in from the corporate sector the progress of such initiatives is reduced. Skill development had not been a priority of the government earlier and hence this area has always been ignored. Since the model requires high capital investments, the people are not very willing to support such a model. The challenges associated with unavailability of infrastructure, slow processing of bank loans seldom demoralizes the budding entrepreneurs to come up with their. In rural region, it becomes more challenging because the people aren't aware of the credit facility and the different schemes supported by the government and any other financial bodies. The urban areas face issues like high operational cost which discourages such entrepreneurs to come forward.

5.5 Skills Mismatch

There is a lot of issue related to the skills needed by the industry and the skills imparted through the educational and training institute. There is a lack of industry-faculty interaction because of which the skill set doesn't suit the employer. Though the people may be skilled but they are not employable. It becomes extremely important that the industry professionals are also included during the design of the curriculum.

5.6 No focus on Non-Technical Skills

The Vocational Training Centres in India is focusing on developing technical skills only whereas the employers feel the need of having Behavioural Skills also. According to the India Hiring Intent Survey, the employers also focus on Skills like Domain Expertise, Communication, a culturally fit person, values on Honesty and Integrity, Adaptability, focused on Result, Interpersonal skill and Learning attitude. These skills are not covered as an integral part of the skill development. This is a major challenge as it results to a lot of unemployed skilled workforce.

6. Conclusion

Skill development is the most important aspect for the development of the country. It needs a coordinated effortfrom all the agencies, stakeholders and the students to make it a successful program. The policies, if are able to reach a larger audience will make a difference in the employment scenario of the country. India has a 'demographic dividend' and it has to work toward making it useful for the country. It will not only add value to the economy of the country but will be supporting the 'Make in India' campaign by providing the skilled workforce in the

country. Like China, our vocational training programs should be included at the school level itself. The Public Private Partnership plays a key and an important role in the development and enhancement of skills. NSDC has made some progress in improving the training infrastructure in the private sector by having more and more Public Private Partnership. There has been a growth in such partnership over a few years. Such partnerships are also being encouraged in rural areas which consist of a considerable high number of aspirants. It becomes extremely important to strengthen the tie-ups with the training institutes to ensure that the quality is maintained and the model is sustainable too. Since, there will be a huge demand in the Retail and the Hospitality Sector so the government needs to focus on the non-technical skills too. The Skilled India initiatives need to focus and develop more entrepreneurship skills amongst the workforce in order to ensure more job generation in the country. The Start-up India and Stand up India schemes need to be advertised well in the market in order to have more people taking advantage of such a model. The NSDC should also focus on the unorganized sector in order to make the Skill India campaign a successful model. Hence, the Make in India campaign will be successful from skill point of view and India will achieve its mission of "Koushal Bharat, Kushal Bharat".

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