

A Major Project Report
on
Industry-Institute Interaction
in
Skill Development

Submitted for the award of degree of
Master in Business Administration (Executive)

by
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May 2015

CERTIFICATE

This is to certify that the project entitled “Institute-Industry Interaction in Skill Development” has been successfully completed by Swati Sethi–2K13/MBA/524

This is further certified that this project work is a record of bonafide work done by her under my guidance. The matter embodied in this report has not been submitted for the award of any degree.

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ACKNOWLEDGEMENT

I wish to extend my gratitude to Dr. P. K. Suri, Professor/ Head, DSM, for giving me all the guidance and valuable insights to take up this Semester Project. I also take this opportunity to convey sincere thanks to Associate Professor Dr. Rajan Yadav and all the faculty members for directing and advising the group during the course.

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EXECUTIVE SUMMARY

The Government of India has taken initiative to have National Manufacturing Policy, first of its kind, which addresses areas of regulation, infrastructure, skill development, technology, and other pertinent factors related to the growth of the sector. India faces the problem of low productivity of the manufacturing sector due to lack of skill training among the shop floor workers. The Industrial Training Institutes (ITIs) affiliated to National Council for Vocational Training (NCVT) are the backbone of the system for producing trained manpower to meet the skill needs of industry in India, in particular manufacturing industry. One of the policy initiatives under 'Make in India' campaign is to create 'multiple tier structure' for skill development viz. Skill-building among large numbers of less educated workforce, setting up ITIs in PPP mode for imparting relevant skill training, establishment of polytechnics for specialised skill development and establishing centres for training of instructors.

While above policy initiative points towards dependability on skill training in ITIs, the major issues that keep emerging about ITI system are - non-availability of trained faculty, improving image and social acceptability of ITIs, need for larger collaboration with industry for starting industry relevant courses, attachment of ITI trainees with industry, administrative and financial autonomy to the Institute Management Committee (IMCs) etc.. Most of the ITIs have been upgraded recently under various centrally sponsored schemes and in all these scheme, there has been one of the common policy initiative to in-build industry participation in the ITIs by having an Institute Management Committee (IMC). The IMCs are constituted by ITIs with about 50% participation of industry. Recently, as a directive from the new Government, a new scheme has been taken up for developing at least one existing Government ITI as 'Model ITI' in each state. The 'Model ITI' will perform the best in training by engagement with local industries, optimum utilization of capacity, training of unorganized sector workers will be the role model for other ITIs. As a prerequisite, the existing Government ITIs are to be converted to IMC Society, before it gets central funding for upgradation. The present focus of the Government on having IMCs to improve the overall industry-ITI linkages has motivated the author to take

opinion of the stakeholders on its effectiveness in fulfilling its objective. A structured survey has been conducted with the stakeholders to get information on effectiveness of various roles listed for IMCs as a partner in functioning of ITIs in collaboration with industry.

A qualitative analysis has also been done on vocational training scenario in few other countries, with special focus on China. The People's Republic of China has progressed at a phenomenal pace in the past decade and had a consistent high rate of growth as reflected in the country's Gross Domestic Product (GDP) figures. The analysis is done to find out how the country has progressed on imparting skill training to a larger workforce than India. A review has also been done in the context for other few developed countries who are members of Organisation for Economic Cooperation and Development (OECD) group viz. Switzerland, United Kingdom, Sweden etc. to have an understanding of how the training institutes in developed countries continue to have industry interaction.

The study on role of IMCs in ITIs revealed that IMCs are effective and need to continue to be a part of ITI system in India with scope of further intervention for its effectiveness. However, it also emerged that the ITIs should also continue to adopt other models viz. having MOU with industry, strengthening its Training, Counselling and Placement Cell (TCPC) etc. to improve its efficiency.

The Vocational Training System in China has many similarities with Indian scenario but the political set up in the country makes the rules more stringent and enforceable. The culture in China may have also contributed to the fast industrial development in the country even with many issues on availability of skilled manpower. The country is also exploring the possibilities to adapt and then adopt the models of Technical Vocational Education and Training (TVET) from the developed countries viz. Germany, Australia and Singapore. The authorities in China feel that Vocational Training in Singapore could provide more insight in bringing improvement as the country has similarity in culture including language. The developed countries have moved towards offering Higher Vocational Training at University level and also trying to evolve various models to keep industry on board. Similar concept with appropriate strength may also be introduced in Indian skill development especially in the context of

efforts being made on compliance with National Skill Qualification Framework, with one of the focus area on vertical mobility.

In case of member countries of Organisation of Economic Cooperation and Development (OECD) that have high per capita Gross Domestic Product (GDP), there is a growing emphasis on having post-secondary vocational courses. The focus in these countries is also to develop vocational training programs after schools i.e. Higher Vocational Education (HVE) programs. These programs are developed to integrate work based learning and foundation skills of literacy and numeracy. The qualification framework is prepared with involvement of employers.

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1 Introduction

1.1 Industry Profile

There is a need to improve the global competitiveness of the Indian manufacturing sector. This would favour country's long term-growth. The target is to increase manufacturing sector growth to about 14% per annum. The existing share of manufacturing sector to the Gross Domestic Product of India is 16%. The target is to achieve 25% by 2022. It is anticipated that this would result in creation of 100 million additional jobs in the sector by 2022. While targeting this, the challenge is to increase domestic value addition and introduce latest technologies in manufacturing. This will enhance global competitiveness of India in the manufacturing sector. The Government has taken initiative to have National Manufacturing Policy, first of its kind, which addresses areas of regulation, infrastructure, skill development, technology, and other pertinent factors related to manufacturing sector due to lack of skill training among the shop floor workers.

INDUSTRIAL TRAINING & SKILL UPGRADATION MEASURES:

The Industrial Training Institutes (ITIs) affiliated to National Council for Vocational Training (NCVT) ¹ are the backbone of the system for producing trained manpower to meet the skill needs of our industry, in particular manufacturing industry. Recently, the system has been brought under Ministry of Skill Development & Entrepreneurship, the newly created Ministry to oversee the policies and initiatives on skill development in the country. One of the policy initiatives under 'Make in India' campaign is to create 'multiple tier structure' for skill development viz. Skill-building among large numbers of less educated workforce, setting up ITIs in PPP mode for imparting relevant skill training, establishment of polytechnics for specialised skill development and establishing centers for training of instructors.

¹ NCVT – A tripartite body of central government, state government & trade unions - chaired by Minister of Skill Development & Entrepreneurship

1.2 Organisational Profile

Presently about 11,800 Industrial Training Institutions (ITIs) are providing vocational training to more than 16 lakh young people. The details about the organisation and its various schemes are given in Annexure I. DGE&T has taken several initiatives to improve the quality of training. In order to improve quality of training, following schemes were operationalized to modernize the training infrastructure and introduce new courses in ITIs throughout the country:

- “Upgradation of 100 Government ITIs into Centres of Excellence (CoE) through domestic funding”-
- “Upgradation of 400 Government ITIs through World Bank assistance”
- “Upgradation of 1396 Government ITIs through Public Private Partnership (PPP)”

The Government ITIs that are supported through these schemes are mostly large ITIs with trades units in the range of 30 and more and offer several industry-relevant courses. All the above schemes have one of the common policy initiatives to in-build industry participation in the ITI by having an Institute Management Committee (IMC) with about 50% participation of industry. The constitution of IMC and its role is given in Annexure IV. The curricula have been revamped with the involvement of industry. The same is implemented from August, 2014 session. Other initiatives included capacity building of the Principals and the instructors of ITIs, the system of re-affiliation after every five years and introduction of e-governance. The Ministry has also operationalised schemes to recognize the prior learning of traditional craftsmen. A brainstorming session was held involving Industry – CII in August 2014 wherein major issues emerged. These included non-availability of trained faculty, improving image and social acceptability of ITIs, need for larger collaboration with industry for starting industry relevant courses, attachment of ITI trainees with industry, administrative and financial autonomy to the Institute Management Committee(IMCs).

Recently, a new scheme has been taken up for developing at least one existing Government ITI as ‘model ITI’ in each state. These model ITIs would be demand centre for local industries for skill training and retraining. The ITI is to

be upgraded to further improve on its performance and gain expertise in collaboration with industry partners. The 'Model ITI' will showcase the best performance in training. This in turn, would lead to better engagement with local industries, optimum utilization of capacity by running in shifts for the training of unorganized sector workers and they would be attracted to have their existing workforce also trained in these Model ITIs. The identified ITI(s) would be situated in a prominent industrial cluster in the State and will get funds for taking up several initiatives and reforms to achieve broad objective. This should also raise 'dignity' of ITI education. These Model ITIs will establish links with the Industrial clusters in their vicinity to enable it to function as a solution provider to the cluster group. A copy of the guidelines is placed at Annexure VI.

1.3 Objective of the study

The objectives of this study are :

- I. to evaluate the effectiveness of partnership of ITIs with the IMCs that were put in place in India to improve the overall industry-ITI linkages.
- II. qualitative analysis to analyse the scenario of vocational training in a few other countries with special focus on China and selected developed countries from Organisation for Economic Cooperation and Development (OECD) group viz. Switzerland, United Kingdom, Sweden etc. for better understanding of how the industry interacts with the training institutes.

2 Literature Review

2.1 Vocational Training in China

Broadly there is similarity in the demography of India and China. The People's Republic of China has progressed at a phenomenal pace in the past decade and had a consistent high rate of growth as reflected in the Gross Domestic Product (GDP) figures. The analysis is done to know how the country has progressed on imparting skill training to a larger workforce than India. The study also tried to get insight into contribution of industry in China that has thrived on mostly the concept of 'Economies of scales'. The Table 1 compares demographic, Labour Market and academic data of India and China.

Table 2.1: At a glance - comparison between India and China

Source: Created by the author and information retrieved from various sources mentioned at References

Factors	India	Remarks	People's Republic of China (based on 2010 census)	Remarks
Population	1.27 billion (2014)		1.355 billion	Relatively small youth division due to china's one child policy (Figure 2.1)
Population density	382 per sq km		277 per sq m [China proper] 137 per sq m [Avg] (same as Switzerland)	Most of the population i.e. around 1.3 billion live near eastern part of China in the major cities.
Population Growth Rate	1.2%		0.47% (159 th in the world)	
Labour Force (individuals aged between 15 and 59)	740 million	65% of population is below 35 years	937.29 million	
Active Labour Force	472.9 million (Employed in 2011-12)		798.5 million	
Investment in Education	3.8% of GDP (2012)		4 % of GDP	
Enrolment (I to X)	225 million		9.39 million	Entrance Exam for National Higher Education Senior School Vocational School graduates
Enrolment in Senior Secondary School	17.66 million (2011)			
ITI/Apprenticeship training/ Polytechnics	4.5 million		6 million annually	
Unemployment*	4.9%		4.10% (Feb. 2015)	

*Unemployment rate is defined as "the number of people actively looking for a job as a percentage of the labour force".

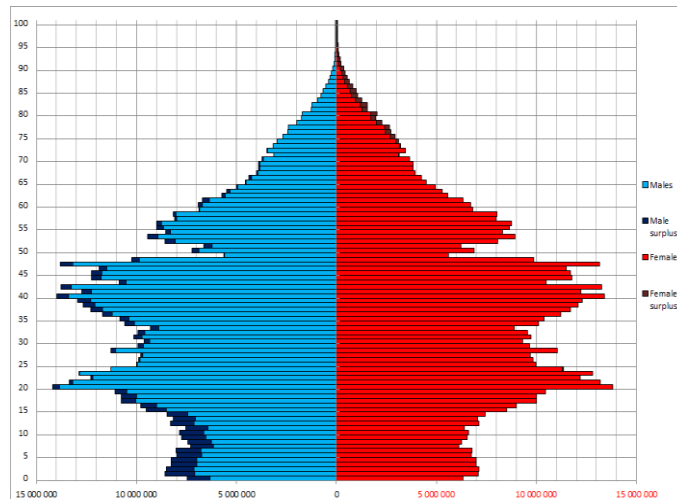


Figure 2.1 . Population of China - demographic pyramid based on 6th national census count (2010) Source : Retrieved from http://en.wikipedia.org/wiki/Demographics_of_China

There is relatively small youth division due to china's one child policy Above figure 2.1 shows that bottom part of the China's population pyramid is shrinking. Most of the China's population i.e. around 1.3 billion live in east of China in major cities. Financing of Technical Vocational Education & Training (TVET) is primarily responsibility of local government. There are Central finance schemes that are mainly through excellence and some sort of competition. The qualification requirement of TVET teachers is to have Academic and Skills certificate

The Education System in China provides vertical mobility to the students having linkages from primary education till doctorate level. As per Education Policy, the Vocational Education also include in curricula education on ideology, politics, and vocational ethics to raise the quality of education Institutional Reforms 2005 involved collaboration with industry, management and teacher capacity building, review of training programs, development of competency based standards and curriculum, review of teacher and teaching evaluation, and build capacity for schools to institutionalise graduate tracer studies and employer satisfaction surveys.

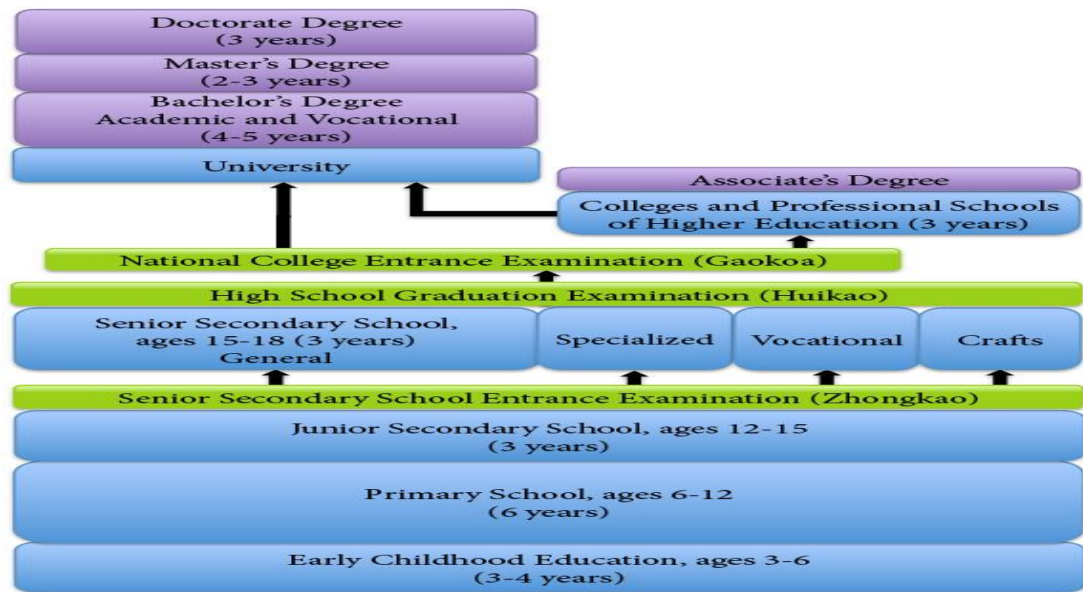


Figure 2.2. Education System in China

Source: Information retrieved from <http://www.ncee.org/wp-content/uploads/2011/11/Shanghai-System2.jpg>

2.1.1 Strengths

1. As a matter of policy about half the students enters upper secondary vocational schools i.e about 20 million students are enrolled in vocational schools.
2. The upper secondary vocational education cover general academic skills, and workplace training. It results in close relationships with employers.
3. To cover up fee requirement of upper secondary education, there are number of measures introduced by the government - at national and provincial level viz. at national level there is a scheme to pay “Chinese Yuan 1500 per year” subsidy to students in VET schools. From 2009, an initiative has been taken by the government not to charge tuition fee from upper secondary vocational school students.
4. With the objective to keep teachers in vocational schools to get exposure to modern industry, they are required to spend one month in a year in industry. As an alternative, he may opt to do it in two years by having two months industry exposure.
5. In addition, many schools also employ part-time teachers who have work experience in industry.

2.1.2 Challenges

1. Training in industry is actively encouraged by government. The policy of the Government is that each student should engage as trainees for one year at workplace during their upper secondary programme. But willingness of employers varies.
2. There are defined quality standards for workplace training. Regional, sectorial or national bodies also engage trainees and link employers to the Vocational Education and Training system.
3. Broadly the resources of any school depend on the resources of the province and county / district of which they are part. There has been rapid economic development in the country but this growth has been uneven with few rural areas and provinces which remain poor. Hence schools located in these areas are also under-resourced.
4. There are defined minimum standards for vocational schools in terms of equipment. There are also national guidelines but the same are only implemented if resources are available.
5. One of the main standards is that of 'key national schools', but this requires resources by design which are not available to most of the schools.
6. Planning to meet labour market needs is insufficient.
7. Schools are managed by various government bodies like in provinces by education commission, agriculture bureau, district / county level etc. This has resulted in co-ordination problem.
8. Data is not available on labour market demands.

2.1.3 Public-Private Partnership in China

1. To encourage vocational training, government has made it mandatory to for industries to utilize 1.5 per cent of their payroll for either giving "in-service training" or otherwise the funds get contributed to the government and are used for adult training. However, in absence of any legal backing, contribution of industries is not there for this training fund.
2. There are around 3000 counties in the country under 'provincial' level'. Autonomy given to counties enable local government to support to enterprises and this lead to industry getting involved in skill training.

3. The industry need to partner with vocational training system by imparting pre-employment training. However, in China there is imbalance in supply and demand and the employers are able to get labour from the market without depending on the vocational training system.
4. The industry is, however, encouraged to participate in vocational education and training. One of the method adopted is to incentivise industry for example subsidising cost of land, and giving preference to award government projects.

Case Study: Skills Training in the Automotive Industry in China

As per study conducted for “Department of Automotive Engineering, Sichuan Vocational and Technical College of Communications (SVTCC)”, there was 100% employment for the students who graduated from this Department between 2007 and 2010. The reason was collaboration between college and local car manufacturers and dealers in imparting training to automotive students. SVTCC has been accredited as a ‘model’ for technical and vocational higher education by the State Ministry of Education in China. The college is among 100 top vocational colleges in China.

The Chinese Vocational Education and Training has following concerns:

- To improve the quality by having relevance of the curriculum and training of teachers and trainers
- Status of VET viewed by parents as inferior to academic education. They are interested in making investment on education on their single child
- More effective link between general education and vocational education
- Lack of reliable information about VET
- In poor rural area children enter workforce without attending secondary school as there it is expensive to attend secondary school with opportunity cost (about 80% of students in poor rural area enter work force after High school and don't attend secondary school)
- Presence of infrastructure facilities in the school

- Industry is not taking interest in vocational training as labour workforce is otherwise available in market. Possession of Vocational Certificate is not given its due weightage by the industry.

2.2 Skills Beyond School – Vocational Training in (OECD) countries

In Europe, countries viz. Austria and **Germany** (Universities of applied science “Fachhochschulen”), University Colleges in Denmark and Sweden, “Polytechnics’ in Finland and “Hogeschole” in the Netherlands have successfully established new types of higher education institutions with the mission of providing vocational bachelor degrees in technical and professional. Such institutions have often been extremely successful and have grown rapidly.

Switzerland: There are professional organisations with members from trade and employer organisations and trade unions. These organisations are involved in VET policy making which is required by law. These organisations also lead in the content and examination process for “secondary” and “post-secondary” programmes. These organisations are also involved in drafting the core curricula for “professional” colleges. These curricula need approval by the Swiss federal authorities. National examinations for diploma qualification are also led by professional organisations. Hence diplomas are relevant to the needs of the profession and the labour market gets ensured through this process. Professional organisations draft examination rules, which cover admission requirements, occupational profiles, the knowledge and skills to be acquired, qualification procedures and the “legally protected” title. They also conduct examinations. The role of Swiss authorities is to approve examination rules, supervise examinations and issue diplomas.

United Kingdom: In April 2008, ‘UK Commission for Employment and Skills (UKCES)’ has been established. Its objective is to involve employer in the Vocational Education and Training (VET) system. It would also facilitate in promoting investment in skills which would be a driving force for growth. UKCES has commissioners from large and small employers, trade unions, representatives of further and higher education institutions. Representation is also from Northern Ireland, Scotland and Wales. The objective of changed employment and skills policies are:

- labour market intelligence;
- greater employer investment in skills
- Impact employer behaviour to help drive jobs
- internationally competitive skills base

Sweden: The country has started “Higher Vocational Education (HVE)” in 2001 which was previously called advanced vocational education and training. The enrolment in professional bachelors and masters programmes increased rapidly. Under HVE, programs duration range from six months and two years of full-time study. 70% of these programmes last for two years. About 90% of graduates have reported to get employment within a year. These courses are supported by all stakeholders i.e. students, employers, and interest among bodies wishing to run courses. To start HVE, the institution should comply with established requirements. In 2011, about half of the established HVE are private while rest belonged to local and regional authorities. The following are the features of HVE programmes - publicly funded and no tuition fees.

1. 6 months workplace training is obligatory in two-year program
2. Results in partnership with employers into the design of the system,
3. Public funding only if employer willing to offer the workplace training is identified.
4. Every institution has a steering group for each program including employers
5. Employers provide training to students and also advise on provision and programme content.
6. As another precondition for launching a programme, an education provider has to also certify labour market demand for the skills
7. There is a National Agency for Higher VET who is responsible for the sector and is advised by the social partners on the future demand for skills and on how this might be met.

Table 2.2 Comparison on demography vis-à-vis GDP growth for few countries of interest

	India	USA	China	Germany	Malaysia	Australia
Population (2014/2015)	1270 million	320 million	1369 million	81 million	31 million	23 million
Labour Force	487 million	155 million	798 million	44 million	13 million	23 million
Formal workers	28 million	-	-	44 million	12 million	12 million
GDP (2014)	2,049 b US\$	17,418 b US\$	10,380 b US\$	3,859 b US\$	326 b US\$	1444 b US\$
GDP PPP (2014)	7,375 b US\$	17,418 b US\$	17,617 b US\$	3,721 b US\$	746 b US\$	1095 b US\$
GDP per capita (2014)	\$ 1,626	\$ 54,597	\$ 7,589	\$ 47,589	\$ 10,803	\$ 61,219
GDP PPP per capita	\$ 5,855	\$ 54,597	\$ 12,880	\$ 45,888	\$ 24,654	\$ 46,433

Source: Table created by the author and information retrieved from various sources mentioned in References.

2.3 Scenario in India

1. Some facts: Total population is 1.2 billion, labour workforce is about 450 million and out of this only 2% have undergone formal skill training.
2. India is young country with about 65% of the population below 35 years. Target is to become sourcing hub for skilled Workforce for the World.
3. About 50% of the total workforce is engaged in the agriculture sector whereas agriculture only accounts for about 15% of India's GDP.
4. "National Skills Policy" formulated in 2009 which has set a target of imparting skills training to 500 million, by 2022.
5. As per recommendation of policy, the 'Prime Minister's National Council on Skill Development' set up as an apex institution for policy direction and review.
6. There are about 17 ministries that are implementing various schemes on skill development. The details are given at Annexure II.

7. To bring all the initiatives on skill development under one authority, a separate Ministry has been set up on Skill Development and Entrepreneurship.
8. Some of the initiatives taken by private sector viz. Maruti Udyog, ITC, L&T, Bharti Group, Hero, ILF&S Ltd. etc on its own, in collaboration with the government and international entities are listed as Annexure III.
9. The Sector Skills Councils (SSCs) have been set up in various sectors viz. automobiles, food processing, IT, retail etc. The members of each council are the stakeholders from academics, industry, labour and the government. This concept is conceptualised from UK vocational training system.
10. In existing Education System in India, there are rare possibilities for vertical mobility for ITI pass-outs.
11. There are high dropouts in the ITIs as it is not seen as dignified and has little opportunities to enhance qualification. This is clearly visible from the following schematic on education system :

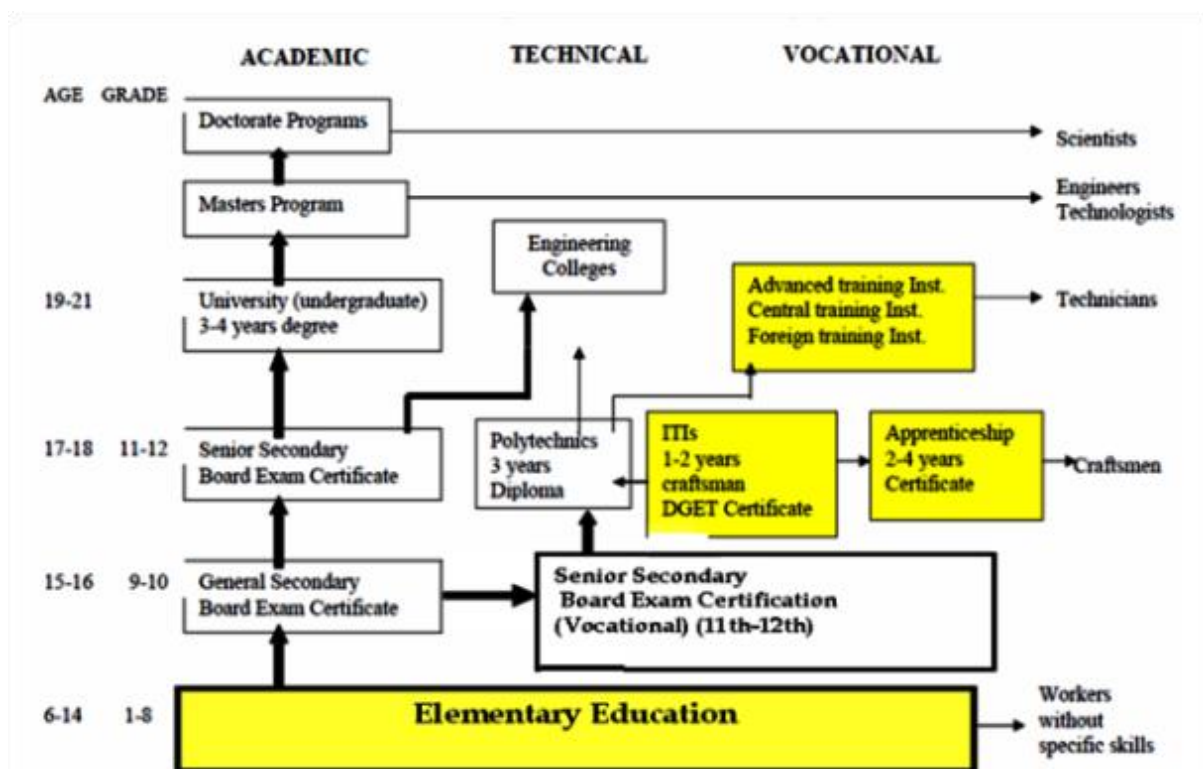


Figure 2.3 Education System in India Source: Need for Vocationalisation of Education in India by Ms. Swati Mujumdar, Symbiosis Center for Distance Learning Retrieved from <http://www.indiaeducationreview.com/article/need-vocationalisation-education-india>.2 May 2015

2.4 Informal Sector

By definition “The informal sector, informal economy, or grey economy is the part of an economy that is neither taxed, nor monitored by any form of government”. Since the authentic information is not available for informal sector it is not included in the Gross Domestic Product (GDP) of a country. Some rough estimate is tabulated below.

Table 2.3 Informal Economy in the World Source : Table created by the author and information retrieved from various sources mentioned in References

S. No.	Countries / Continents	Estimates for informal economy
1	North Africa (non-agricultural)	48%
2	Latin America	51%
3	Asia	65%
4	Sub-Saharan Africa	72%
5	Developed countries	15%
6	India (Year 2000)	US \$ 104 billion
7	China (Year 2000)	US \$ 139 billion

3 Research Methodology

DGE&T has taken various initiatives in the past few years by taking up various centrally sponsored schemes under which Government ITIs have been upgraded. While implementing these schemes, the industry intervention has been ensured in the form of Institute Management Committee (IMC) constitute by the ITIs. In future schemes also, DGE&T continues to adopt IMC models. In the existing scheme on Model ITIs, IMC is to be constituted by the ITI in Society mode. Hence, this project aims to evaluate functioning of IMCs by conducting a survey with respondents from State Government, ITI and also from IMCs.

For this survey, a Questionnaire has been designed in consultation with officials working on the Centrally Sponsored Schemes (CSS) on Upgradation of Government ITIs. The sample format is placed at Annexure V.

4 Data Analysis

4.1 Data Collection

This survey questionnaire was circulated to all the States and by few States to the Government ITIs / IMCs. There were 45 responses representing State Government, IMCs, and Government ITIs. The information received from various States and hence data collected on random basis.

In all, 72 responses were received from various States viz. “Bihar, Karnataka, Madhya Pradesh, Himachal Pradesh, Tamil Nadu, Manipur and Uttar Pradesh”. These responses are from State Directorates, Government ITIs and few responses from IMCs. However, for analysis, 48 responses were taken into consideration, which were received at the time when the analysis was undertaken i.e. till 9 May 2015.

4.2 Findings

The responses received from the respondents were converted to rankings i.e. high score represented by higher ranks and so on. The analysis has been carried out on ranked data rather than using actual data. The responses from State Directorates, ITIs and IMCs alongwith respective rankings have been tabulated and the same are placed at Annexure VII, VIII, IX and X

Few responses with conclusive opinion are presented below:

1. Having IMC in the ITIs

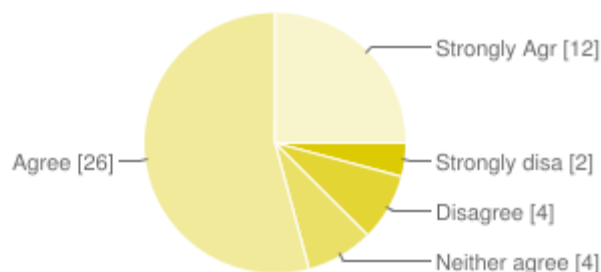


Figure 4.1

2. IMCs are effective, if Chairman plays an active role.

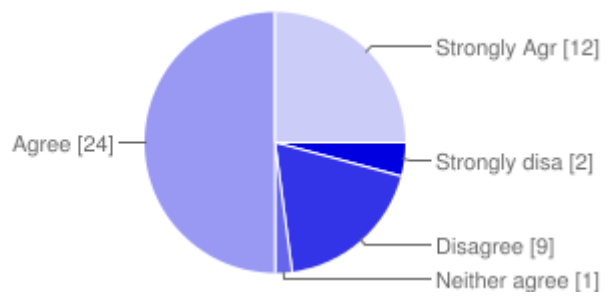


Figure 4.2

3. IMCs suggesting trades for training in ITIs.

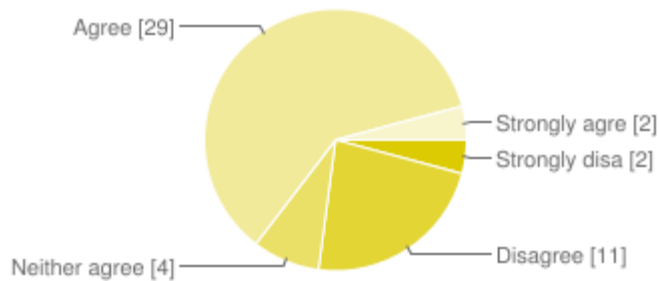


Figure 4.3

4. Need for sensitisation Program for IMCs by State and Central Government

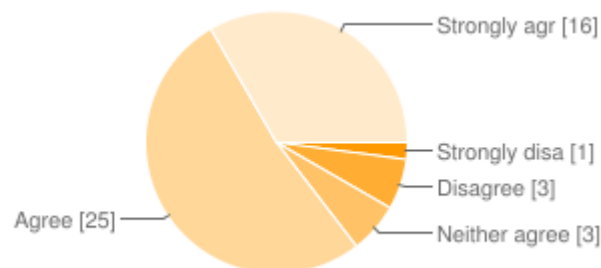


Figure 4.4

5. IMC Chairman from the industry related to the trades covered in the ITI [Following condition improves the contribution of IMC in ITI, assuming similar conditions viz. size of ITI, trades covered etc.]

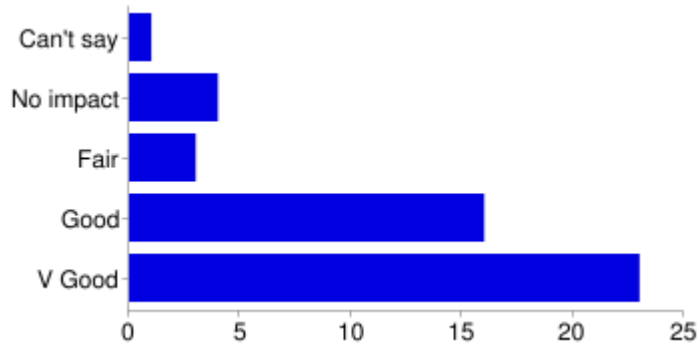


Figure 4.5

6. Ratings given by respondents on effectiveness of various modes adopted by ITIs is for placement of trainees in industry:
 (a). IMC in ITI [Please rate the following conditions in increasing placement of trainee in Industry.]

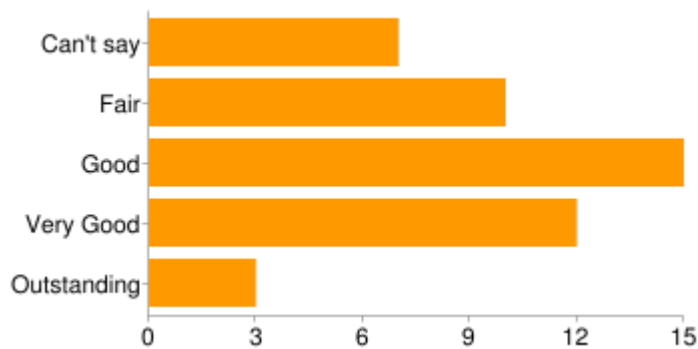


Figure 4.6

- (b). IMC in ITI in Society mode [Please rate the following conditions in increasing placement of trainee in Industry.]

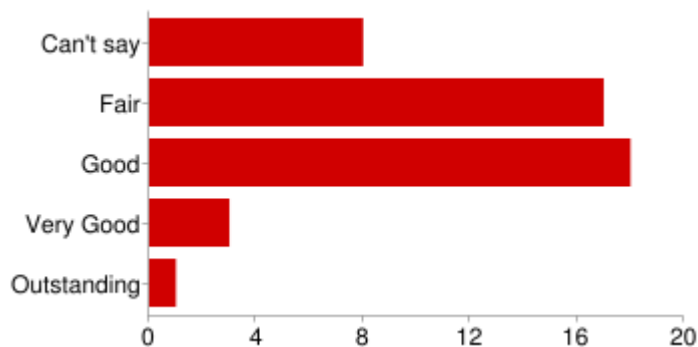


Figure 4.7

(c). MoU with industry [Please rate the following conditions in increasing placement of trainee in Industry]

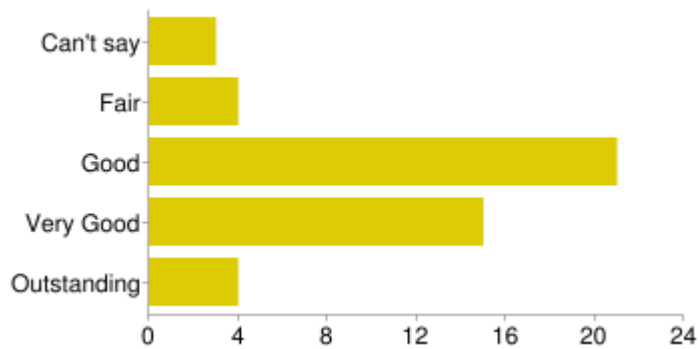


Figure 4.8

(d). Flexi MoU with industry [Please rate the following conditions in increasing placement of trainee in Industry.]

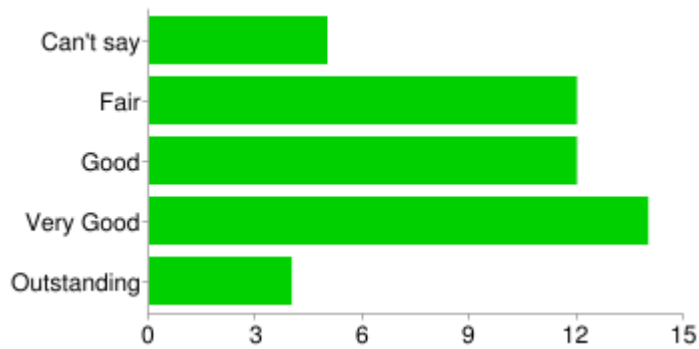


Figure 4.9

(e) A full fledged Training, Counselling and Placement Cell (TCPC) (Please rate the following conditions in increasing placement of trainee in Industry)

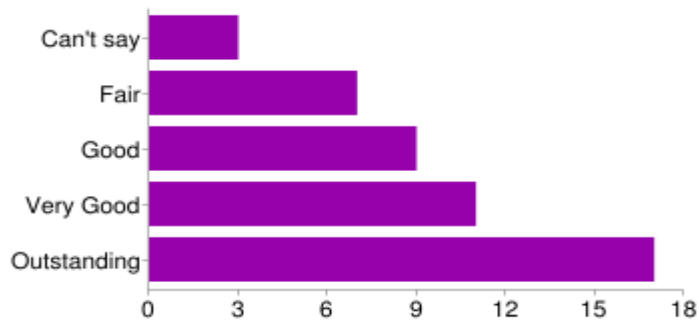


Figure 4.10

The segregated response in these 3 groups were tested on following hypothesis:

Null Hypothesis (Ho): The evaluation of the respondents, including IMCs, is similar.

Alternative Hypothesis (Ha): The evaluation of the respondents, especially IMCs, is biased.

Chi-square is one of the very popular methods for testing hypotheses on discrete data. The data can be nominal or ordinal. Finding descriptive statistics for such data is meaningless and data on frequencies and percentages is useful.

Table 4.1 NPar Tests and Reports

	N	Mean	Std. Deviation	Minimum	Maximum
IMCRating	48	3.5573	.46500	2.86	4.60

IMCRating

Respondent	Mean	Median	N	Std. Deviation	Skewness	Minimum	Maximum
ITI	3.3494	3.3600	16	.21489	-.080	2.97	3.75
State Govt.	3.4100	3.2150	16	.50166	.973	2.86	4.57
IMC	3.9125	4.0000	16	.41932	-.026	3.20	4.60
Total	3.5573	3.4700	48	.46500	.621	2.86	4.60

Mostly **Mean = Median** and skew-ness is nearly zero for ITI and IMCs as respondents, implying **symmetric distribution**. For State Government as respondent, the distribution r is **positively skewed**.

Table 4.2 Test Statistics

	IMCRating
Chi-Square	17.333 ^a
Df	27
Asymp. Sig.	.923

Since Asymp. Sig. is more than 0.05, the null hypothesis is accepted i.e. the evaluation of the respondents, including IMCs, is similar.

4.3 Conclusions

1. The average of response on IMC's effectiveness is ranging between 3 to 4 indicating that States assess its functioning more towards effectiveness or than being neutral.

Table 4.3.1 Matrix on States respondents with average ratings on IMC by the States

S. No.	Row Labels	Govt. ITI	IMC	State Govt.	Trainees	Grand Total	IMC Ratings
1	Assam	1		1		2	3.97
2	Bihar	4				4	3.38
3	Himachal Pradesh	1				1	1.00
4	Karnataka	23		3	1	27	3.45
5	Kerala	1		1		2	3.53
6	Madhya Pradesh	14	1	6		21	3.38
7	Manipur			1		1	4.00
8	Rajasthan	1				1	3.88
9	Tamil Nadu		6			6	4.08
10	Uttar Pradesh	6		3		9	3.15
11	West Bengal	1				1	3.19
	Grand Total	52	7	15	1	75	3.39

2. The survey broadly covered following three parameters and same has been summarized in Table 4.3.2 :

- i. IMC's structure
- ii. IMC in day-to-day working of ITI
- iii. IMC on policy initiative

On IMC's structure, the average rating is 3.5 i.e more towards agreeing state, but when factors like decision making and role of chairman is evaluated, it does little below the other averages.

IMC's contribution on day-to day working is again above 3.5 on an average but on expected contribution in terms of providing guest faculty, training faculty or trainees again the performance is below average of 3.5. On other policy matters like forecasting skills, suggesting curriculum improvement and placement of trainees etc., it performs below the other averages.

The IMC contributes well in planning for upgradation of ITIs and one of the reasons could also be assigning responsibility to IMC by authentication of the development Plan for upgradation of ITI.

Table 4.3.2 Survey on effectiveness of IMC in ITIs - involvement of industry

	Factors	Average Ranking	No. of Rankings 4 & above
IMC's structure			
1	Institute Management Committee (IMC) in ITI.	3.74	63
2	IMC is effective in involving industry	3.51	60
3	IMC structure effective in decision making	3.51	55
4	IMC is effective only if the Chairman of the IMC plays an active role.	3.58	58
5	IMC meetings are held on regular basis as per requirement.	3.65	69
IMC in day-to-day working of ITI			61
6	IMC contributes in preparation of IDP for upgradation of ITIs	3.84	62
7	IMC arranges/ employs faculty on contract basis	3.26	46
8	IMC arranges training of faculty in industry	3.01	36
9	IMC provides guest faculty	3.09	40
10	IMC manages industrial training for trainees	3.19	46
11	IMC provides placement of passed out trainees in industry	3.10	41
12	IMC takes interest in maintenance and equipment replacement	3.42	51
IMC on policy initiative			46
13	IMC contributes in improving curriculum	3.22	43
14	IMC suggests trades for training in the ITIs	3.48	56
15	IMC forecasts emerging skills requirement	3.17	43
16	IMC provides Machinery / Equipment to the ITI	3.44	53
Overall Average		3.39	49

2. The effectiveness of IMCs improves if the chairman is from a big industry and the industry belongs to the same trades that are offered by the ITI for training.

3. The survey has clearly indicated that having a full fledged Training, Counseling and Placement Cell (TCPC) in ITI is more effective and even signing MoUs with industries is more popular as compared to IMC 's role in placement of trainees. The graphs in Figure 4.6 to Fig. 4.10 may also be referred in this context. An analysis of responses is tabulated below :

Table 4.3.3 Response on contribution on placement of trainees in industry

Criteria	No. of responses – ranked 3 & above	No. of responses ranked 4 & 5
IMC in ITI	54	25
IMC in Society Mode	39	10
MoUs with industry	59	32
Flexi MoUs with industry	56	31
TCPC	64	48

Skills in other countries of interest:

4. China has many similarities with India in terms of being a large country with large population. The growth trajectory of China has been phenomenal in many aspects viz. growth in GDP, increase in exports, industrial growth in terms of production, innovations, penetration in the foreign markets etc. The information that could be retrieved from available resources, one could conclude that there is focus of the government on vocationalisation of school and higher education but there are limitations in terms of finances as many provinces and regions in the country have not grown uniformly. The country too has informal sector which contributes about 1/10th of the total GDP. Availability of large workforce at a cheaper cost is one of the well-known reason for low cost of production in China and competitive prices in the market. This is also one of the reasons to boost exports of the country. In this report, a case study has been mentioned on Automobile sector that gave some insight into industry-institute collaboration and also it hints at a scenario prevalent in the country of having various success stories on industry collaboration.

5. In contrast to Indian Education System, the Chinese education system has vertical mobility which is otherwise considered to be one of the reasons for having low popularity and high drop out in it is in India.

6. In case of OECD countries, which are developed and have high per capita GDP, there is a growing emphasis on having post-secondary vocational courses. The focus in these countries is shifting to develop vocational training programs after schools. These programs are developed to integrate work based

learning and foundation skills of literacy and numeracy. The qualification framework is prepared with involvement of employers.

5 Recommendations

1. To make IMCs more effective, incentive should be linked in the guidelines, at least covering the expenditure by IMC members for attending IMC meetings.

2. The Government may design / arrange sensitization programs for IMCs, State Government and ITIs. This could also be extended to centrally funded institutes as there is a proposal to also constitute IMCs in CFIs.

3. India is a big country with large labour work force, out of which about 50% is employed in Agriculture Sector. There is migration of workers from rural to urban cities to mostly join construction industry, as a result of which it employ large informal labour workforce. Having regulatory framework to employ certified workers along with implementing schemes that recognize prior learning (RPL) could be one of the strategies to reduce workforce in informal sector.

4. More than 80% of the trades available in the ITI system cater to manufacturing sector. Infrastructure strengthening / modernization has been done in the ITIs in recent past. Now efforts could be made to rigorously device courses with industry requirement and utilizing available infrastructure optimally.

5. India is third largest in terms of GDP in the World but has very low per capita GDP. So, the schemes should be designed while adopting economical methods and the infrastructure created should be optimally utilized. DGE&T's initiative on affiliation of 2 units per infrastructure created for a trade is in line with this concept.

5.1 Limitation & Way forward

1. The survey has been responded by State Government, Principal ITIs and IMC on random basis. To have representation of all the stakeholders, the sample of ITI and States could have been done on stratified sampling basis.

Selection basis could be on demography i.e. ITIs located in urban, rural, industrialized locations, or remote places etc

2. Based on this survey, another set of questionnaire could be developed to further evaluate the system and analyze focused role on industries contribution in bringing efficiency in the system eg. there are variety of functions defined in the MoU for IMC as Society but all may not be successful in all ITIs.. However, as per the survey conducted under this Project, signing an MOU with industry is more effective in placement of trainees than IMCs. Hence, based on further analysis, some guidelines could be prescribed, for the ITIs to customize functions of the IMC to suit the ITI.

3. Regional level sensitization Workshops could be organized for IMCs. This would be an effective platform for sharing experiences, good practices, cross-learning and motivation for IMCs

4. The industry interaction on Vocational Education in other countries of interest could be further carried out which would provide in-depth knowledge on the prevailing systems and few best practices followed in other countries could be adapted and adopted in the country.

5. As per research papers reviewed, the “Ministry of Labour and Social Security” China (New Ministry of HRDSS created in 2010 from MoLSS and Ministry of personnel) had set a target to train about 260 million “Rural Migrant Workers” in 5 years’ time i.e. from 2006 to 2010 i.e. [10 m in Basic ‘guiding’ training; 50 m in Special Vocational Training; 200 m in on-the-job training. Further information could be gathered to find out implementation strategy and find if some lessons could be learnt from such program to train and certify the huge labour force in the country especially in the informal sector.

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Annexure I –Skill Upgradation – ITI

Background:

Considerable efforts have been made in recent years for operationalising new government & private Industrial Training Institutes (ITIs), especially in backward regions. Considering that ITIs mainly cater to the skill development requirements of the disadvantaged social groups, the significant growth in ITIs– from 5114 (1896 Government ITIs and 3218 Private ITIs) in 2007 to 11,964. (2284 Government ITIs and 9680 Private ITIs) as on 8.0.2014, with the total seating capacity increasing from 7.42 lakh to 16.92 lakh during the same period – is a major step towards further improving the access of the disadvantaged sections to skill development initiatives.

Major Skill Development Schemes of DGE&T

a. Craftsmen Training Scheme :

Training courses under Craftsmen Training Scheme are being offered through a network of 11,964 Government and Private Industrial Training Institutes (Govt. and Pvt. ITIs) located all over the country with total seating capacity of 16.92 Lakh. Persons having 8th, 10th and 12th pass qualification can take admission in these institutes. There is no upper age limit for candidates taking admission in these ITIs.. About 70% of the training period is allotted to practical training and the rest to subjects relating to Trade Theory, Workshop Calculation & Science/Engineering Drawing & Employability Skills.

b. Apprenticeship Training:

Under the provisions of the Apprentices Act, 1961, the Apprenticeship Training is provided on the job in industry to school leavers and ITI pass outs with an objective to provide skilled workers for the industry in 252 designated trades. There are four categories of apprentices namely; trade apprentice, graduate, technician and technician(vocational) apprentices. Qualifications of trade apprentices vary from class VIII pass to XII class(10+2) system. Period of training varies from 6 months to 4 years. Central Apprenticeship Council is an apex statutory tripartite body which advises the Government on laying down of policies and prescribing norms & standards in respect of Apprenticeship

Training. It is obligatory on the part of employers both in Public and Private Sector establishments having requisite training infrastructure as laid down in the Act, to engage apprentices. At present 254 groups of industries and 27,000 establishments are covered under the Act. A total of 2,23,137 training seats for the trade apprentices have been utilized against 3,37,111 seats identified under the Act. Provision of stipend has also been made for trainees under the Act.

C. SKILL DEVELOPMENT INITIATIVE (SDI) SCHEME

Based on the Modular Employable Skills (MES) framework, the SDI scheme has been operationalised from May 2007 to provide vocational training for early school leavers and existing workers, especially in the unorganised sector. It seeks to improve their employability by optimally utilising the infrastructure available in government and private institutions and the industry. 1499 modules (from 60 to 1200 hours duration and covering 74 sectors of the economy) have been developed to cater to the requirement of the industry. The training programmes are conducted by more than 7305 Vocational Training Providers across the country. National Council for Vocational Training (NCVT) certificates are issued on the basis of the recommendation of 72 empanelled institutions. A total of 20.42 lakh have been trained.

D. MODERNISATION OF ITIs

UPGRADATION OF 500 ITIs THROUGH DOMESTIC FUNDING AND WORLD BANK ASSISTED VOCATIONAL TRAINING IMPROVEMENT PROJECT :With domestic funding, existing 100 ITIs were upgraded into 'Centres of Excellence' for producing a multi-skilled workforce of global standards. Under the scheme, multi-skilling courses are offered during the first year, followed by advanced and specialised modular courses in the second year by adopting the industry-wise cluster approach, multi-entry and multi-exit provisions and the concept of Public Private Partnership (PPP) in the form of Institute Management Committees (IMCs) to ensure greater and more active involvement of industry in all aspects of training. Under the Vocational Training Improvement Project (VTIP) taken up with the assistance of World Bank, 400 ITIs were upgraded.

E. SCHEME OF UPGRADATION OF 1396 GOVERNMENT ITIs THROUGH PUBLIC-PRIVATE PARTNERSHIP

This scheme was launched in 2007-08 to improve the employment prospects of graduates from the vocational training system, by making the delivery of training more demand-responsive. Under the scheme, an Institute Management Committee (IMC), headed by an industry partner, is constituted in the ITI and registered as a Society. The Central Government grants an interest-free loan of up to ` 2.50 crore directly to the IMC, which is given financial and academic autonomy. The scheme of upgradation of 1396 ITIs through public private partnership has resulted in a remarkable expansion of training infrastructure in a large number of ITIs across the country. Many ITIs have developed high-class workshop areas in new and emerging trades, providing the students opportunities for hands-on experience of modern technology. The average intake capacity of ITIs has increased markedly over the years. On an average there was a 60% increase in the gross intake capacity or number of seats in the ITIs under the scheme. There has also been an upsurge in the number of students belonging to disadvantaged backgrounds in several ITIs. Also of note are the noteworthy increase in the placement ratio of students (ranging from 60 to 98 per cent in different ITIs) and, significantly, substantial improvements in the average nominal monthly earnings of the placed students, which increased by around 50%.

F. NEW SCHEMES

In order to comply with the announcement of Hon'ble Prime Minister on 15 August, 2007 to set up 1500 ITIs and 50,000 SDCs, the MoL&E is in the process of formulating following schemes:

a) Setting up of 1500 ITIs :1500 new ITIs in PPP mode preferably in un-serviced blocks are proposed to be set up on Government & private land with basic infrastructure (i.e. electricity, road, communication etc.). The Central Government will participate by providing capital expenditure support in the establishment of the institutes. ITIs can admit another 300 trainees for which ITI may charge fee.

b) Establishment of Advance Training Institutes (ATIs)To meet the gap for instructor training , the MoL&E has formulated a scheme to establish Advance Training Institutes (ATIs) in PPP mode. The approval process is underway.

Annexure II Skill training offered by Ministries in India

Ministry/Department	Vocational education and training programs
Agriculture	<ul style="list-style-type: none"> ▶ Training in agricultural extension (21 training centres) ▶ Training in use of agricultural implements and machinery ▶ Soil conservation training center ▶ Cooperative education and training ▶ Educational institutions: <ul style="list-style-type: none"> ▶ One central agricultural university ▶ 31 state agricultural universities (SAUs) ▶ 4 National Institutes of Indian Council of Agricultural Research
Food processing	<ul style="list-style-type: none"> ▶ Established of more than 300 food processing and training centers ▶ Training institutions: <ul style="list-style-type: none"> ▶ Central Food Technology Research Institute ▶ Paddy Processing Research Centre (PHTC) ▶ Council of Entrepreneurial Development Programme ▶ Entrepreneurship Development Programme for development of human resources
Health and family welfare	<ul style="list-style-type: none"> ▶ Promotional training of female health assistants in 42 training centers ▶ Basic training to health workers through: <ul style="list-style-type: none"> ▶ 478 Multipurpose Health Worker Training Schools (MPW) for women ▶ 28 Health and Family Welfare Training Centers (HFWTC) and 30 MPW for men
Heavy industries and public enterprises	<ul style="list-style-type: none"> ▶ Counseling, retraining and redeployment of workers of Central Public Sector Enterprises (CPSEs)
Information Technology	<ul style="list-style-type: none"> ▶ DOEACC - O level ▶ CEDTI: conducts courses in the field of electronics, telecommunications, IT, process control and instrumentation
MSME (Small Industries Development Organization (SIDO))	<ul style="list-style-type: none"> ▶ Entrepreneurship Development Programme ▶ Skill Development Programme (SDP) ▶ Management Development Programme
Khadi & Village Industries Commission under Ministry of MSME	<ul style="list-style-type: none"> ▶ 51 training centers run 35 types of programs
Social justice and empowerment	<ul style="list-style-type: none"> ▶ National Institute of Mentally Handicapped ▶ National Institute for the Orthopaedically Handicapped ▶ Institute for Physically Handicapped ▶ National Institute for the Hearing Handicapped ▶ National Handicapped Finance and Development Corporation ▶ National Scheme of Liberation and Rehabilitation of Scavengers and their Dependents
Textiles	<ul style="list-style-type: none"> ▶ The Integrated Skill Development Scheme (ISDC) for the textile and apparel sector with the launch of ATDC-SMART (Skill for Manufacturing Apparels through Research and Training) ▶ Decentralized training program with 24 weavers service centers, 13 power loom centers and many other boards and councils
Tourism	<ul style="list-style-type: none"> ▶ 15 Food Craft Institutes under state governments
Tribal affairs	<ul style="list-style-type: none"> ▶ Vocational training centers (VTC) in tribal areas
Urban development and poverty alleviation	<ul style="list-style-type: none"> ▶ Urban Self Employment Programme under Swarna Jayanti Shahari Rozgar Yojana (SJSRY)
HUDCO and others in construction sector under Ministry of Urban Development & Planning Commission	<ul style="list-style-type: none"> ▶ Construction Industry Development Council (CIDC)
Women and child development	<ul style="list-style-type: none"> ▶ Support to Training and Employment Programme for Women (STEP) ▶ Women Empowerment Programme in collaboration with IGNOU (training program on "Empowering women through SHG")

Source: FICCI-Ernst & Young: Knowledge Paper on 'Strategic and Implementation Framework for Skill Development in India. September 2011

Annexure III Private Sector Initiatives in Skill training

Manufacturing sector ¹³		
Sector	Company name	Training initiative
Construction	Larsen & Toubro	▶ L&T has established Construction Skills Training Institutes (CSTIs) in Chennai, Panvel, Ahmadabad, Bengaluru, Hyderabad, Delhi and Kolkata to impart construction vocational training.
Textile	Vardhman Group	▶ The group has established the Vardhman Training and Development Centre (VTDC) at Ludhiana to enhance employee skills across all functions.
Electronic goods	Godrej Industries	▶ Godrej has recently tied up with The George Telegraph Training Institute (the pioneer in vocational training in eastern India) to launch specialized courses in refrigeration, air-conditioning and washing machine technology. On completing the course, deserving students will be offered employment with Godrej.
Automotive	Maruti Suzuki India Ltd. (MSIL)	<ul style="list-style-type: none"> ▶ MSIL has tied up with 17 ITIs (in November 2010) and has placed nearly 400 students in its service network. It plans to ramp up its network to 53 ITIs and absorb 500-600 more ITI students in coming months. ▶ The company has also tied up with other institutes such as the BGS Institute of Science & Management and the ABT Technical Institute to conduct Maruti-certified courses. ▶ MSIL has also set up a Technical Training Centre (TTC) to cater to the training needs of employees working in the manufacturing domain and train them on the latest technologies.

Services sector ¹⁴		
Sector	Company name	Training initiative
Retail	ITC	▶ ITC Wills Lifestyle has tied up with professional courses provider NIS Sparta, which is a part of the Reliance ADA Group, to provide training in retail management.
Hospitality	Grand Hyatt	<ul style="list-style-type: none"> ▶ Hyatt Hotels Corporation has its in-house training initiative, School of Hospitality at Grand Hyatt Mumbai. ▶ It also has three more schools of learning – the School of Leadership, the School of Management Studies and the School of General Studies.
Information technology	Infosys	▶ Infosys' global training center in Mysore is one of the largest corporate training establishments in the world and can accommodate 15,000 people.
Financial services	ICICI Bank	▶ ICICI has established ICICI Manipal Academy (IMA), in association with Manipal Education, to train newly recruited junior managers of the bank in banking and finance. The institute has an intake of 550-600 students every three months.
Aviation	Pawan Hans Helicopters Limited (PHHL)	▶ PHHL's training institute provides Aircraft Maintenance Engineering (AME) courses and imparts knowledge on helicopters and their systems to students.

Source: **FICCI-Ernst & Young: Knowledge Paper on 'Strategic and Implementation Framework for Skill Development in India. September 2011**

Annexure IV : IMC and its role

The Institute Management Committee (IMC) is constituted for the entire ITI and will comprise upto 11 members as given below:

- Not more than five members will be nominated by 'THE SECOND PARTY';
- Not more than five local employers nominated by Industry Associations such as CII/FICCI/ASSOCHAM/SCOPE or by local Industry Associations;
- The IMC will be chaired by one of the five employers. In case of 'THE CoE', 'THE IMC's Chairperson will preferably be from the related sector industry/industry association; and
- The Principal of the ITI will be an ex-officio member, acting as Secretary

The IMCs may associate additional members (for example, officers from leading bank, area employment officer, other industry member(s)) as per need

Role of IMC : Delegate to 'THE IMCs' through an MoU adequate powers to perform the following functions:

- Help forecast emerging skills requirements and accordingly take the following actions:
 - Suggest modifications in respect of various courses
 - Add new trades/units with the concurrence of relevant State/UT and national authorities and/or abolish trades that are redundant or irrelevant to the locality;
 - start short-term training programs; o review training needs and approve training of instructors, and of administrative/office staff;
 - facilitate placement of graduates;
 - endorse expenditure as proposed by ITI Principals;
 - generate, retain and utilize all the revenue; and
 - appoint contract faculty.

Delegation to all Principals of ITIs the necessary financial and administrative powers to undertake, on behalf of the IMC, the procurement, refurbishment and maintenance activities that are required for speedy project implementation. Once the Annual Plan and Budget is approved the Principal need not seek approval for individual purchases that are in line with the powers delegated.

Annexure V : Format - Survey 'Effectiveness of IMC in ITIs'

Please note that this survey is being done for academic purpose as a project work. The survey is to collect opinion of officials/ trainees who are actually working in the system.

As you may be aware that various models of Institute Management Committees (IMCs) have evolved over the years. Please fill the following questionnaire for assessment on contribution of IMCs in bringing qualitative improvement in ITIs.

*** Required**

Name of the State *

(Please indicate the name of State of your work/ ITI)

In which office do you work or are you a student at present? *

Please choose any one option

- Central Government
- Central Field Institute
- State Government
- Government ITI
- Institute Management Committee
- Trainees

How many years of experience do you have in the field of Vocational Training?

- less than 2 years
- between 2 to 5 years
- between 5 to 10 years
- between 10 to 15 years
- more than 15 years
- Not applicable

Nature of work for most of years of experience you have *

Tick the option(s) as applicable

- Training
- Administrative matters
- Policy formulation
- Procurement matters
- Project Implementation
- Academic matters
- Not applicable

Each Government ITI should set up an Institute Management Committee (IMC). *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

IMC is effective in involving industry in improving quality of training of ITI. *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

The present defined IMC structure with Government and Private participation in the ITIs are effective in decision making and improving the training in ITI *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

The IMC is effective only if the Chairman of the IMC plays an active role. *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

IMC contributes to upgradation of ITI by the preparation of Institutional Development Plan(IDP) for upgradation of ITIs *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC meetings are held on regular basis as per requirement. *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

IMC arranges/ employs faculty on contract basis *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC arranges training of faculty in industry *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC provides guest faculty *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC manages industrial training for trainees *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC provides placement of passed out trainees in industry *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC provides additional input in curriculum as per industry needs *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC suggests trades for training in the ITIs *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC forecasts emerging skills requirement *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC provides Machinery / Equipment to the ITI *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

IMC takes interest in maintenance and equipment replacement *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Sensitization/ Orientation Program for IMCs should be organised : *

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Following condition improves the contribution of IMC in ITI, assuming similar conditions viz. size of ITI, trades covered etc. *

	Can't say	No impact	Fair	Good	V Good
i. IMC Chairman from a big industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ii. IMC Chairman from small and micro firms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iii. IMC Chairman from a Public Sector Undertaking (State/Central)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iv. IMC Chairman from industrial association	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
v. IMC Chairman from the industry related to the trades covered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Can't say No impact Fair Good V Good

in the ITI

Please rate the following conditions in increasing placement of trainee in Industry. *

	Can't say	Fair	Good	Very Good	Outstanding
i. IMC in ITI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ii. IMC in ITI in Society mode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iii. MoU with industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iv. Flexi MoU with industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
v. A full fledged Training, Counselling and Placement Cell (TCPC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Annexure VI : Brief Guidelines for Model ITI

Upgradation of Existing Government Industrial Training Institutes into Model ITIs - CENTRALLY SPONSORED SCHEME

Existing Government ITI is to be identified for upgradation as a Model ITI. Key objective is to develop a benchmark for **industry oriented ITI** which would serve as a model for other ITIs and would also raise dignity of ITI education.

List of Activities for submission of Proposal for Model ITI:

1. Select an existing Government ITI located in a major industry cluster with a champion industry partner.
2. The Model ITI should not have been funded under the Vocational Training Improvement Project (VTIP). An exemption maybe provided under exceptional circumstances on considering the justification provided by the State strictly on a case-to-case basis. Similarly, the Model ITIs identified in the North Eastern States should not have been funded under the scheme 'Enhancing Skills Development Infrastructure (ESDI) in North Eastern States and Sikkim' without any exceptions.
3. The ITI must have a functioning Institute Management Committee (IMC) registered as a Society. Other members in IMC from industry may also represent various trades in the ITI.
4. IMC Society will be required to take up reassessment of all existing trades and new requirements for their relevance with local market demand, for preparation of implementation plan (IP)
5. Tripartite Memorandum of Agreement (MoA)* is to be signed between the champion industry partner, State/ UT Governments and Central Government for each of the IMC Society.
6. The State Government may recommend the IP to DGE&T along with commitment to give state share and to sign MOA.
7. Based upon the IP, central share of funds will be released to the States only after IMC is formed and action has been initiated for registration of society.
8. State will provide funds to the IMC Society including State Share. Released Central funds along with State share should be released by the State Government to the IMC only after its registration as a Society is complete.

Objective : The following are the objectives:

Offer training to

- i. New job entrants through

- a) Existing trades (s) (upgraded to match the standards laid down)
- b) Starting of new trades
- c) Conduct of short-term training programmes with customized skill training

ii. existing workers

iii. workers of unorganized sector

Such ITIs may plan to upgrade existing trades, close trades which are obsolete (having no meaningful demand) and start new trades that cater to the Industry clusters. Further, they can run short-term courses under Modular Employable Skills (MES), as well. These objectives would be carried out through :

(i). Sign flexi Memorandum of Agreement (MoU): To assist Industry with qualified and trained workforce, DGE&T has started a scheme on 'Demand Responsive Vocational Training'. Under this scheme, any Industry can sign a MoU with DGE&T to conduct training programmes to meet specific skill requirement of the Industry. Under the scheme, approval of the courses, examination / assessment and certification will be done by NCVT. However, Industry would ensure 80% employment. ITIs can also propose similar agreement with local Industry and seek approval of DGE&T to make use of the advantages like issue of NCVT certificate and better employment opportunity to the passed-out trainees. Sample MoU may be seen at DGET website www.dget.nic.in.

(ii). Strengthening placement cell: The Placement Cell in the Model ITI should also function as Career Center envisioned under National Career Service (NCS).

Almost all the ITIs have established Training, counselling and Placement Cell (TCPC). The objective of TCPC is to foster close networking with the industry and assist job placement for the trainees. To have a functional TCPC

- ITI may appoint a qualified person on contract for TCPC coordinator and equip it with better facilities for immediate response from employer/Industry.

- The TCPC will perform counselling and job placement and will be a one-point stop for employers/Industries and trainees.

The additional manpower requirement (instructors for new trades and TCPC coordinator etc.) should be assessed and filled up in the Implementation Plan. Plan of the action for creation and filling up of posts would be part of Implementation Plan.

3. Institute Management Committee (IMC)

The Model ITI must have a functioning Institute Management Committee (IMC) registered as a Society under the Societies Registration Act, 1860. The IMC must have a pre-identified **champion industry partner** that is willing to run the operations of the IMC Society. The State Government would also delegate adequate functional powers to IMC in accordance with the Scheme of 'Upgradation of 1396 Government ITIs under PPP mode'

Memorandum of Agreement (MoA)

A Tripartite Memorandum of Agreement (MoA) will be signed between the champion industry partner, State/ UT Governments and Central Government for each of the IMC Society. These will inter-alia include role, autonomy to IMC and deliverables i.e. Key Performance Indicators (KPIs), job offer by the industry, industry attachment to the trainees etc. The KPIs and overall Target Values will be as per following benchmarks:

S.No.	Key Performance Indicator	Overall Target Values		
		Year 1	Year 2	Year 3
1.	Overall Seat Utilization	70%	80%	90%
2.	Pass-out Rate (overall average)	65%	70%	75%
3.	Placements (overall average, wage/self-employment)	60%	70%	80%
4.	Real monthly wages* of placed candidates	10% increase per year from baseline		
5.	Average number of outside workers trained by	80% of the existing	100% of the existing	200% of the existing

	<i>additional short term courses being run</i>	<i>seats in ITI.</i>	<i>seats in ITI.</i>	<i>seats in ITI.</i>
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** For wage employment, the benchmark would be not less than minimum wages for semi-skilled workers. There is also a reasonable permissible component of self-employment.*

4. Major Actuality for IMC Society

4.1 IMC Society will be required to take up reassessment of all existing trades and new requirements for their relevance with local market demand, for preparation of implementation plan. Based upon the implementation plan as agreed by the State Government central share of funds will be released to the States.

4.2 As part of the project, IMC will interalia, take up the following activities:

- a) Realignment of offered CTS programmes to industry needs by converting/opening relevant units based on the reassessment exercise;*
- b) Upgradation of all retained units by provisioning relevant infrastructure and training facilities;*
- c) Upgradation of overall facilities in the institute, including building, library, workshops, computer labs and IT facilities and other infrastructure for hygiene, safety and quality upkeep;*
- d) Filling up all vacant instructor positions by hiring contractual faculty, if required;*
- e) Setting up a full-fledged Training, Counselling, and Placements cell (TCPC) and appointing a full time training and placement officer for liaisoning with the industry and generating and converting placement leads; TCPC of Model ITI will support other ITIs of the State, in its vicinity using Hub and Spoke model*
- f) Strengthening the TCPC to work as a Career Guidance Centre as envisioned in the National Career Service and guide/help the graduates in employment/self-employment*
- g) Champion Industry Partner to conduct training programmes in the most popular trade in ITI;*
- h) Creating suitable infrastructure for upgradation of skills of the existing workforce of the local industrial units;*
- i) Carrying out advocacy activities for institute promotion amongst candidates and potential employers by creating websites and holding job fairs;*
- j) Ensuring industrial attachment of ITI trainees for minimum 15 days.*

Annexure VII Responses on Questionnaire

S. No.	In which office do you work or are you a student at present?	How many years of experience do you have in the field of Vocational Training?	Nature of work for most of years of experience you have	Overall Average	Need for sensitisation Prog. For IMC	Name of the State
1	Government ITI	between 5 to 10 years	Training, Administrative matters, Procurement matters, Project Implementation, Academic matters	2.25	5	Bihar
2	Government ITI	between 2 to 5 years	Training, Administrative matters, Policy formulation	4.25	4	Bihar
3	Government ITI	between 2 to 5 years	Training, Administrative matters, Project Implementation	3.63	5	Bihar
4	Government ITI	between 2 to 5 years	Training, Academic matters	3.38	5	Bihar
				3.38		
5	Government ITI	between 10 to 15 years	Administrative matters	1.00	1	Himachal Pradesh
6	State Government	more than 15 years	Project Implementation	4.00	5	Karnataka
7	Government ITI	between 10 to 15 years	Training, Administrative matters	3.63	4	Karnataka
8	Government ITI	more than 15 years	Training	3.50	4	Karnataka
9	Government ITI	more than 15 years	Training	3.81	4	Karnataka
10	Government ITI	more than 15 years	Training, Administrative matters	3.94	4	Karnataka
11	Government ITI	more than 15 years	Training, Administrative matters	2.06	5	Karnataka
12	Government ITI	more than 15 years	Training, Administrative matters, Procurement matters, Project Implementation	2.63	3	Karnataka
13	State Government	more than 15 years	Training	3.75	4	Karnataka
14	State Government	between 5 to 10 years	Administrative matters	3.44	4	Karnataka
15	Government ITI	more than 15 years	Training, Administrative matters, Procurement matters	3.06	5	Karnataka
16	Government ITI	between 5 to 10 years	Administrative matters	4.13	4	Karnataka

17	Government ITI	more than 15 years	Training, Administrative matters, Procurement matters, Project Implementation, Academic matters	4.00	4	Karnataka
18	Government ITI	between 10 to 15 years	Training	3.44	5	Karnataka
19	Government ITI	more than 15 years	Administrative matters	3.94	5	Karnataka
20	Government ITI	more than 15 years	Administrative matters	3.06	4	Karnataka
21	Government ITI	between 5 to 10 years	Administrative matters	2.13	2	Karnataka
22	Government ITI	between 10 to 15 years	Training	3.44	4	Karnataka
23	Government ITI	more than 15 years	Training, Administrative matters, Procurement matters, Project Implementation, Academic matters	3.19	5	Karnataka
24	Government ITI	between 5 to 10 years	Administrative matters	3.31	5	Karnataka
25	Government ITI	more than 15 years	Training	3.63	4	Karnataka
26	Trainees	less than 2 years	Not applicable	2.19	2	Karnataka
27	Government ITI	more than 15 years	Training	4.13	3	Karnataka
28	Government ITI	more than 15 years	Training	3.69	5	Karnataka
29	Government ITI	more than 15 years	Training	4.00	4	Karnataka
				3.42		
30	State Government	more than 15 years	Training, Administrative matters, Project Implementation	2.94	2	Kerala
31	Government ITI	more than 15 years	Academic matters	4.13	5	Kerala
				3.53		
32	State Government	more than 15 years	Training, Administrative matters, Procurement matters, Project Implementation, Academic matters	3.19	5	Madhya Pradesh
33	State Government	between 10 to 15 years	Administrative matters, Policy formulation, Project Implementation	4.00	4	Manipur
34	Government ITI	more than 15 years	Training, Administrative matters	3.88	4	Rajasthan
35	IMC	between 2 to 5 years	Administrative matters, Procurement matters	3.69	4	Tamil Nadu
36	IMC	between 5 to 10 years	Training, Administrative matters, Policy formulation, Procurement matters, Project Implementation, Academic matters	4.06	4	Tamil Nadu
37	IMC	more than 15 years	Administrative matters, Policy formulation, Procurement matters, Project Implementation	3.75	4	Tamil Nadu
38	IMC	more than 15 years	Policy formulation	4.13	5	Tamil Nadu

39	IMC	Not applicable	Not applicable	3.88	4	Tamil Nadu
				3.90		
40	Government ITI	more than 15 years	Administrative matters	2.56	3	Uttar Pradesh
41	Government ITI	more than 15 years	Administrative matters	3.75	4	Uttar Pradesh
42	State Government	between 5 to 10 years	Training, Administrative matters, Policy formulation, Procurement matters, Project Implementation, Academic matters	2.56	5	Uttar Pradesh
43	Government ITI	between 10 to 15 years	Training, Administrative matters, Project Implementation, Academic matters	3.88	4	Uttar Pradesh
44	Government ITI	between 5 to 10 years	Administrative matters	2.38	4	Uttar Pradesh
45	Government ITI	between 10 to 15 years	Training	3.44	4	Uttar Pradesh
				3.09		
			Overall Average	3.39	4.07	

Annexure VIII - Average Ratings

Survey on effectiveness of IMC in ITIs - involvement of industry					
	Factors	Overall	Govt. ITI	State Govt.	IMC
1	Institute Management Committee (IMC).	3.82	3.56	4.57	4.60
2	IMC is effective in involving industry	3.53	3.50	3.71	3.80
3	IMC structure effective in decision making	3.58	3.56	3.71	3.60
4	IMC is effective only if the Chairman of the IMC plays an active role.	3.69	3.56	4.00	4.40
5	IMC meetings are held on regular basis as per requirement.	3.82	3.75	4.14	4.40
6	IMC contributes in preparation of IDP for upgradation of ITIs	3.53	3.44	3.57	4.00
7	IMC arranges/ employs faculty on contract basis	3.29	3.31	3.14	3.60
8	IMC arranges training of faculty in industry	3.00	2.97	3.14	3.20
9	IMC provides guest faculty	3.07	3.06	3.00	3.40
10	IMC manages industrial training for trainees	3.24	3.16	3.29	4.00
11	IMC provides placement of passed out trainees in industry	3.16	3.19	3.00	3.40
12	IMC takes interest in maintenance and equipment replacement	3.40	3.41	2.86	4.40
13	IMC provides contributes in improving curriculum	3.31	3.31	3.00	4.00
14	IMC suggests trades for training in the ITIs	3.47	3.41	3.43	4.00
15	IMC forecasts emerging skills requirement	3.09	3.09	2.86	3.60
16	IMC provides Machinery / Equipment to the ITI	3.31	3.31	3.14	4.20

		3.39	3.35	3.41	3.91

Annexure IX Placement in ITI- Average Ratings

Survey on effectiveness of IMC in ITIs - involvement of industry					
	Placement of trainees in Industry.				
	[i. IMC in ITI]	[ii. IMC in ITI in Society mode]	[iii. MoU with industry]	iv. Flexi MoU with industry]	v. A full fledged Training, Counselling and Placement Cell (TCPC)]
All Respondent	2.87	2.31	3.24	2.96	3.62
State Government	2.71	2.86	3.57	3.43	3.86
Government ITI	2.84	2.25	3.19	2.91	3.59
Institute Management Committee (IMC)	3.40	2.20	3.60	3.00	4.00
Average	2.96	2.40	3.40	3.07	3.77

Annexure X IMC Chairman - impact in ITI

	Following condition improves the contribution of IMC in ITI, assuming similar conditions viz. size of ITI, trades covered etc.				
	[i. IMC Chairman from a big industry]	IMC Chairman from small and micro firms	iii. IMC Chairman from a Public Sector Undertaking (State/Central)]	IMC Chairman from industrial association]	v. IMC Chairman from the industry related to the trades covered in the ITI]
All Respondent	2.22	1.96	2.00	1.89	3.18
State Government	2.57	1.86	2.14	2.57	2.86
Government ITI	1.93	1.90	2.03	1.78	2.86
Institute Management Committee (IMC)	2.40	2.20	1.00	2.00	3.60
Average	2.28	1.98	1.79	2.06	3.12

Appendix : Descriptive Statistics

Descriptive statistics is a numerical method for deriving information from collected data. The numerical methods include measures of central tendency and measures of variability. The common measures of 'central tendency' of data are - mean, median, and mode; 'variability' indicates spread or dispersion among the data and is measured as commonly as range, variance, and standard deviation. 'Skewness' conveys information about the distribution of data to be symmetric or not. If its value is zero, it implies symmetrical distribution, if mean > median, it is positively skewed and if mean < median, the distribution is negatively skewed.

A 'hypothesis' is an assumption or claim about some characteristic of a population, which we should be able to support or reject on the basis of empirical evidence. Hypothesis testing is a process for choosing between different alternatives. The alternatives have to be mutually exclusive and exhaustive. Typically, in hypothesis testing, we have two options to choose from. These are termed as null hypothesis and alternate hypothesis.

- Null Hypothesis (H_0) — It is the presumption that is accepted as correct unless there is strong evidence against it.'
- Alternative Hypothesis (H_a) — It is accepted when H_0 is rejected'.

Significance Level (p-value)

The criterion that is used for accepting or rejecting a null hypothesis is called significance level or p-value. For example a p-value of 0.05 means there is only a 5% chance that you would be wrong in concluding that the populations are different or 95% confident of making a right decision. For social sciences research, a p-value of 0.05 is generally taken as standard.

Understanding the terms 'parametric and non-parametric' test

For a statistical analysis, it is generally not practical to get data from the population. Wherever it is feasible and economical to collect data for greater precision in the results, one can collect data from the population. Otherwise, it is

advisable to collect data from a subset or a sample of the population. The objective is to know the “truth” about the population. For a population, the measured quantities such as means, standard deviations and proportions are its “parameters”. Calculating these quantities from sample data is “statistics” i.e. a statistic estimates a parameter. Parametric statistical procedures rely on assumptions about the shape of the distribution (i.e., assume a normal distribution) in the underlying population and about the form or parameters (i.e., means and standard deviations) of the assumed distribution. As an alternative, there are non-parametric tests which can be carried out on a population distribution if assumptions can’t be made about the shape or parameters. The major points and how they might affect statistical analyses are tabulated below

Table Parametric Test vis-à-vis Non-parametric Test

S. No.	PARAMETRIC TEST	NON-PARAMETRIC TEST
1.	These tests are based on assumptions about the distribution of the population from where the sample is extracted e.g. that the data is approximately normally distributed	Under this statistical test, there are no assumptions made about the shape of the population.
2.	If the data do not satisfy (with minor deviation) the assumptions required for a parametric procedure, incorrect conclusion may be drawn using this procedure.	If conditions required for parametric procedure are not complying then analogous nonparametric test can be used.
3.	The parametric assumption of normality may not be true for small sample sizes ($n < 30$).	Nonparametric tests are often a good option for these data.
4.	Parametric tests are more powerful for normally distributed data.	Nonparametric procedures are comparatively less powerful for the similar sample.

Source: Created by author based on information available in “Parametric and Nonparametric: Demystifying the Terms *By Tanya Hoskin, a statistician in the Mayo Clinic Department of Health Sciences*” Retrieved from “<http://www.mayo.edu/mayo-edocs/center-for-translational-science-activities-documents/berd-5-6.pdf>” on May 2015.