

**2006 Baseline Study of India's Industrial Training Institutes:  
Institutional Performance and Employment of ITI Graduates**

March 2007

Hong Tan, Sangeeta Goyal, Yevgeniya Savchenko  
South Asia Region, Human Development Department (SASHD)  
The World Bank

Prepared for the Directorate General for Employment and Training  
Ministry of Labor and Employment, Government of India  
As part of preparation for the India Vocational Training Improvement Project

# Contents

Executive Summary.....	3
1. Introduction: Institutional Performance and Employment of ITI Graduates.....	4
2. Base-line Surveys.....	5
3. Overview of ITI Performance.....	7
4. Labor Market Outcomes and Satisfaction with Training of ITIs.....	16
5. Findings and Recommendations.....	26
References.....	28
Annex.....	29

## **Executive Summary**

There is growing demand in India for a more educated and skilled workforce to support on-going economic growth, to bridge emerging skill-gaps, and to correct skill mismatches due to disconnect between the demand for and supply of skills.

Currently, around 0.71 million youth undertake training in about 5,000 plus public and private industrial training institutes/industrial training centers (ITI/ITC).

Two studies were undertaken in 2006 to provide base-line information on ITI performance and labor market outcomes of ITI pass-outs and usefulness of training given in public sector ITIs. The former was assessed through an ITI Institutional Census (2006) which canvassed data from all ITIs in the public domain; the latter through a tracer study of ITI pass-outs, the ITI Tracer Study (2006).

### *ITI performance*

From the ITI Institutional Census (2006), two factors emerge clearly that can seriously affect the quality of training provided in ITIs: (a) a very high proportion (25 percent) of instructor vacancies remaining unfilled and (b) lack of regular in-service training for most vocational instructors (nearly 75 percent instructors had not received any in-service training in the last three years). There are large variations across states but the nation-wide averages for these variables are significant in magnitude.

There is lack of rationalization of course offerings which likely reduces the cost-efficiency of ITIs. Courses with no demand continue to be offered, and there is evidence of over-subscription in some courses.

The internal efficiency of ITIs as measured by pass-rates of enrollees is also low. Though the pass rate varies considerably across states, on the average, only 61 percent of those who enroll in ITIs pass the final exam.

### *Labor Market Outcomes*

Labor market outcomes of ITI trainees assessed through a tracer study of ITI pass-outs show poor results. Only 32 percent of ITI pass-outs interviewed in the tracer study had found any employment within 12 months of graduating. Outcomes vary by states and by duration of training course undertaken (whether one-year or two-years) but overall they remain unsatisfactory.

The tracer study also asked graduates to rate the training they received along dimensions of quality and usefulness. Their response clearly indicated that the scope of training provided in ITIs needs to be extended to include general skills relevant for improving their chances in the current labor market. Among skills identified by students as valued by employers included communication, presentation, management and entrepreneurship.

## **1. Introduction**

India's economy has grown rapidly in the last decade and with rapid growth, demand has grown for a more educated and skilled workforce. In response, the Government of India (GoI) has expanded investments in general education and sought to expand and improve delivery of post-school vocational training for youth not continuing into higher education. The formal vocational training system in India currently consists of 1,882 public Industrial Training Institutes (ITI) and 3,358 private Industrial Training Centers (ITC) with a total annual training capacity of 740,000 plus students. This output is woefully inadequate to meet the numerical needs of employers for skilled workers or the training aspirations of school leavers. There is also reportedly a mismatch between the training that institutions provide their pass-outs and the skills that employers need.

Despite these investments in the human capital of the workforce, the relative wages of workers with secondary and higher levels of education have grown even as the supply of these workers has also increased, providing evidence of a rising demand for educated and skilled workers (World Bank, 2006). Even with rising demand for skilled labor, the labor market outcomes for graduates of the training system are very poor. While nearly 60 percent of all graduates of the vocational training system remain unemployed, there is evidence that employers are not able to hire trained labor in adequate numbers. An ILO study (2003) showed that more than eighty percent of employers in Orissa and Andhra Pradesh, and more than fifty percent of employers in Maharashtra frequently or occasionally faced problems in finding skilled employees. Moreover, among those who did find employment, nearly two-thirds worked in trades other than those they were trained for.

The three most important reasons for poor labor market outcomes for graduates of the training system are: (a) the low quality of training which results in the supply of relatively low quality skills; (b) the mismatch between skills acquired and those in demand in the labor market; and (c) the mismatch between skills taught and the graduates' own career and labor market aspirations. The low quality of skills supplied by vocational training institutions is highlighted by the findings of several recent studies. A 2003 Directorate General of Employment and Training (DGET) study of graduates of apprenticeship training programs in six states concluded that training provided had doubtful relevance for the labor market. A 2002 survey by FICCI assessing the quality and relevance of vocational and technical training from industry's perspective came to the same conclusion. According to this survey of 55 enterprises, about 60 percent of respondents felt that training institutions were not geared to meeting the needs of industry, and almost 87 percent felt that training should include exposure to industry practices. Respondents stressed the importance of partnerships and collaboration between the public and private sectors for achieving a better match between the supply of and demand for skills.

The recent Report on Craftsmen Training and Employment (DGET, 2005) underscores the findings of the earlier DGET (2003) and FICCI (2002) studies. The report sought to evaluate ITIs in the states of Punjab, Haryana and Rajasthan. Based on responses from

ITI principals, faculty members and students, the report concluded that course offerings and training in ITIs were rigid and did not respond to the changing demands of business and industry. The percentage of students in various trades who were not employed at the time of the survey (about a year after training) ranged from a little over 10 percent in a few trades to as high as 60-80 percent in most others. The Report identified collaboration between ITIs and industry/business as a critical factor in improving labor market outcomes of graduates of the training system. Greater public and private sector collaboration in training would enhance flexibility in responding to changing labor market skill needs, aid in continuous upgrading of courses, curriculum development and faculty support, and help mobilize resources, among other benefits.

## **2. Baseline Surveys**

This report is based on two surveys undertaken in 2006. One was a baseline institutional survey – the ITI Institutional Census (2006) – of all government managed and financed industrial training institutes (ITI) in India. The second was a tracer study – ITI Tracer Study (2006) – of past graduates from a sample of ITIs.<sup>1</sup>

### **The ITI Institutional Census (2006)**

The ITI Institutional Census (2006) was conducted in collaboration with the Ministry of Labour and Employment, Government of India (MoLE, GoI). The data for the survey was collected in 2006. All 1,882 public ITIs across all Indian states were sent a questionnaire through the MoLE. At the end of the data-collection exercise, 1,375 ITIs had sent information. This provided coverage of approximately 73% of the Indian population.

The survey collected data on the following aspects of ITIs:

- (a) Management: questions on staff profile, vacancies, and the existence of a Centre of Excellence (COE).
- (b) Finance: disaggregated details on the recurrent and recurrent budget and expenses of the ITI, and retained revenues.<sup>2</sup>
- (c) Students: total enrolment, enrolment by gender and social group.

---

<sup>1</sup> Both the base-line institutional database and the tracer study are intended to provide a base-line benchmark of the pre-project status of a substantial part of the public vocational training system in India. They will also provide the basis for establishing a monitoring and evaluation system for the sector under the project. A brief description of the project is provided in the Annex.

<sup>2</sup> While the survey sought to collect data on the financial aspects of ITIs, the actual data received was largely incomplete and of poor quality. This report therefore does not provide any discussion on the financial aspects of ITIs. Section A.4. of the Annex lists the data quality issues associated with the two surveys.

- (d) Teachers: composition of teaching staff, and their individual characteristics such as their education and training and experience, their status and rank in the ITI and the trades they teach.
- (e) Trades: profile of trades taught in the ITI such as type of trade, its duration and the numbers enrolled by gender, and internal efficiency indicators. Data on these trade related indicators was obtained for the years 2003-04, 2004-05 and 2005-06.<sup>3</sup>

### **ITI Tracer Study (2006)**

The objective of the tracer study was to assess the labor market outcomes of those who train in ITIs as well as to generate information on the quality of training and the usefulness and market value of trades learnt in ITIs from the receivers of such training.<sup>4</sup>

The field-work for the tracer study was done by the survey firm of A. C. Nielsen ORG MARG between the months of August and December 2006. Out of a population of 1,882 public ITIs, a sample of 400 representing nearly one-fifth of the total, was sought to be selected. The distribution of the sample across the states reflected the actual distribution of ITIs across the states.

The 400 ITIs were selected into the sample according to the following criteria:

- (a) All 100 ITIs wherein Centres of Excellence (COE) were established by GoI funding in the year 2004-2005 were selected into the sample.
- (b) The second set of 100 ITIs that had been identified by MoLE, GoI for the establishment of COEs in the year 2005-2006 were also selected into the sample.<sup>5</sup>
- (c) The total number of ITIs to be selected into the sample for each state was distributed across urban and rural areas according to the actual ratio of urban and rural ITIs in that state. After the ITIs in each state were selected according to criteria (a) and (b), the remaining rural and urban ITIs were randomly chosen sorted by size.

For the tracer survey, it was decided to interview a sample of 20 past graduates from each of the sample ITIs, giving a total sample size of 8000 graduates. Ten of the twenty past

---

<sup>3</sup> The base-line institutional data-base will be updated every year of the period of the project, and will be overseen by the Monitoring and Evaluation cells of the National Project Implementation Unit (NPIU) and the State Project Implementation Units (SPIU). It is expected that the base-line will eventually become integrated with a computer based management information system initially for the project and eventually for the entire vocational training sector of the country.

<sup>4</sup> The tracer study was also intended to provide one of the basic tools for monitoring and evaluation of the project. It will enable the establishment of clear links between the base-line status and the results of the interventions, namely providing a tool for demonstrating and measuring the progress achieved towards the development objective targets of improved labor market outcomes for ITI graduates.

<sup>5</sup> We will refer to the first and second set of 100 ITIs in this report as project ITIs. The remaining will be considered as non-project ITIs.

graduates were to be pass-outs from the year 2004, and the other ten were to be pass-outs from the year 2005. To reach an achieved sample of a total of 20 students, 16 graduates were randomly chosen from the eligible list of students for each of the two years, 2004 and 2005. The extra numbers were to add a buffer margin, in those cases where either it became infeasible to trace the sample graduate. Only those students who had passed their final examination, and were not repeating the examination (because they had been unable to clear it in a previous attempt) were considered eligible. This was done to reduce the extent of any bias introduced due to unobserved systematic differences between first-time successes, failures and repeaters.

The tracer study collected information on the following:

- (a) Personal details including information on the socio-economic background of the graduate.
- (b) Enrollment, trade characteristics, and time taken to complete training.
- (c) Employment history of the graduate from the time he/she passed out from the ITI.
- (d) Graduate's perceptions of the quality and usefulness of the trade(s) studied.
- (e) Aspects of training in ITIs that require enhancement and/or improvement.

At the end of the survey, data was collected from 374 ITIs giving a total sample size of over 7,144 past graduates.

### **3. Overview of ITI Performance**

In this section, we report on the main findings of the ITI Institutional Census (2006) along three dimensions: 1) management; 2) instructors; and 3) trades. We provide both a national picture and the state-wise performance of ITIs along these dimensions. Wherever possible we also indicate the differences between ITIs already selected into the project, and the rest.

#### **Management**

*Private Sector Participation in ITI Management:* Historically, the involvement of the private sector in the management of ITIs has been limited. The concept of an Institutional Management Committee (IMC) that would have representation from the private sector and the ITI faculty has been around for many years but had never been made a formal requirement. It was left to individual ITIs discretion to constitute one.<sup>6</sup> The role of IMCs was envisaged to ensure greater and more active involvement of industry in all aspects of training. They would also forecast emerging training areas, assess training needs, review new curriculum for relevance, approve faculty training and appointments of contract staff, and facilitate job placements of graduates.

---

<sup>6</sup> Under the VTI project, a functioning IMC is a key eligibility criterion for an ITI to participate.

According to ITI Institutional Census, 37 percent of ITIs<sup>7</sup> reported having IMC in place. An average IMC had been functioning for 2.7 years<sup>8</sup> (IMC age range was 0 to 11 years), had 10 members (range 0-27 people) with half of them being private sector representatives. The design of ITI Institutional Census (2006) did not give the possibility to judge the quality of private sector involvement in IMC functioning.<sup>9</sup> In the sub-sample of project ITIs, 59 percent had IMC in place, 2.5 percent did not have IMC and 38.5 percent did not answer the question.<sup>10</sup>

Similar to the concept of IMCs, that of Centers of Excellence (CoE) has also been around for a number of years, though it was never made a formal requirement, and has recently gained urgency with the felt need to upgrade skills of those entering the labor market. Within their specified trade sectors, CoEs were meant to provide courses that meet the need for high quality craftsmen by the dominant local industries. The objective of CoEs is to produce a multi-skilled workforce of world class standard.<sup>11</sup> In the baseline survey only 85 ITIs, 6 percent of the total sample, reported that they have CoEs, 281 indicated that they did not have CoE, and 1009 ITIs did not answer the question. It is probably safe to assume that majority of the ITIs that did not answer the question also did not have CoE, since CoE concept has been formally introduced only very recently. The average age of CoE was 3.6 years<sup>12</sup> (median 1 year, or alternatively, the median year of CoE establishment was 2005).

***ITI Staff Composition:*** A total of 1,308 ITIs provided detailed information about 16,816 staff members<sup>13</sup>. Table 3.2 shows the composition of ITI staff summed across all ITIs that responded to the ITI Census. Of all ITI staff, 90 percent were vocational instructors, 3.5 percent were contract instructors, 6 percent were management personnel (including principals and vice principals), and less than one percent was non-teaching staff. The gender composition of teaching staff was similar across states, by ITI size and across project & non-project ITIs. Women made up less than 12 percent of the ITI staff and 11.71 percent of all vocational instructors. Scheduled caste and Schedule Tribe (SC/ST) staff constituted around 21 percent of ITI staff.

---

<sup>7</sup> In fact, 514 ITIs reported having IMC in place, 131 did not have IMC. The rest, 730, did not answer the question. We assumed that if ITI did not answer the question, it did not have IMC. However, when MIS system collects ITI information in the future, the rules for answering the question should be very clearly specified so that missing values are not allowed.

<sup>8</sup> ITIs were asked to report the year of IMC establishment, we calculated the age of IMC using the following formula: IMC age=2006- year of IMC establishment

<sup>9</sup> Future editions of the institutional census will include questions on the quality of private sector involvement in IMC functioning.

<sup>10</sup> This should not be interpreted as project ITIs not complying with the requirement of having a formally constituted IMC. Project ITIs in this report both those that have been exposed to the intervention (the first 100 ITIs) and those that have been identified for the next phase of the intervention (the second 100 ITIs).

<sup>11</sup> The VTI project provides ITIs the option to establish CoEs. These will introduce one-year multi-skilling courses, followed by another year with advanced/specialised modular courses by adopting an industry-wise cluster approach, and with multi-entry and multi-exit provisions

<sup>12</sup> ITIs were asked to report the year of CoE establishment, we calculated the age of CoE using the following formula: CoE age=2006- year of CoE establishment.

<sup>13</sup> Arunachal Pradesh and Jharkhand did not provide any piece of detailed information about staff members.

**Table 3.2 Distribution of ITI staff by position, gender and social status**

Position	Total		Gender		Social Status			
	Number	%	Males	Females	SC	ST	OBC	General
Principal or head of institution	721	4.5	690	31	122	40	234	318
Vice principal	231	1.4	215	16	42	16	54	116
Vocational instructor	14,514	89.9	12,813	1,701	2,201	835	4,930	6,413
Contract staff	564	3.5	430	134	60	32	138	312
Non-teaching staff	106	0.7	85	21	33	0	15	58
<b>Total</b>	<b>16,136</b>	<b>100</b>	<b>14,233</b>	<b>1,903</b>	<b>2,458</b>	<b>923</b>	<b>5,371</b>	<b>7,217</b>

Source: ITI Institutional Census (2006)

**Instructors Characteristics:** According to the ITI Census, a typical ITI had 28 staff positions and enrolled 119 students (the median ITI by size enrolled only 64 students). On average, the teaching faculty consisted of 14 vocational instructors, 1 contract instructor and 1 guest lecturer from the private sector; the average number of unfilled staff vacancies was 7 instructors. A typical ITI instructor was 42.5 years old. Female instructors on average were slightly younger than male, at 39.6 years. An average instructor's tenure with the ITI was 5.9 years; there is almost no difference between male and female instructor length of tenures. About one quarter of the staff – 25.1 percent, attended some form of staff training in the past 3 years<sup>14</sup>.

#### *Educational Qualifications*

The educational and training qualifications of instructors, as well as relevance of their qualifications updated through the instructor training system, are critical for students' performance in ITIs and in the labor market. Table 3.3 presents the educational qualifications of vocational instructors by gender and by state. Across all ITIs, 49.4 percent of instructors had an educational qualification of Grade 12 or less, 16.7 percent held Bachelor's degrees, and 33.8 percent had Master's or a higher degree or a Polytechnic diploma. A larger share of female instructors compared to male instructors. – 60.5 percent, had a graduate degree.

States vary widely in the share of vocational instructors with higher education qualifications. States such as Delhi, West Bengal, Karnataka, Rajasthan, and Kerala had more than 90 percent of teaching staff with Bachelor's degrees and above. Punjab, Andhra Pradesh and J&K, on the other hand, had more than 70 percent of their instructors with only a Grade 12 education or less.

<sup>14</sup> If information on instructor training was missing, we assumed that instructor did not receive any training.

**Table 3.3 Proportion of teachers with certain educational level by gender and state**

<i>Educational level</i>	$\leq 12$ years	Bachelors	Masters and above, or Polytechnic diploma
<b><i>Gender</i></b>			
Female	39.5	18.3	42.2
Male	51.0	16.5	32.5
<b><i>State</i></b>			
Delhi	0.9	6.5	92.6
West Bengal	1.2	5.3	93.4
Karnataka	1.3	30.5	68.1
Rajasthan	3.1	18.8	78.2
Kerala	7.1	14.8	78.1
Gujarat	10.5	52.6	36.8
Himachal Pradesh	43.3	15.4	41.4
Haryana	45.3	10.5	44.3
Madhya Pradesh	47.7	14.4	37.9
Goa	55.9	13.0	31.1
Chhattisgarh	56.1	12.5	31.3
Sikkim	60.0	20.0	20.0
Tamil Nadu	61.0	26.5	12.6
Uttar Pradesh	61.3	19.8	18.9
Uttaranchal	62.5	16.4	21.2
Maharashtra	64.6	18.2	17.2
Orissa	66.5	21.8	11.7
Bihar	66.9	11.7	21.4
Punjab	70.6	9.9	19.5
Andhra Pradesh	72.5	16.0	11.4
J & K	75.1	22.4	2.5
<b>Total</b>	<b>49.4</b>	<b>16.7</b>	<b>33.8</b>

Source: ITI Institutional Census (2006)

### *In-service Training*

One mechanism by which up-gradation of quality in ITIs takes place is through improvement in the quality of vocational instructors via regular in-service instructor training. According to the ITI Institutional Census (2006), only 25.1 percent of the instructors had attended any training in the past 3 years. On average more females, 28.6 percent, attended training as compared to males with 24.6 percent. ITIs that have been already upgraded had a larger proportion of staff, 29 percent, that underwent training than non-project ITIs with 23 percent. Also, small ITIs had a larger proportion of staff having attended training compared to large ITIs, 27.7 vs. 23.9 respectively. Instructors with higher levels of education were more likely to undergo training in the last 3 years: 17 percent of instructors with a higher secondary or less certification had attended any training as compared to 26 percent of instructors with Bachelor's degree, and 24 percent with Master's and above or Polytechnics diplomas.

State-wise, as Table 3.4 suggests, there is a significant variation in the proportion of staff that underwent training in the past 3 years. For example, in Karnataka, Tamil Nadu and Kerala more than half of teachers had undergone training; whereas in Bihar, Punjab, J&K, Delhi and West Bengal, only less than 10 percent had done so.

**Table 3.4 Proportion of staff that attended training within last 3 years**

State	%	State	%
Karnataka	76.4	Maharashtra	17.3
Tamil Nadu	55.8	Uttaranchal	15.9
Kerala	50.5	Chhattisgarh	13.2
Sikkim	41.7	Madhya Pradesh	10.7
Orissa	35.9	Andhra Pradesh	10.7
Goa	26.6	Uttar Pradesh	10.4
Haryana	25.6	Bihar	9.9
Gujarat	25.2	Punjab	6.6
Himachal Pradesh	19.7	J & K	2.5
Rajasthan	18.9	Delhi	1.9
		West Bengal	0.9

Source: ITI Institutional Census (2006)

#### *Unfilled Instructor Vacancies*

A large proportion of unfilled instructor positions is a pervasive characteristic of public ITIs. According to the ITI Census (2006), a typical ITI in 2005 had 25.7 percent of instructor positions unfilled against sanctioned positions.<sup>15</sup> Large ITIs<sup>16</sup> had a smaller proportion of unfilled instructor vacancies, 22.7 percent, as compared to the smaller ITIs with 31.2 percent.<sup>17</sup>

State-wise data on unfilled instructor vacancies is set out in Tabel 3.5. Along with a high mean, there is substantial variation in proportion of unfilled instructor vacancies across states. Except for a few states like Goa (2.8 %), Arunachal Pradesh (8.3%), Kerala (11%) and Himachal Pradesh (11.9%), most states had a fifth or more instructor positions vacant; and some states like Uttaranchal (51.4%) and Bihar (61.5%) had more than half the instructor positions unfilled<sup>18</sup>.

<sup>15</sup> Instructor vacancy rate = ( # of unfilled instructor vacancies \*100) / (# of unfilled instructor vacancies + # of instructors + # of contract teachers + # or private sector guest lecturers)

<sup>16</sup> Large ITIs are those that enrolled median or more number of students (median = 64 students)

<sup>17</sup> Proportion of unfilled instructor vacancies was equal to 22 percent in project participating ITIs<sup>17</sup> and 26.1 percent in ITIs that did not participate in the project.

<sup>18</sup> Note: Delhi and Orissa did not answer section about number of staff and vacancies, J&K did not answer question about vacancies, Rajasthan and Punjab did not answer question about number of instructors in 2005.

**Table 3.5 Proportion of unfilled instructor vacancies by state**

State	%		State	%
Bihar	61.5		Madhya Pradesh	26.9
Uttaranchal	51.4		Tamil Nadu	23.7
Uttar Pradesh	41.5		Karnataka	21.0
Sikkim	36.8		Maharashtra	16.5
Chhattisgarh	36.0		Himachal	11.9
Andhra Pradesh	35.9		Kerala	11.0
Gujarat	27.9		Arunachal Pradesh	8.3
Haryana	27.1		Goa	2.8
<b>India</b>	<b>25.7</b>			

*Source: ITI Institutional Census (2006)*

**Trades:** According to the ITI Institutional Census (2006), for the 2003-2004 entering class 1,281 ITIs offered 9,209 courses, 4,754 of which were one year courses, and 4,455 were two year courses<sup>19</sup>. In what follows, we report only on the two-year courses.

An average ITI training course had 24 sanctioned seats (median was 16 seats) with an average of 21 students actually being enrolled (median was 18 enrolled students). There was substantial variation in the number of sanctioned seats and actual enrollment across courses: the number of sanctioned seats ranged from 0 to 1,140; and the number of students enrolled ranged from 0 to 564. ITIs that have already been selected into the project tended to have larger class sizes in courses than non project ITIs: the average number of sanctioned seats for these ITIs was 30 versus 23, and average number of enrolled students at the beginning of the course was 26 versus 20, respectively for the two.

Table 3.6 presents course enrollment capacity statistics by state. Smaller states, such as Sikkim, Uttaranchal, Goa, and J&K, on average tend to have fewer sanctioned seats allocated per course, 16-17 seats, as compared to such states as Kerala, Gujarat, or Tamil Nadu with 28-35 sanctioned seats. Number of students enrolled at the beginning of the course also vary from state to state with the lowest being J&K, 10 students per course on average, and the highest Tamil Nadu, 31 students per course.

The averages might be misleading to some extent since we are pooling together all the courses for each state. To address this issue we created an indicator for oversubscribed courses. A course is considered oversubscribed if the ratio of enrolled students at the beginning of the course to the number of sanctioned seats is greater than or equal to 1. Using this indicator, one would be able to judge which courses are considered “more desirable” by students and which are not so popular or outdated. There are many reasons why students select one course over another. Some of the considerations, such as

---

<sup>19</sup> Note: course duration was reported in months. For simplification purposes by 1 year courses we mean courses duration of which was up to 12 months, 2 year courses are the courses with duration more than 12 months.

employment possibility and wage considerations, may determine the “popularity” of the course and be reflected in the course oversubscription indicator

**Table 3.6 Course Enrollment Capacity by State**

State	# Courses	Sanctioned seats	Enrolled students at start	Proportion of oversubscribed courses
Andhra Pradesh	352	26	23	0.59
Bihar	77	23	18	0.32
Chhattisgarh	132	23	19	0.57
Delhi	111	25	23	0.68
Goa	49	16	16	0.65
Gujarat	53	35	27	0.42
Haryana	231	19	20	0.91
Himachal Pradesh	90	17	17	0.83
J & K	102	17	10	0.30
Karnataka	288	25	24	0.72
Kerala	219	28	26	0.73
Madhya Pradesh	195	21	19	0.61
Maharashtra	1,292	23	20	0.61
Orissa	111	24	21	0.59
Punjab	187	29	18	0.28
Rajasthan <sup>20</sup>	169	.	16	
Sikkim	3	16	20	0.67
Tamil Nadu	237	35	31	0.63
Uttar Pradesh	538	24	21	0.48
Uttaranchal	19	16	19	0.82
<b>Total</b>	<b>4,455</b>	<b>24</b>	<b>21</b>	<b>0.60</b>

Source: ITI Institutional Census (2006)

As table 3.6 suggests, on average 60 percent of the courses were oversubscribed with considerable state-wise variation from 28-32 percent in Punjab, J&K and Bihar, to 91 percent in Haryana. Across state variation in the share of courses oversubscribed may also reflect labor market opportunities in the particular state. For example, in a state with a more developed industrial sector more students may choose to enter ITIs expecting better employment opportunities or higher salaries if they obtain NCVT certification. Whereas, in states with no industry, difference in pay for certified and non-certified youth might be negligible, therefore, there would be no incentives for young people to enter ITI.

There was almost no difference between project and non-project ITIs courses, with 60 percent in each category being oversubscribed. Small ITIs<sup>21</sup> had 64 percent oversubscribed classes as compared to 59 percent in large ITIs. This difference is natural, since large ITIs are more likely to have a variety of courses as compared to the small ones.

<sup>20</sup> Rajasthan did not provide information on sanctioned seats.

<sup>21</sup> ITI is small if it has less than median (64) students, large if it has 64 or more students.

To investigate the courses' differences further, we also report on the types of course offered by trade. ITIs offered 76 different types of trades (see Annex A.1) for the 2003-2004 entering class. Around a third of the trades were offered by 10 institutions or more; half of the trades were offered only by 3 or fewer institutions. The most offered<sup>22</sup> trades were fitter, electrician, wireman, electronic mechanic, motor vehicle mechanic, turner, radio and TV mechanic, machinist, civil and mechanical draughtsman, and refrigeration and air conditioning mechanic.

Trade offerings reflect only the supply-side perspective. The oversubscription ratio, on the other hand, shows students' perspective on the usefulness of the trade. As shown in Annex 3.1, the following trades had oversubscription ration equal to 1: watch and clock maker, millwright, cutting and tailoring, plumber, sheet metal worker, and several mechanic trades. Courses that were most offered – by 100 or more institutions - were 50 to 72 percent oversubscribed.

***ITI internal efficiency:*** Table 3.7 presents estimates of the internal efficiency of ITIs by students' demographic characteristics. The indicators of internal efficiency are the proportions of enrolled students that completed the training course and took the trade test, or that successfully passed and obtained trade certification<sup>23</sup>. These estimates are for the student enrolled in the 2003-04 year in two year courses. Subsequent cohorts had not completed training and trade tests by the time of the survey for these courses. In TableA.2. in the Annex, we provide state-wise and gender-wise of pass rates for those taking the test for those who enrolled in either a 1 year or less/2 years or more course in 2003.

On average, 78 percent of the two-year program students took the trade test, but only 61 percent passed it. While females in one-year programs were more successful in both taking and passing the trade test than their male counterparts, the difference between them was negligible for the two-year program. A higher share of SC (79%) and ST (84%) students enrolled and took and passed the test compared to the average (66% for SC and 65% for ST respectively).

---

<sup>22</sup> Trades that were offered by 100 and more institutions.

<sup>23</sup> The definition of students that passed the test would require clarification in the next monitoring round. In the current survey, some trades had proportion of students that passed test more than 100 % (baseline is number of students that were enrolled in the beginning). Such numbers may mean that principals when responding do not give information only about the starting cohort, but about all the students received certification in particular year. All the students that received certificate may include students who re-take the test. Therefore, in the next monitoring round students from the starting cohort that receive certificate should be monitored separately from everyone else.

**Table 3.7 Indicators of ITI Internal Efficiency indicators**

	Proportion of enrolled students taking trade test (%)	Proportion of enrolled students passing trade test (%)
Males	79	61
Females	85	74
Scheduled Castes	79	66
Scheduled Tribes	84	65
All Graduates	78	61

Table 3.8 presents internal efficiency indicators by state. As expected, there is huge variation in drop-out and pass rate or successful completion<sup>24</sup> rates by state. Slower growing states such as J&K, Himachal Pradesh, Rajasthan, and Bihar, have lower drop-out rates of 3-13 percent; whereas, fast growing states, as Karnataka, Delhi, Haryana, Gujarat, tend to have higher drop-out rates of 20-30 percent. This fact may be explained by better employment opportunities in fast growing states. Students might be recruited by employers before completing training and receiving certification. The short-term benefit of taking the job before being certified potentially can have negative long-term implications. Predictions based on NSS 60 data suggest that students that obtained NCVT certificate have on average 10 percent higher earnings over the life-time than those without certification *ceteris paribus*<sup>25</sup>.

---

<sup>24</sup> Completion is successful if student receives a NCVT certificate.

<sup>25</sup> See PAD, Annex 9.

**Table 3.8 Students' Performance by State**

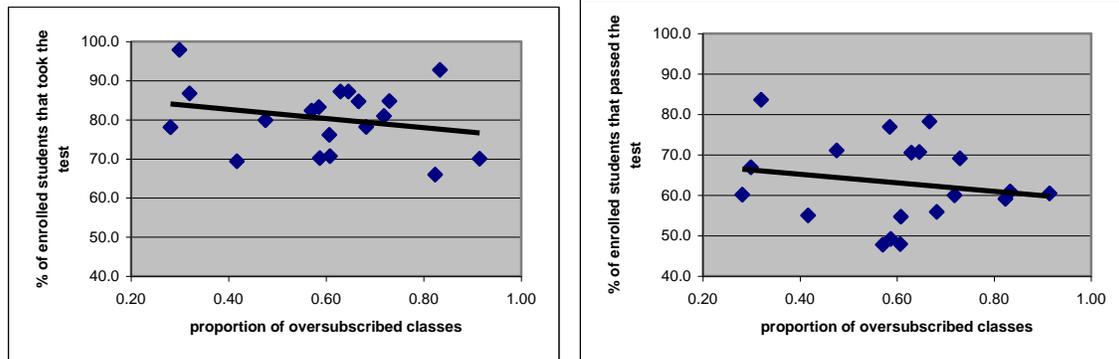
State	proportion of oversubscribed classes	# of enrolled students at start	# of students that took test	# of enrolled students that passed test	% of enrolled students that took test	% of enrolled students that passed test
Bihar	0.32	17.6	15.5	16.2	86.8	83.6
Sikkim	0.67	19.7	16.3	15.0	84.7	78.3
Orissa	0.59	20.8	17.3	15.5	83.2	77.0
Uttar Pradesh	0.48	21.2	17.1	15.5	79.9	71.1
Goa	0.65	15.8	13.8	11.0	87.2	70.7
Tamil Nadu	0.63	30.6	26.7	21.4	87.2	70.6
Kerala	0.73	26.2	22.2	18.2	84.8	69.1
J & K	0.30	10.3	9.8	7.0	97.9	66.9
Rajasthan		16.3	14.4	10.1	88.3	62.2
Himachal Pradesh	0.83	16.7	15.4	10.1	92.8	61.0
Haryana	0.91	20.3	14.0	11.9	70.0	60.5
Punjab	0.28	17.7	13.6	10.1	78.1	60.1
Karnataka	0.72	23.9	19.5	14.6	80.9	60.0
Uttaranchal	0.82	19.3	12.7	11.4	65.9	59.1
Delhi	0.68	22.7	18.1	12.9	78.1	55.9
Gujarat	0.42	26.8	19.7	15.1	69.4	55.0
Maharashtra	0.61	19.7	13.8	10.7	70.7	54.7
Andhra Pradesh	0.59	22.8	16.7	11.9	70.2	49.2
Madhya Pradesh	0.61	19.0	14.5	9.2	76.2	47.9
Chhattisgarh	0.57	19.3	15.2	8.8	82.3	47.8
<b>Total</b>	<b>0.60</b>	<b>21.0</b>	<b>16.4</b>	<b>12.9</b>	<b>77.8</b>	<b>60.6</b>

Source: ITI Institutional Census (2006)

Successful completion rate varies from 48 percent in Chhattisgarh and Madhya Pradesh to 77-84 percent in Orissa, Sikkim, and Bihar. It is also noteworthy that fast-growing states, such as Gujarat, Delhi, Karnataka, and Haryana, do not have very high success rates, ranging between 55-61 percent.

The proportion of students who took the test is negatively and significantly correlated with share of oversubscribed courses (see Figure 3.1). In other words the higher oversubscription rate is the more students drop out. This could be due to congestion and reduction in training quality and/or more opportunity for students in these 'popular' courses. Even though proportion of oversubscribed classes is negatively correlated with percent of students that received certification, this relationship is not significant suggesting that other things might come into play, for example quality of teachers, students abilities etc.

**Figure 3.1 Internal efficiency indicators and course oversubscription correlations**



#### **4. Labor Market Outcomes and Satisfaction with ITI Training of ITI Pass-outs**

This section reports on data from the ITI Tracer Study (2006) on labor market outcomes, and perception of ITI pass-outs on the quality and usefulness of training received. The study is the first nationally representative tracer-study of ITI pass-outs in India.

##### *Demographic Characteristics of the Employed*

Table 4.1 reports several employment outcomes of tracer study respondents, focusing on the 2004 graduate cohort. It estimates that 65 percent of 2004 graduates were unemployed in 2006, where “unemployed” is defined as not working and looking for work. 62 percent of males and 78 percent of females that graduated from ITIs in 2004 were still unemployed in 2006. Of the 2004 graduating cohort, only 25 percent found work within one year - it took 4.8 months for the average 2004 graduate to find the first job<sup>26</sup>. Male pass-outs did significantly better than females, with 39 percent finding a job within 12 months as compared to only 19 percent of females. Finally, SC/ST graduates appear to experience higher unemployment rates as compared to OBC or general social groups. Moreover, only 29 percent of ST pass-outs find their first job within a year after completing training as compared to 33-35 percent among other groups.

<sup>26</sup> We assume that if people are self-employed or work for family business, they found their first job immediately. Under this assumption if information about time to first job for self-employed or working for family business is missing, we substituted missing information with 0 month.

<b>Table 4.1 Distribution of Time to First Job for All Graduates</b>					
Year of graduation	Proportion unemployed at time of survey	Proportion (%) of graduating cohort finding first job within:			Average months to first job
		6 months	12 months	18 months	
<b>All Graduates</b>					
2004	65	25	34	34	4.8
2005	74	21	26	27	4.0
<b>Males</b>					
2004	62	29	39	40	5.0
2005	72	24	30	31	4.1
<b>Females</b>					
2004	78	16	19	19	3.5
2005	84	13	14	14	2.8
<b>Scheduled Caste</b>					
2004	66	26	35	36	5.1
2005	76	21	25	26	3.9
<b>Scheduled Tribe</b>					
2004	71	22	29	30	4.8
2005	83	15	20	21	4.6
<b>Other Backward Classes</b>					
2004	65	25	33	34	4.9
2005	73	23	28	28	3.9
<b>General</b>					
2004	63	26	35	35	4.6
2005	74	21	26	26	3.9

Source: ITI Tracer Study (2006)

### *Continuing education, training and apprenticeship*

Nearly 40% of pass-outs, of both years 2004 and 2005, went for further training or education after passing out of ITIs. Of these nearly half pursued an apprenticeship and another quarter pursued some form of further education. Of the remaining most pursued some form of training and a small share enrolled in polytechnics. The pattern was similar across the pass-outs of both years, and is shown in Table 4.2 below.

**Table 4.2: Further Education of ITI Pass-outs**

	Percentage Shares (%)		
	2004	2005	Total
Further Education			
Polytechnic	0.85	1.49	1.17
Apprenticeship	20.15	20.28	20.21
Other Education	12.18	11.27	11.73
Other Training	5.58	4.36	4.98
None	61.23	62.6	61.9

Source: ITI Tracer Study (2006)

*Employment and Wages*

Table 4.3 below provides the employment rate and time taken to find employment of ITI pass-outs of the years 2004 and 2005. At the time of the interview, the 2004 pass-outs had had more than 2 years and the 2005 pass-outs had had about 18 months of being in the labor market. 65% and 74% of the 2004 and 2005 pass-outs were unemployed at the time of the interview. 25% of the former and 21% of the latter found jobs within 6 months of passing out from ITIs. Another 34% of the 2004 pass-outs and 27% of the 2005 pass-outs found jobs within a year of passing out, and similar shares found jobs within 18 months. The average number of months taken to find first job was between 4.8 months for the 2004 pass-outs and between 4 months for the 2005 pass-outs.

**Table 4.3: Employment Rate and Time to First Employment of ITI Pass-outs**

Year of passing out	Share unemployed	Share that find job within 6 month	Share that find job within 12 month	Share that find job within 18 month	Number of month to find first job
2004	65	25	34	34	4.8
2005	74	21	26	27	4.0
Total	70	23	30	31	4.4

*Source: ITI Tracer Study (2006)*

As we can see from Table 4.4 below, nearly 80% of pass-outs who are employed find wage employment in the private sector. Among the 2005 pass-outs the remaining are equally distributed among wage employment in the public sector, in self-employment or own business and in helping out with the family business. Among the 2004 pass-outs 5% each are in self-employment or own business and family business, whereas a slightly higher share of 7% are employed for wages in the public sector.

**Table 4.4: Sector of Employment by Year**

Sector of Employment	Year		Total
	2004	2005	
Public Sector	7.01	6.18	6.67
Private Sector	82.29	77.96	80.5
Self-employed/Employer	4.92	6.18	5.44
Helping Parents	4.92	6.18	5.44

*Source: ITI Tracer Study (2006)*

## Wages

The average wages<sup>27</sup> earned by ITI pass-outs range from Rupees 1,351 to Rupees 3,819 (see table 4.5). The highest wages were earned by those employed by the public sector, followed by the private sector, and those in self-employment. The lowest wages were earned by pass-outs helping out in their parents' business. Pass-outs from the year 2004 who are employed earn more on the average compared to 2005 pass-outs. Some of this difference could be due to the one additional year of experience in the labor market of the former compared to the latter. The largest difference was for those who were employed in the public sector – 2004 pass-outs earned around Rupees 1,400 more than the 2005 pass-outs. There are small differences between the wages of the 2004 and 2005 pass-outs in the private sector and in self-employment. Pass-outs of the year 2004 who help out in family business earned Rupees 291 more than their 2005 counterparts.

On the average, employed female graduates earned less than males. The average difference was about Rupees 390 for 2004 employed pass-outs and Rupees 350 for 2005 employed pass-outs. Females and males alike earn the most in the public sector and the least when they help out their parents in business. The greatest difference between male and female wages was in the public sector – 2004 female pass-outs earned nearly Rupees 2,000 less than their male counterparts.

**Table 4.5: Average Normalized Monthly Wages (in Rupees) of Employed Pass-outs by Year**

Gender	Average normalized monthly wage of employed graduates 2004, Rupees				
	Public sector	Private sector	Self-employed	Helping parents in business	Total
Female	2,014	2,053	2,096	1,540	2,045
Male	4,010	2,359	1,924	1,648	2,433
Total	3,819	2,327	1,959	1,642	2,392
Gender	Average normalized monthly wage of employed graduates 2005, Rupees				
	Public sector	Private sector	Self-employed	Helping parents in business	Total
Female	2,347	2,043	1,250	1,173	1,897
Male	2,467	2,268	2,130	1,381	2,248
Total	2,464	2,246	1,930	1,351	2,212

Source: ITI Tracer study (2006)

In general, in public and private sectors of employment and for 2004 pass-outs, those belonging to the general category earned the most and those belonging to the ST category earned the least. In self-employment, SC had the highest wages and ST earned the most when they helped out their parents in business. The largest difference in wages however, was between the earnings of general category pass-outs in the public sector and everybody else. The former earned on the average Rupees 6,146 which was twice or more than the average

<sup>27</sup> We normalized wages based on the assumption that on average a person works 22 days a month. Apprentices excluded from labor force.

wages earned by the other social groups in public employment. The results for wages of the employed 2005 pass-outs are more mixed. General category students earned the most in all sectors of employment except when they helped out in family business. The differences between the wages of SC, ST and OBC, presented in table 4.6, in all sectors of employment were small, with the exception of public sector employment where the average earnings of the SC is only Rupees 815 compared to the overall average of Rupees 2,464, and the average wages are the highest for ST pass-outs, being nearly Rupees 350 more than the overall average.

**Table 4.6: Average Normalized Monthly Wages (in Rupees) of Employed Pass-outs by Year, by Social Group**

Social Group	Average normalized monthly wage of employed graduates 2004, Rupees					Average normalized monthly wage of employed graduates 2005, Rupees				
	Public sector	Private sector	Self-employed	Helping parents in business	Total	Public sector	Private sector	Self-employed	Helping parents in business	Total
SC	2,595	2,358	2,045	2,142	2,355	815	2,201	1,149	1,499	2,112
ST	2,603	1,905	917	3,960	1,996	2,851	2,105	1,467	1,376	2,181
OBC	2,858	2,214	1,984	1,862	2,244	2,023	2,083	1,590	1,298	2,031
General	6,146	2,497	2,012	1,317	2,629	2,827	2,500	2,395	1,320	2,482
Total	3,819	2,327	1,959	1,642	2,392	2,464	2,243	1,930	1,351	2,210

Table 4.7 below shows the average wages earned by employed 2004 and 2005 pass-outs by sector of work and household socio-economic status. Among the 2004 pass-outs, those belonging to Above Poverty Line (APL) households earned the most when employed in the public sector, the private sector and among the self-employed. In these three sectors, across the economic classes Below Poverty Line (BPL) earned the least. In the category of those who helped in the family business, the BPL pass-outs earned the most. They also earned the highest wages among all BPL employed in various sectors, including more than Antyodaya Anna Yojana (AAY) in private sector and self-employment. Among the 2005 pass-outs too, those belonging to APL households earned the most in all the sectors except for self-employment where the highest wages were earned by AAY household pass-outs.

**Table 4.7: Average Normalized Monthly Wages (in Rupees) of Employed Pass-outs by Year, by Socio-economic Status**

Socio-economic status	Average normalized monthly wage of employed graduates 2004, Rupees					Average normalized monthly wage of employed graduates 2005, Rupees				
	Public sector	Private sector	Self-employed	Helping parents in business	Total	Public sector	Private sector	Self-employed	Helping parents in business	Total
BPL	1,931	1,982	1,019	2,400	1,975	2,073	2,015	1,143	998	1,977
AAY	3,199	2,169	1,247	1,570	2,185	1,656	2,429	3,667	1,012	2,365
APL	4,238	2,488	2,080	1,474	2,568	2,830	2,308	1,964	1,432	2,278
Total	3,831	2,329	1,959	1,642	2,393	2,464	2,245	1,930	1,351	2,212

Source: ITI Tracer Study (2006)

### *State-wise Labor Market Outcomes*

There is a great deal of variation in the labor market outcomes of pass-outs from ITIs on all our indicators of external efficiency.

#### *Percentage of pass-outs finding employment within 12 months of graduation*

The share of pass-outs that find employment within 12 months of graduation ranged from 9% in Bihar to 54% in Rajasthan. The employment likelihood of ITI pass-outs seemed to be particularly poor in Bihar, Chattisgarh, Orissa and Uttar Pradesh as less than 20% of ITI pass-outs were employed within a year. The better performing states were Delhi, Himachal Pradesh, Karnataka, Kerala, Gujarat, Rajasthan and Tamil Nadu where 40% or more of the ITI pass-outs were employed within 12 months. Table 4.8 sets out the employment outcomes of ITI pass-outs by state, gender and social group.

The labor market outcomes for female pass-outs were on the average worse compared to their male counterparts – in only 2 states – Andhra Pradesh and Orissa, was the share of female pass-outs finding jobs within the year above males. In Bihar and Chattisgarh, the shares were abysmally low being less than 1% and 5% respectively. In most of the other states, the shares varied from a fifth to three quarters female- compared to male-pass-outs find jobs within 12 months. There is a lot of variation in the employment rate by social group across states. No clear pattern emerges with SC/ST/OBC doing better than the general caste in some states and worse in others.

**Table 4.8: State-wise share of ITI pass-outs finding jobs within 12 months of completing training**

State	Female	Male	SC	ST	OBC	General	Total
Andhra Pradesh	44%	42%	51%	44%	42%	29%	42%
Assam	20%	43%	42%	33%	43%	41%	41%
Bihar	0%	10%	6%	25%	8%	16%	9%
Chhattisgarh	5%	15%	17%	12%	10%	21%	13%
Delhi	44%	51%	33%	0%	67%	68%	50%
Goa	10%	29%	0%	.	25%	25%	24%
Gujarat	9%	46%	33%	28%	40%	47%	39%
Haryana	25%	37%	35%	29%	25%	36%	33%
Himachal Pradesh	22%	59%	41%	40%	39%	40%	40%
Jammu & Kashmir	0%	51%	78%	0%	0%	31%	35%
Jharkhand	.	26%	30%	20%	27%	22%	26%
Karnataka	23%	56%	31%	88%	48%	29%	44%
Kerala	22%	55%	40%	.	32%	55%	43%
Madhya Pradesh	16%	32%	36%	32%	31%	26%	29%
Maharashtra	10%	21%	16%	11%	14%	22%	16%
Orissa	20%	14%	8%	50%	25%	12%	16%
Punjab	14%	46%	37%	20%	34%	32%	34%
Rajasthan	39%	56%	45%	47%	51%	65%	54%
Tamil Nadu	20%	48%	33%	50%	45%	39%	42%
Uttar Pradesh	19%	22%	29%	4%	22%	19%	21%
Uttaranchal	5%	34%	19%	20%	15%	32%	27%
West Bengal	4%	27%	18%	33%	14%	26%	24%
Total							<b>32%</b>

Source: ITI Tracer Study (2006)

### *State-wise Wages*

Table 4.9 shows the wages of the currently employed in the tracer study across states by gender for the 2005 pass-outs. The average normalized monthly wages for India as a whole was Rupees 2,242. There is significant variation across states – wages varied from Rupees 1,701 in Chhattisgarh to Rupees 5,221 in Goa. In general, wages for females were lower than male wages. On an average, females earnings were 84% of male earnings.

**Table 4.9: State-wise normalized monthly earnings corrected for number of days by gender for 2003 entering class (2005 pass-outs)**

State	Male	Female	Total
Andhra Pradesh	1,730	1,613	1,724
Assam	2,196		2,196
Bihar	1,898		1,898
Chhattisgarh	1,442	2,090	1,701
Delhi			
Goa	5,588	3,385	5,221
Gujarat	1,959	1,760	1,953
Haryana			
Himachal Pradesh	2,877	3,300	2,916
Jammu & Kashmir	2,674		2,674
Jharkhand	2,371		2,371
Karnataka	2,260	1,927	2,209
Kerala	2,746	2,738	2,744
Madhya Pradesh	2,083	1,316	2,003
Maharashtra	2,431	1,732	2,293
Orissa	2,310	1,539	1,979
Punjab	2,378	2,088	2,349
Rajasthan	2,087	880	2,069
Tamil Nadu	1,921	1,462	1,844
Uttar Pradesh	1,920		1,920
Uttaranchal	2,422		2,422
West Bengal	2,242		2,242
Total			2,421

Source: ITI Tracer Study (2006)

*ITI Pass-outs perception of quality and usefulness of training received*

The tracer study also collected information from the ITI pass-outs on their perception of how useful their training was which areas in their view required improvement. Despite difficulty finding employment, pass-outs tended to provide relatively positive feedback on training provided by ITIs. On the suitability and employment potential of the trade acquired in the ITI, 89 percent of pass-outs responded that the trade was reasonably or very useful; 91 percent of graduates also rated the quality of training received from ITIs as good or excellent. Of those who found employment, 57 percent reported that they worked in the trade in which they were trained. 9 percent were employed in a different trade than the one for which they were trained, but used the skills they acquired in ITI training; 7 percent worked in a different trade where ITI training was only of limited use.

The remaining 27 percent reported that ITI training did not help at all in the work they were doing. In the sub-section below, we provide a more detailed description of ITI pass-outs perception of quality and usefulness of training received.

*Worked in the trade for which training acquired:* As has already been documented above, only 32.5% of ITI pass-outs had any experience of employment. Of this category, 56% worked in the trade in which they had acquired training; 9.3% worked in a trade or area where their training was useful to them; another 6.7% found some use of their training in a related trade and the remaining 2.7% did not find any use for their trade.

These responses were similarly distributed across male and female ever employed pass-outs. Across the different social groups, the share of ever employed SC and ST who worked in a trade they were trained in was lower than the average of the entire sample – 51% and 48% respectively, and a higher share of the two groups - nearly 34%, reported not finding any use for their training. A higher than the average share of OBC pass-outs – 63% - on the other hand reported finding employment in the trade they had trained for. 53% of the ever employed pass-outs belonging to BPL households compared to 58% of those belonging to APL households reported working in the trade they were trained in.

*Suitability and employment potential of trade acquired in ITI:* Nearly 90% of all pass-outs whether ever employed or never worked, said that they thought that the suitability and employment potential of the trade they had acquired training in was very or reasonably useful. 9.5% did not find their training very useful, and only a little more than 1% did not find the training useful at all. These responses were nearly similar across genders, social groups and different economic classes.

*Quality of Training:* Similarly, nearly 90% of the pass-outs found the quality of training received in ITIs of very good or good quality. A little more than 8% did not think the training was of very good quality and only 1% said that the training quality was bad.

*Areas in which training in ITIs can be improved:* In each aspect of training, at least 50% of all pass-outs wanted to see a lot or some improvement. The three areas which were identified by nearly 80% of all pass-outs as requiring a lot or some improvement were: (a) better information on employment opportunities, (b) meeting with employers, and (c) training experience in industry. A higher share of females compared to males responded this way, and a lower share of ST pass-outs compared to other social groups responded this way. Again a higher share than average of pass-outs belonging to APL households considered these factors of the utmost importance. A lower than average share of pass-outs from BPL and AAY households responded this way. Nearly 60-75% of all pass-outs and sub-groups thought that training in use of computers, use of machinery, equipment maintenance, and the use of tools required a lot or some improvement. Between 50-60% of ITI pass-outs wanted to see a lot or at least some improvement in communication and team-work skills. The areas that were considered least problematic by pass-outs were relevance of curriculum, use of drawings and use of written instruction.

However, ITI pass-outs had more revealing suggestions on what aspects of ITI training could be improved. Table 9.5 tabulates ITI pass-outs' rankings by importance of the areas of ITI training that needed improvement. Half of the pass-outs ranked "information on employment opportunities", "meeting with employers" and "training experience in industry" as needing a lot of improvement. These suggestions are consistent with widely-held (by industry) views that many ITIs are not market oriented and lack strong links to industry, and they imply that ITIs should place greater emphasis on job counseling, facilitating job placements with employers, and arranging training internships in industry. Other suggestions pertaining to improvements in curriculum, equipment, soft skills, use of drawings and pedagogy are ranked as being less important, suggesting that most pass-outs are relatively satisfied with the training provided, and 44-53 percent of pass-outs stated that these areas did not need any improvements.

<b>Areas in which ITI training should be improved</b>	<b>Percent of Pass-outs</b>		
	<b>A lot</b>	<b>Some</b>	<b>None</b>
Better information on employment opportunities	50.6	31.6	17.7
Meeting with employers	49.7	27.5	22.7
Training experience in industry	47.2	32.4	20.4
Use of computers	40.2	34.2	25.6
Use of machinery	34.6	38.3	27.0
Theory and practice of equipment maintenance	32.4	37.4	30.1
Use of tools	31.7	39.1	29.2
Theory of technology	30.1	35.2	34.6
Presentation skills	28.7	38.5	32.8
Teamwork training	28.6	34.4	36.9
Inventory management skills	28.5	38.4	33.1
Communication skills	27.8	35.9	36.3
Relevance of curriculum	19.7	36.3	44.0
Use of drawings	16.7	39.4	43.9
Use of written instructions	14.1	32.5	53.4

*Source: ITI Tracer Study (2006)*

## **5. Summary of Findings**

The following are the main findings of the ITI institutional census and the ITI pass-outs tracer study.

**The problem of vacancies is a pervasive problem across institutions and states.** If instructors are not present in adequate numbers, then the quantity and quality of training provided will adversely affected.

**Training of trainers is infrequent and few trainers go for further in-service training.**

Training of instructors for up-gradation of their skills to keep up with changing industry production technologies happens little and with very low frequency. More than three-quarters of instructors in the sector had not gone for any training in the last three years. For the sector to move along with industry, it is critical that the trainers themselves have the necessary new skills.

**Course offerings need to be rationalized.** Many institutions offer courses that have no or very low demand. Also, there is greater drop-out from oversubscribed courses, at least to some extent due to course-congestion. There is the need to rationalize course-offerings so that the more popular courses allow more people to join them, and outdated courses which have few takers are dropped from the curricula. Regularly updating the curricula is a critical aspect of a flexible vocational training sector.

**Internal and external efficiency in the sector is weak.** In many states, the share of those enrolled who take and pass the test is low. External efficiency of the sector is quite poor. A very small percentage of students who pass-out of ITIs find employment. Many of them do not even work in areas for which they trained. To some extent employment is determined by opportunities, but it is also determined by the quality of skills that a labor market entrant has. If these skills are not demanded or perceived as being of poor quality, demand for them will be low. The average time a student takes to find a job is also high. This could be alleviated to some extent if mechanisms exist to connect students to potential employers and jobs such as job fairs and information kiosks for both students and employers.

**The scope of training needs to be extended to include some general skills.** The students' own perceptions of the adequacy of training shows that they would like to receive skills in areas of communication, presentation, management and entrepreneurship.

Institutional reforms are critical for the sector to become a value-giving training option for youth to prepare for the labor market. The sector as it currently exists is not pro-industry. Rigid and outdated curricula makes it a low-return, high cost sector for the government and an option of last resort for students. The participation of the private industrial sector in identifying needed skills and curricula content will be necessary for the sector to become viable and valuable.

**References:**

DGE&T (2003). *Tracer Study of Trained Apprentices to Assess the Effectiveness of Apprenticeship Training Scheme*. Directorate General of Employment and Training, Ministry of Labor and Employment, India.

DGE&T (2005). *Externally Aided Project for Reforms and Improvement in Vocational Training Services rendered by Central and State Governments*. Proposal of the

Directorate General of Employment and Training, Ministry of Labor and Employment, India.

FICCI (2002). *Survey of Employers on Education and Skill Needs*. Survey Conducted by the Federation of Indian Chamber of Commerce and Industry.

ILO( 2003). *Industrial Training Institutes in India: The Efficiency Study Report*. ILO Subregional Office for South Asia, New Delhi

World Bank (2006) *Skill Development in India-The Vocational Education and Training System*.

**Annex**

**Table A. 1. Number of courses offered by ITIs for 2003 entering class**

<b>Course</b>	<b># courses</b>	<b>% courses</b>	<b>Proportion over subscribed courses</b>	<b>Course</b>	<b>#</b>	<b>%</b>	<b>Proportion over subscribed courses</b>
Fitter	703	15.76	0.69	Mechanic Medical Electronics	4	0.09	0.33
Electrician	683	15.31	0.70	Cutting and Tailoring	3	0.07	1.00
Wireman	389	8.72	0.67	Electrician (Mines)	3	0.07	0.00
Electronics Mechanic	376	8.43	0.61	Laboratory Assistant (Chemical Plant)	3	0.06	0.00
Mechanic (Motor Vehicle)	349	7.82	0.59	Material Handling Equipment Mechanic	3	0.07	0.33
Turner	321	7.2	0.57	Plumber	3	0.07	1.00
Mechanic Radio and Television	268	6.01	0.48	Footwear Maker	2	0.04	0.50
Machinist	217	4.86	0.54	Mechanic Maintenance (Chemical Plant)	2	0.04	0.50
Draughtsman (Civil)	200	4.48	0.51	Mechanic-cum-Operator Electronic Communications	2	0.04	0.00
Mechanic (Refrigeration and Air Conditioning)	189	4.24	0.57	Secretarial Practice	2	0.04	0.00
Draughtsman (Mechanical)	123	2.76	0.47	Sheet Metal Worker	2	0.04	1.00
Painter (General)	80	1.79	0.36	Wireless Mechanic cum Operator	2	0.04	0.50
Information Technology & Electronics Science	70	1.57	0.55	Computer Aided and Needle w	1	0.02	0.00
Instrument Mechanic	67	1.5	0.48	Corporate House Keeping	1	0.02	1.00
Mechanic (General Electronics)	64	1.43	0.64	Dress Maker	1	0.02	0.00
Surveyor	64	1.43	0.47	Dress Making	1	0.02	0.00
Machinist (Grinder)	50	1.12	0.50	Farm Mechanic	1	0.02	0.00
Tool & Die Maker	39	0.87	0.69	Knitting With Machine	1	0.02	
Fashion Technology	18	0.4	0.19	Fruit and Vegetable Processor	1	0.02	1.00
Electroplater	14	0.31	0.69	Mechanic (Earth Moving Machinery)	1	0.02	1.00
Mechanic Machine	14	0.31	0.31	Mechanic	1	0.02	

Tool Maintenance				(Instrument Aircraft)			
Instrument Mechanic (Chemical Plant)	12	0.27	0.72	Mechanic (Marine Diesel)	1	0.02	1.00
Mechanic Agricultural Machinery	12	0.27	0.27	Mechanic (Tractor)	1	0.02	1.00
Watch and Clock Maker	10	0.22	1.00	Mechanic Auto & Electrical Electronics	1	0.02	1.00
Other	10	0.22	0.67	Mechanic Communication Equipment Maintenance	1	0.02	1.00
Mechanic Radio & Radar Aircraft	7	0.16	0.43	Mechanic Consumer Electronics	1	0.02	
Millwright Maintenance Mechanic	6	0.13	0.50	Mechanic Mechatronics	1	0.02	0.00
Tire Repairer	6	0.13	0.17	Mill Hand	1	0.02	0.00
Welder	6	0.13	0.50	Mono Castor Operator	1	0.02	1.00
Attendant Operator (Chemical Plant)	5	0.11	0.40	Pump Mechanic	1	0.02	1.00
Mechanic (Diesel)	5	0.11	0.80	Pump Operator-Cum-Mechanic	1	0.02	0.00
Mechanic Computer Hardware	5	0.11	0.40	Rubber Technician	1	0.02	0.00
Mechanic Maintenance (Textile Machinery)	5	0.11	0.80	Stenography Regional Language	1	0.02	0.00
Millwright (Rolling Mills)	5	0.11	1.00	Tractor Mechanic	1	0.02	1.00
Pattern Maker	5	0.11	0.60	Weaving	1	0.02	1.00
Carpenter	4	0.09	0.50	Automobile Engineering	1	0.02	
Mechanic Advanced Machine Tool Maintenance	4	0.09	0.50	ET	1	0.02	1.00

Source: ITI Institutional Census (2006)

**Table A. 2: Trainees Who Entered in 2003: Success at Pass-out**

States	Percentage (%) of trainees in					
	All courses		Courses of 1 year or less		Courses of 2 years or more	
	Took the test	Passed the test	Took the test	Passed the test	Took the test	Passed the test
Andhra Pradesh	70	47	71	43	70	49
Men	71	47	72	45	70	48
Women	82	68	75	61	88	76
Bihar	94	88	104	95	87	84
Men						
Women						
Chhattisgarh	84	50	86	53	82	48
Men	82	54	83	54	81	54
Women	110	114	113	104	105	131
Delhi	84	62	92	69	78	56
Men	83	58	91	62	78	55
Women	88	76	87	75	90	79
Goa	87	72	86	72	87	71
Men	87	70	88	72	85	67
Women	93	89	92	88	100	100
Gujarat	71	60	72	62	69	55
Men	70	59	71	62	68	55
Women	72	65	75	64	56	74
Haryana	95	81	114	97	70	60
Men	77	62	85	64	70	60
Women	97	81	97	82	89	76
Himachal Pradesh	98	77	101	86	93	61
Men	98	72	102	84	93	60
Women	95	130	96	138	89	85
J&K	99	64	99	61	98	67
Men	98	65	98	54	98	76
Women	98	74	98	74	98	72
Karnataka	81	56	79	43	81	60
Men	82	57	79	40	82	63
Women	92	60	85	55	95	63
Kerala	87	68	91	65	85	69
Men	95	71	91	59	96	76
Women	88	72	91	73	86	72
Madhya Pradesh	79	47	83	45	76	48
Men	78	45	81	43	76	48
Women	92	63	92	63	91	62
Maharashtra	79	62	86	68	71	55
Men	78	60	86	64	72	56
Women	79	65	85	72	69	53
Orissa	84	79	85	82	83	77
Men	79	73	78	70	79	75
Women	86	90	81	91	90	89

**Table A.2: Trainees Who Entered in 2003; Success at Pass-out (continued)**

States	Proportion of trainees (%) in					
	All courses		Courses of 1 year or less		Courses of 2 years or more	
	Passed the test	Took the test	Passed the test	Passed the test	Took the test	Passed the test
Punjab	87	72	93	79	78	60
Men	84	66	94	72	76	61
Women	94	87	96	88	85	74
Rajasthan	89	63	89	64	88	62
Men	89	62	89	61	89	64
Women	82	59	84	65	78	43
Sikkim	87	70	88	68	85	78
Men	89	71	88	68	89	83
Women	50	50	.	.	50	50
Tamil Nadu	91	72	96	75	87	71
Men	94	71	99	72	91	71
Women	111	96	113	103	110	90
Uttar Pradesh	85	76	93	84	80	71
Men	84	75	93	82	80	71
Women	85	82	87	84	70	63
Uttaranchal	79	72	93	86	66	59
Men	63	58	61	60	64	57
Women	105	96	110	101	88	79
Total						61

Source: ITI Tracer Study (2006)

### *A.3. A Brief Description of the Vocational Training Improvement Project (VTIP)*

Skill mismatches between skills demanded and skills supplied and the low quality of skills supplied are due in large part to the many constraints faced by the training system in India faces, especially in the public vocational training system. These include outdated equipment and course curricula, budget constraints, lack of accountability and responsiveness to the needs of the labor market, limited involvement of the private sector in managing training design and delivery, poor coordination among those managing the sector, and limited flexibility provided training institutions to experiment and innovate. The objective of the Vocational Training Improvement Project, undertaken by the Ministry of Labour and Employment, Government of India, is to upgrade and reform the vocational training system to re-orient and make it more responsive to the skills demanded by the labor market, and to improve the quality of trained graduates produced by it. The project addresses these constraints through (a) competitive grants provided to selected ITIs for up-gradation to Centers of Excellence (CoE); (b) establishment of funds to support innovation in training programs and training delivery; and (c) policy reforms, capacity development and incentive funds for well-performing states to further develop their vocational training systems.

The first project component will contribute towards provision of high quality vocational training in trades important for the local economy. Competitive funding based on institutional development plans submitted by ITIs will direct funding towards those institutions that are more likely to use the funds efficiently. To be eligible, ITIs would have a fully functioning Institutional Management Committee (IMC) with active private sector participation and sufficient autonomy to generate revenue and set fees in consultation with the state. They would forecast emerging training areas, assess training needs, review new curriculum for relevance, approve faculty training and appointments of contract staff, and facilitate job placements of graduates. The selection criteria favor those states and institutions that will encourage greater private sector participation in managing and developing the vocational training system, and those institutions that have a clear and coherent vision for staff and student quality enhancement.

The second component will finance innovative interventions in the design and delivery of training programs, including to previously poorly served populations. The innovation funds can be accessed by states, public and private sector institutions, private sector associations, NGOs and others.

The third component will alleviate systemic constraints faced by the vocational training system in India. Currently, the vocational training system suffers from management that is fragmented, blurred and duplicated between the centre and state governments, with negligible private sector participation. This will be addressed in part through the development of a national qualifications framework, which will also contribute towards reforms of regulations under which private providers may enter and operate. A 'level playing field' will ease the private supply of training in India. Attention will also be given to developing a policy framework for training in the informal sector which provides over 90 percent of employment in India. A training fund will be designed

to allocate resources to well-performing institutions in either the public or private sector on the basis of performance criteria. Finally, it will explore the feasibility of using financial incentives (e.g. tax deductions, matching funds) to encourage employers to provide in-service training to their workers.

#### *A.4. Data Quality Issues*

The two surveys, the ITI Institutional Census (2006) and the ITI Tracer Study (2006), fill important informational lacunae for the ITI sector in the country. With regards to the quality of data of the two surveys, various lessons have emerged that will need to be taken into account to improve the design of the future editions of the two surveys.

The data gathered through the ITI Institutional Census suffered from a number of weaknesses:

- a. There was incomplete coverage as not all ITIs responded.
- b. Among ITIs that did respond, the filled out questionnaires was received from them over a period of six months which reduces the comparability of data across ITIs.
- c. Questionnaires were not filled out completely.
- d. In some sections the values provided were not consistent with each other rendering the data unusable. This was especially true of data on ITI finances where it was not even clear which unit the ITIs had provided the information in.

Among the critical design lessons provided by the ITI Tracer Study (2006) were:

- a. The questions on employment history need to be asked more precisely.
- b. The question on employment-unemployment-not in the labor force needs to be made more precise to properly distinguish between the various alternatives.