STUDY ON

EFFICACY AND IMPACT OF NATIONAL APPRENTICESHIP TRAINING SCHEME (NATS)

OF

BOARD OF APPRENTICESHIP TRAINING (SOUTHERN REGION)

National Institute of Labour Economics Research and Development (NITI Aayog, Government of India)

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Efficacy and Impact of National Apprenticeship Training Scheme (NATS)

Report Submitted to BOAT (SR), Chennai

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PREFACE

Educational and Training Set-up at the Institutional level is unable to cater to the growing aspirations of skill-sets at the enterprise-level, and is a matter of concern throughout the world. To minimize this gap, every country is taking its own policy decision. In case of India, crucial amendments to The Apprentices Act, 1961 were enacted in 1973, and 1986 to facilitate industrial training and exposure to modern methods of industrial processes to the fresh Graduate Engineers, Diploma Engineers, and Vocational School pass-outs entering into labour market. This segment of last mile skilling is known as National Apprenticeship Training Scheme(NATS), and is being anchored in the Ministry of Human Resource Development(MHRD), Govt. of India. NATS is being implemented through four independent regional bodies, i.e., Boards of Apprenticeship Training(BOAT) located at Mumbai, Kanpur, Chennai, and Board of Practical Training(BOPT) located at Kolkata.

There are varied signals emanating regarding the effectiveness of the NATS, i.e., impact of the apprentice training on the successful trainees vis-à-vis rise in employability & skill enhancement. BOAT(Southern Region), Chennai has entrusted NILERD to conduct the study on "Efficacy and Impact of NATS of BOAT(SR)". Southern Region, with big states under its jurisdiction has a pool of more than 3500 establishments, and close to 30,000 apprentice slots spreading in more than 200 branches/disciplines across the central & state governments and in private domain. Therefore, it is crucial to assess the efficacy and impact of NATS in the Southern Region.

NILERD study team has extensively toured the industrial belts of all the States, and UTs falling in the Southern Region, and interacted with all the stakeholders concerned with NATS, i.e., Establishments(CPSU, SPSU, Private), on-roll trainees, passed out trainees, Institutions/Colleges through FGDs, brainstorming sessions apart from structured schedules. Focus of inquiry was on employability and skill enhancement, role of establishments in minimizing skill gaps of trainees, effective Industry-Institute collaboration.

I wish to express my gratitude to Dr. Krubha Shankar, Director of Training, BOAT(SR), MHRD for allocation of this empirical study and financial support.

The Report is an outcome of immense hard work and collective efforts of dedicated team of researchers headed by Dr. M.R. Prasad, Dr. Shachi Joshi and Mr. Indrakumar.

I hope this report would be useful as a feedback for further continuation and strengthening of NATS through BOAT(SR).

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CONTENTS

EXECUTIVE SUMMARY

Evolution and Origin of Apprenticeship Training

1.1. *Introduction:* Apprenticeship is a system of training a new generation of practitioners on a structured and competency based set of skills. Apprenticeship training is a process by which people become skilled workers, through a combination of formal learning and long-term on-the-job training.

1.2 Genesis of Apprenticeship Training Scheme: A Cross-country Experience:

There are many evidences across the globe that the concept and system of Apprenticeship Training was in vogue for a long time, and it became popular with industrialization, and development of technologies for processes and manufacturing techniques. In the Indian context, apprentice became inevitable due to skill gaps existing between demand and supply. At high skill side, this is to supplement the institutional.

1.3 India's Apprenticeship Training Scheme(ATS): Introduction of The Apprentices Act: The Apprentices Act, 1961 was enacted with the broad objectives of (i) regulating the program of training of apprentices in the industry so as to conform to the prescribed syllabi, period of training, etc. as laid down by the Central Apprenticeship Council; and, (ii) to utilize fully the facilities available in the industry for imparting practical training with a view to meeting the requirements of skilled manpower for industry. To achieve these objectives, a synergy has to take place between all the stakeholders. The scheme is in vogue in more than 34,000 establishments, most of them in private enterprises, cutting across 250 sectors, and imparting skills/vocations in more than 188 trades with a capacity utilization of more than 2.5 lakh apprentices every year.

NATIONAL APPRENTICESHIP TRAINING SCHEME(NATS):

2.1 Genesis & Significance of NATIONAL APPRENTICESHIP TRAINING SCHEME(NATS): The Apprentices Act(ATS Act 1961) was amended during 1973 to provide last-mile skilling opportunities for all the graduates, diploma holders(including sandwich courses) from Engineering Colleges and Polytechnics respectively. Later on, the ATS Act was further amended during 1986 to include all pass-outs from 10+2 vocational schools, taking into account the dynamics of skill-ecosystem in those times. These two landmark amendments are called National Apprentice Training Scheme(NATS)..

2.2 Objectives of NATS: Main objectives of NATS are (i) to abridge the gap in skills, in so far as the practical/hands on experience of fresh graduate engineers, diploma holders in engineering and 10+2 vocational pass-outs are concerned, which they do not acquire during their regular studies under normal practice, (ii) to secure facilities for training in different establishments, both in private and public sector organizations for the pass-outs of technical institutions covered under NATS as stated above, (iii) to arrange for dissemination of information on various aspects of practical training through lectures, films and other media of communications, among other things.

2.3 Important Features of NATS: All the pass-outs from the Institutes(Engineering Colleges, Polytechnics, and Vocational Schools) are eligible to enroll in NATS upto three years from the year of graduation. Tenure of the apprentice training is one year. Monthly rate of stipend is Rs. 4,984/- , Rs. 3,542/-and Rs. 2,758/- for GA, TA, and T(V)A respectively. Stipend to the extent of 50% is reimbursable to Establishments from the BOAT/BOPT. There are approx 12,000 establishments, having more than 2.5 lacs seat capacity of training. This one year certificate is treated at par with a full-fledged experience certificate, and this facilitates for a gainful and suitable employment in the labour market.

Thus the successfully trained apprentices are either absorbed within the same establishments or obtain suitable jobs elsewhere. It is not binding on the establishments to provide compulsory employment to the apprentices after successful completion of training, though ample number of them used to be absorbed within the establishments based on the performance and suitability of apprentices.

2.4 Implementation Process & Operational Mechanism: Execution and implementation of this amended act is done by MHRD through four Regional Boards, i.e. in Southern Region, Northern Region, Western Region and Eastern Region located at Chennai, Kanpur, Mumbai, and Kolkata respectively. The Boards at South, North, and Western Region are called Board of Apprenticeship Training (BOAT), and the one at Eastern Region is called Board of Practical Training (BOPT). All these regional boards are autonomous bodies under the administrative control of MHRD. Each Board is headed by a Director, functionally called as Director of Training, and who acts as Regional Central Apprenticeship Adviser.

Anchoring and regulation of the ATS Act is under the Ministry of Skill Development & Entrepreneurship, and Central Apprenticeship Council(CAC) which is an apex Statutory Body under the ATS Act, 1961. This particular segment of ATS Act, i.e., NATS is manned by MHRD.

EVALUATION OF NATS OF BOAT(Southern REGION)

3.1 Need for Evaluation of NATS: As stated in previous Chapters, the NATS has evolved with a purpose of preparing last mile skilling of technical & skilled personnel coming out of Technical Institutions. Through one year practical training of NATS, the graduates are entering into labour market with skill upgradation satisfying industry-ready/work-ready/job-ready attributes. However, there are varied signals coming out from the labour market about the employment prospects of such NATS-trained graduates. There is a need to look at the ground realities based on the empirical evidences. Hence this study is being undertaken.

3.2 NATS as a Potential Vehicle of Skill Enhancement: Though the NATS is intended to facilitate skill enhancement of fresh graduates and to meet the skill expectations of industries, there are mixed signals felt. There is no doubt that the NATS is fulfilling the needs, such as new age skills needed to meet the technological dimensions.

Statistics of NATS reveals that there is under utilization of capacity of the seats which can be seen as wastage of capacity & resources of skilling. On the other hand, graduates from Institutions are remained unemployed and not enrolling with NATS. Therefore, the scheme has scope and potential to bring out more effectiveness. For example, the capacity utilization of the scheme is around 57%, though the eligible youth joining labour force every year is more than 10 times the intake capacity of NATS. Many private establishments are averse to the NATS. There were also signals of low-absorption rate of pass-outs of NATS within the establishments where the training took place, though there is ample opportunity for such absorption. There is tremendous scope for further improvement, e.g. enhancing the enrollment at establishments. Against this background, the present evaluation study is being conducted.

3.3 Objectives of the Study: (a) To assess the impact of Apprenticeship Training on employment, skills of targeted beneficiaries, (b) To identify the bottlenecks in implementation of The Apprenticeship Act, (c) To recommend remedial steps to improve the effectiveness of NATS Scheme.

3.4 Scope and Coverage: The study covered all the states falling under the jurisdiction of BOAT(SR). The study extensively covered the key stakeholders of NATS, i.e., (i) industrial establishments(&Training Centers) inter-alia covering PSUs(Central & State), private Industries spreading in all geographical parts of the states, and (ii) direct beneficiaries of the Act (on-roll apprentices and those who have completed apprenticeship training), and (iii) Educational Institutes (Engineering Colleges/Polytechnics/High Schools of Vocational courses).

3.5 Methodology: In order to address the above objectives, the study covered extensively all the states & UTs. In each state, two places(industrially active zone, and industrially dormant zone) were covered in the field survey. The establishments were enlisted by state and by type of management. From each state, the industries were classified broadly into (i) central, (ii) state, and (iii) private units for sampling purpose.

Among the above three types of establishments, the three categories of Apprentices, i.e. (i) graduates, (ii) technicians and (iii) technicians(vocational) were covered. Feedback was collected from on-roll apprentices and ex-NATS trainees of previous two years by tracer method. In addition to structured schedules for each stakeholder, focused group discussions (FGDs) were held with Training & Placement Officers(TPOs) of establishments. Control groups such as non-NATS graduates/employees, fresh graduates not opting for NATS were also taken into consideration for comprehensive comparison.

Sampling frame consists of 40 Establishments, 140 on-roll trainees, 48 passed-out trainees(Tracer surveys), and 9 Institutions(Engineering Colleges, Polytechnics and Vocational Schools). Sampling frame gave due weightage to internal attributes like geographical distribution among the states and UTs, type of establishments (central/state PSUs, private establishments), type of activity of establishments (manufacturing, mining, Information Technology, services, etc.), diversity among the trainees (gender, social category, rural/urban).

Several factors directly indicating the efficacy, effectiveness, and impact of NATS, and operational problems of BOAT(SR) were incorporated in the schedules of primary data collection through structured questionnaires among different stakeholders.

SURVEY OF ESTABLISHMENTS: Nurturing Skill Development

4.1 Introduction: It is a recognized fact that the fresh graduates are not "Industry-ready". Significant amount of practical experience in an industrial establishment will accomplish the much needed and desired skills and practical knowledge for the aspiring technical personnel. In addition, the large-scale establishments always adopt the latest technologies, and innovative practices. Exposure to such units gives much needed skill exposure to trainees.

4.2 Glimpse of Statistics of Establishments, Seats capacity under the Jurisdiction of BOAT(SR): BOAT(SR) has a total of 2708 establishments in all sectors, i.e., Central Govt., State Govt., and Private Domain, and a total seat capacity of 61,213. Out of these figures of establishments and seat capacity, more than 60% are shared by private establishments in all the states & UTs.

4.3 Sample of Establishments: Out of 40 establishments, majority are from private sector, and from the manufacturing activity.

4.4 Employment Structure of Establishments: Majority of the establishments are in private sector, and skilled, technical workforce is maximum in private sector followed by CPSUs.

4.5 *Fitness of trainees for absorption:* Establishments expressed that all the trainees are perfectly fit for absorption. The option of partial fitness is inferred as extension of tenure period for moulding the trainees completely. Due to constraints, the establishments are not absorbing the trainees fully. Therefore, non-absorption is not construed as lack of skills.

4.6: Opinion of establishments about skills acquired by trainees in colleges:
The opinion is divided into three types, such as (i)matching problem, connecting supply (from college) to Demand(expectation at establishment). This is known as employment problem, (ii) mismatch problem, repairing supply to suit the demand (employability problem), (iii) pipeline problem, preparing supply to demand(complete overall of syllabi at college). The establishments gave a mixed response about quality of colleges preparing skilled professionals.

4.7: Internal Absorption Details: Majority of private establishments are absorbing sizeable no. of trainees after training. In case of CPSU/SPSUs, due to rigid rules, they are not absorbing. However, there is a moderation when these ex-trainees are appearing for interview.

4.8: Shortage of skilled manpower in Establishments: Units are of the opinion that there is shortage of skilled manpower compared to the expectations. Companies are expecting the skilled workforce to have exposure to the firms of diverse, competitive nature so that they themselves will benefit out of it. In

every establishment, there are vacancies, but they are open to recruit only professionals with state-of the art exposure.

4.9 Involvement of Trainees in Production Processes: In all the establishments surveyed, the trainees are directly engaged in mainstream activities after couple of weeks of orientation program.

4.10 Status of Core Facilities: All training depts. Are fully equipped with core facilities. In case of CPSU, there are dedicated training dept with dedicated Training personnel.

4.11 Status of Complimentary facilities: All the trainees are enjoying the complimentary and fringe benefits at par with the regular employees, such as subsidized transport, canteen, etc.

4.12. Other issues captured: (a). There is a social and gender diversity of trainees in the overall number of trainees, (b) No issues about compliance of the Apprentices Act, (c) there is total transparency in selection of trainees, (d) No difficulty in getting the requisite no. of trainees, (e) there are some issues about stipend matters such as delay in reimbursement.

FEED-BACK OF TRAINEES & Ex-TRAINEES:
Last Mile Skill Development by Main Beneficiaries of NATS

5.1 Background: There are mixed views about the net skill upgradation, fitness for absorption after training, competencies gained vis-à-vis improvement in employment & employability in the labour market. By giving the opportunity of last-mile skill development through NATS, it is curious to know the impact of the NATS on the employability. Therefore, an attempt is made to take the views of current trainees(on-roll trainees), and ex-trainees to gauge the effectiveness of the NATS vis-à-vis better employment prospectus and NATS's objectives.

5.2 Enrolment & Outturn in Degree and Diploma Courses: All India figures shows that there are gaps at worrying levels in cases of enrollment, outturn, and placements as per AICTE records. Southern Region is following the same trends.

5.3 The Survey Results – Background & Views of On- roll Trainees: Total of 117 on-roll trainees were contacted. Half of them are in private firms followed by CPSUs. Majority of them are in IT/software companies followed by Manufacturing/Automobile industries. Their views on course curriculum was encouraging, and well in conformity, and synchrony with the objectives enshrined in the Act. To be precise, the quality of training is satisfactory.

5.4 Tracer Study (Views of Ex-NATS Trainees): Total of 58 ex-NATS trainees were contacted. Majority of them are engaged in productive activities. More than 20% of them were absorbed in the same units immediately after training. Among them, majority are settled in IT followed by Manufacturing sector. There is a high attrition rate in IT industry, therefore, absorption is also high. Among the other branches, mechanical engg is the dominant field of beneficiaries. They were all satisfied with the quality of NATS.

5.6 Impact of NATS training on gainful employment: By comparing the employability chances of NATS benefited trainees with those of non-NATS trainees, it was found that the waiting period for NATS beneficiaries has reduced compared to other group.

INSTITUTIONS: Skills Crisis at Supply Side

6.1 Background: Competencies and skills are the expected attributes to be handled at Institutional level, and they are supposed to be in synchrony with the demand dynamics. However, due to uncontrolled factors, i.e., fast changes in technology, transformation of skill sets, skilling is also supplemented by other means. Therefore, it is pertinent to examine this important stakeholder, Institutions & faculty, look at their perspective and to link with the other stakeholders.

6.2. Engineering & Technical Education in India: Turmoil in Waiting: As per AICTE records, the placement figures, outturn, and enrollment are far lower compared to the intake capacity of the total seats available in India. Currently, more than 4400 Degree, and equal number of Diploma Institutes are functional. Barring a fraction of them, majority of these Institutions remained just "Distributors of Degree/Diploma Certificates". Looking at the quality of faculty is another disturbing factor. All these generic problems at supply side are forcing the policy makers to strengthen the supplementary methods like NATS.

6.3 Vocational Skills at School Level: Suffering with Policy Paralysis: For all strategic, logistic reasons this segment of NATS has to be shifted to the Ministry of Skill Development & Employment and to be aligned with their main component of Apprentice training.

6.4 Coverage & Glimpse of the Institutions: Total 9 Institutes with a blend of Degree, and Diploma Institutes are covered in the study. Majority of the institutes are from Government and followed by private. More focus is given to Polytechnics as they are the main component of skill preparation at supply side.

6.5 Qualitative Aspects of Institutions Covered: All the institutes are fully equipped in respect of workshops, laboratories, class rooms to the desired level. However, the faculty is not fully prepared to prepare the students to the latest technological demands of industries.

6.6 Details of Branches and Placements: Majority of the colleges have branches like mechanical, electrical, civil, electronics, IT, Computer Sc. Etc. There is sizeable placement/campus recruitments taking place. Due to surge in infrastructure activities, campus placements of diploma holders has increased, so also, they have vertical mobility to enter degree colleges at lateral level.

6.7 Views of Institutions on Qualitative issues of Skilling: Institutes gave tangible advice on wide range of issues to improve the quality of skilling by involving all the stakeholders. Some of the points are establishment of regular Industry-Institute Interactions and a framework for implementation.

6.8 Suggestions on NATS by Institutions: Right from curriculum development to aligning the syllabi with the industry needs, there are many valuable suggestions came from Institutes. They felt, the last two semesters /one semester shall be totally aligned with the industry needs by sector/activity, and industry experts can engage the classes and practical lessons.

6.9 Skill Gap Analysis: Opinion of Faculty: Faculty opined that there is upto 50% of skill gap with the outgoing graduates. This is due to Institutional deficiencies as per their opinion.

6.10. Faculty Opinion to improve the quality of skill training at Institutional Level: There should be regular Faculty Development Programs (FDP). Faculty should be enrolled in summer/winter orientation schools.

BOAT(SR) Organizational Structure – SWOT Analysis, Conclusions, and Recommendations:

7.1 BOAT(SR): Organizational Structure: Board has a strength of 61 staff, out of which at present 31 are in position. Ministry of HRD is the overall controlling authority, and all day-to-day mattes are managed through Board of Governors, presided over by an eminent personality with industry background. All the board members are appointed by Government of India.

7.2 *BOAT(SR): SWOT ANALYSIS -* Considering the overall gamut, scope, and challenges ahead of BOAT(SR), a brief SWOT analysis is made identifying the Strengths, Weaknesses, Opportunities, and Threats for better organizational outcome. Key parameters under each category are documented. BOAT(SR) has a challenging job of branding of NATS to attract the young graduates from Institutions, and to impress every establishment under private domain to enroll the trainees, in order to achieve the overall effectiveness of the NATS.

Board's organizational, and hierarchical structure was designed and fixed four decades back, keeping in view the conditions prevailing at that point of time. Now, it is suffering with increased work load, stagnation in career progression of staff among other things.

7.3 BOAT(SR)'s Contributions: Innovative Efforts to Popularize NATS

BOAT(SR) is functioning in letter and spirit as per the objectives, salient features, and obligations as enshrined in the NATS. It is conducting the following programs in addition to its regular and routine duties of massive enrollment of graduates as apprentices under NATS.

i. Career Guidance Programs(CGP) for outgoing students
ii. Supervisory Development Programs(SDP) for Establishments
iii. Industry-Institute Interactions on core skills and NATS
iv. Bharti Melas(A Common Platform for Recruiters/Establishments, Job-aspirants, Ex-Trainees, Institutions etc.)

7.4 *Impact of NATS on Employability & Employment Profile of NATS pass-outs:* Few success stories are captured to showcase the multiple benefits accrued with the NATS Scheme. Some of them are (i) grooming young graduates as entrepreneurs with the NATS, (ii) career growth after one year exposure to NATS, (iii) exposure to high tech, sunrise industries etc. There are many visible advantages emanating out of NATS such as reducing skill gaps , improvement in competencies etc. There are also best practices adopted by Establishments

7.5 Developing Skill Eco-system among Auxiliary Units: Augmenting Intake capacity among the medium-size Establishments:

There is huge rush to enroll in reputed and large private companies of manufacturing, automobile, processing activities etc. However, due to their limited capacity of training, they are unable to accommodate many youth. While interacting with well-established industries, they revealed that many auxiliary industries are centered around their units. They are ready to promote pooling of such auxiliary units, and to act as ombudsmen of NATS to promote skill training of youth in those auxiliary units. Thus, there will be an increase in capacity utilization, and enhancing the job opportunities of trainees.

7.6 Institutes' Perspectives: There are Institutes giving impetus to NATS scheme by motivating outgoing students to enroll for their skill development. BOAT(SR) is also engaging Institutes regularly in different forums to strengthen the NATS.

7.7 Graduates Not Opting for NATS: Expectation of outgoing graduates is high with the NATS, i.e., perceiving NATS training as a permanent employment overlooking the one year tenure, looking at the stipend as too meager amount. These young minds are being counseled in different channels through BOAT and Institutes.

Success Stories, Case Studies, Best Practices

These are mainly focusing on (i) entrepreneurship avenues offered by CPSUs through NATS, (ii) grabbing the opportunities, understanding the business models of Auxiliary units in order to start small scale/medium scale industries around the big units, (iii) opportunities in sunrise industries, new age industries., (iv) skills, competency upgradation through NATS, (v) migration to urban industrial clusters from rural areas for better opportunities, and upward social mobility etc. among others.

CHAPTER – I

Evolution and Origin of Apprenticeship Training

1.1 Introduction:

Apprenticeship training is a system of training a new generation of practitioners on a structured competency based set of skills. Apprenticeships ranged from craft occupations or trades to those seeking a professional license to practice in a regulated profession. Apprentices build their careers from apprenticeships. Most of their training is done while working for an employer who helps the apprentices learn their trade or profession, in exchange for their continuing labour for an agreed period after they have achieved measurable competencies. For more advance apprenticeships, theoretical education is also involved, formally via workplace and also by attending a local technical college, vocational schools or university while still being paid by the employer often over a period of 4 years to 6 years.

The system of apprenticeship first developed in the later Middle Ages (5-15 Centuries) and came to be supervised by craft guilds and town governments. A master craftsman was entitled to employ young people as an inexpensive form of labour in exchange for providing food, lodging and formal training in the craft. Most apprentices were males, but female apprentices were found in crafts such as seamstress, baker and stationer. Apprentices usually would begin at ten to fifteen years of age, and live in the master craftsman's house. Most apprentices aspired to become master craftsmen themselves on completion of their contract(usually a term of seven years), but some would spend time as a journeyman and a significant proportion would never acquire their own workshop.

The modern concept of an internship is similar to an apprenticeship. Universities still use apprenticeship schemes in their production of scholars: bachelors are promoted to masters and then they produce a thesis under the oversight of a supervisor before the corporate body of the university, which recognizes the standard of a thesis. Another view of this system is of graduate students in the role of apprentices, post-doctoral fellows as journeymen, and professors as masters. Also, similar to apprenticeships are the professional development arrangements for new graduates in the professions of accountancy and the law. A British example was training contracts known as 'articles of clerkship'. The learning curve in modern professional service firms, such as law firms or accountancies, generally resembles the traditional master-apprentice model: the newcomer to the firm is assigned to one or several more experienced colleagues (ideally partners in the firm) and learns his skills on the job.

Technical Education is complete only when its component, namely, learning of concepts at the educational institutions is fully supplemented with effective & practical training programmes in the industrial atmosphere. The programme that has been used based on an enterprise is called as Enterprise-based apprenticeship. The programme aims to ensure the availability of qualified skilled workers based on the industry requirements. A core objective of this programme is to ensure basic standards for apprentices. Apprenticeship training is a process by which people become skilled workers, through a combination of formal learning and long-term on-the-job training.

We can also see that apprentices function as both the assistants and shadows to their employers. Because of the very nature of apprenticeship, it is possible to learn a great deal about any industry in a rather short amount of time. Furthermore, all of the learning is hands-on rather than theoretical. While apprentices may have to take care of a good deal of menial tasks, they also get the ability to watch professionals in action, which is a great way to learn a trade. One unique aspect of apprenticeship programmes is that, while learning a particular trade, it is also possible to learn the business behind the trade.

The apprenticeship system is both a form of full-time employment and a process of education and training. In this respect, the person who is learning is also earning. A student learns a trade or a profession as well as satisfies the demands and requirements of his employer. Because of this dual character of apprenticeship, the training and education of apprentices must be designed in such a way as to help apprentices meet these two objectives.

There is a growing awareness of the fact that the traditional apprenticeship model is failing to provide the type and quality of training required for skilled work in labour market. It warrants a statutory power for implementation in right spirit and an obligation and mandatory on the key players such as Establishments. However, it should not be a deterrent of skills promotion. Thus, The Apprentices Act has come into force.

1.2 Genesis of Apprenticeship Training Scheme: A Cross-country Experience:

According to U.S. Department of Labour, "Apprenticeship in its simplest term is training for those occupations commonly known as skilled crafts of trades that require a wide and diverse range of skills and knowledge, as well as maturity and independence, of judgment. As practiced by modern industry, apprenticeship is a business like system in which the young worker on entering an industry gains experience, both on and off the job in all the practical and theoretical aspects of the work in a skilled trade. As the apprentice progresses in his training, he acquires new skills and masters the

application of those already learned. This enables him to be productive during his entire period of apprenticeship.

Germany: In Germany, the apprentice training is part of dual education system, and as such form an integral part of many people's working life. Finding employment without having completed an apprenticeship is almost impossible which makes the training mandatory for all. There are 342 recognised trades and the dual system means that apprentices spend about 50-70% of their time in companies and the rest in formal education. Among all the countries, the Germany system of dual training is famous for its success[1]. Thus far, across the globe, in a cross-country comparison, the dual education system, in which, the apprenticeship training is an integral part, is recognised as a popular and successful model of apprenticeship. There is an excellent synergy, coordination and linkage among the key players of this education/apprenticeship program in Germany's dual training program. It is lauded in many ways, such as excellent vertical and horizontal integration of skills/competencies across the spectrum of qualifications/degrees/diplomas etc.

Depending on the profession, they may work for three to four days a week in the company and then spend one or two days at a vocational school (Berutsschule). This is usually the case for trade and crafts people. For other professions require more theoretical learning. The work and school time take place block-wise which usually is in a 12-18 weeks interval. In 2001, two-thirds of young people aged under 22 began an apprenticeship, and 78% of them completed it. In 2004, the government signed a pledge with industrial unions that all companies except very small ones must take an apprentice.

The precise skills and theory taught in German apprenticeships are strictly regulated. The employer is responsible for the entire education programme coordinated by the German Chamber of Commerce. Apprentices obtain a special apprenticeship contract until the end of the education programme. During the programme, it is not allowed to assign the apprentice any regular employment and he is well protected from abrupt dismissal until the programme ends. The declared content and skills of the apprentice profession must be fully provided and taught by the employer. The time taken is also regulated. Each profession takes a different time, usually between 24 and 36 months.

USA: School to work programs usually occurs only in high school. American high schools were introduced in the early 20th century to educate students for all ability and interests in one learning community rather than prepare a small number for college. Traditionally American students are tracked within a wide choice of courses based on ability, with vocational courses tending to be at the

[1] Federal Ministry of Economics and Technology (Germany)
http;//www.bmwi.de

lower end of academic ability and trigonometry and pre-calculus at the upper end[2].

Apprenticeship program in the United States are regulated by the Smith Huges Act(1917). The National Industrial Recovery Act(1933) and National Apprenticeship Act are also known as the "Fitzqerald Act". In the modern era, the number of apprenticeships has declined greatly in North America. Free traditional apprenticeship job training has largely been replaced with on-the-job training(pay as you work), vocational classes, or college courses, which requires the student or an organization to pay for tuition.

In the United States, education officials and non-profit organizations who seek to emulate the apprenticeship system in other nations, have "created school to work" education reforms. They attempt to link academic education to careers. Some programs include job shadowing, watching a real worker for a short period of time, or actually spending significant time at a job at no or reduced pay that would otherwise be spent in academic classes or working at a local business. Some legislators raised the issue of child labour laws for unpaid labour or jobs with hazards. Many U.S. states now require passing a high school graduation examination to ensure that students across all ethnic, gender and income groups possess the same skills. There is a movement in the U.S. to revive vocational education.

U.K. Apprenticeships have a long tradition in the United Kingdom, dating back to around the 12th century and flourishing by the 14th century. The parents or guardians of a minor would agree with a Guild's Master craftsman the conditions for an apprenticeship which would bind the minor for 5-9 years(e.g. from the age of 14 to 21 years). In modern times, apprenticeship became less important, especially as employment in heavy industries and artisan trades declined. Traditional apprenticeships reached their lowest point in the 1970s. However, the training is revitalized and as of 2009, there are 180 trades under apprenticeship programme in UK[3].

They would pay a premium to the craftsman and the contract would be recorded in an indenture. In 1563, the statute of Artificers and Apprentices was passed to regulate and protect the apprenticeship system, forbidding anyone from practicing a trade or craft without first serving a 7 year period as an apprentice to a master(though in practice freemen's sons could negotiate shorter terms).

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[2] Seattle Times
http://archives.seattletimes nwsource.om
http://www.saisd.net/ission.statement

[3] Apprenticeships in U.K. – Their Design, Development and Implementation by Miranda E Pye, Keith C Pye
http://www.employersforapprentices.gov.uk

From 1601, 'Panish' apprenticeships under the Elizabethan Poor Law came to be used as a way of providing for poor, illegitimate and orphaned children of both sexes alongside the regular system of skilled apprenticeships, which tended to provide for boys from slightly more affluent backgrounds. In 1814 compulsory apprenticeship by indenture was abolished.

The mainstay of training in industry has been the apprenticeship system, and the main concern has been to avoid skill shortages in traditionally skilled occupations and higher technicians and engineering professionals, e.g. through the U.K. Industry Training Boards(ITB) set up under the 1964 Act. The aims were to ensure an adequate supply of training at all levels, to improve the quality and quantity of training, and to share the costs of training among employers. The ITBs were empowered to publish training recommendations, which contained the details of the tasks to be learned, the syllabus to be followed, the standards to be reached and vocational courses to be pursued. The ITBs did much to formalize what could have been a haphazard training experience and greatly improved its quality.

Since the 1950s, the UK high technology industry(aerospace, nuclear, oil & gas, automotive, power generation and distribution etc.) trained its higher technicians and professional engineers via traditional indentured apprenticeship system of learning, usually 4-6 year process from aged 16-21. There were four types of traditional apprenticeship, craft, technician, higher technician, and graduate. In 1994, the Government introduced Modern Apprenticeships(since renamed 'Apprenticeships' in England, Wales and Northern Ireland; Scotland has retained "Modern Apprenticeship") based on frameworks that are now desired by Sector Skills Councils. As of 2009, there are over 180 apprenticeship frameworks. The current scheme extends to manufacturing and high technology industry and parts of the service sector with no apprenticeship tradition. A freelance apprenticeship framework first written and proposed by Karen Akroyd in 2008 was also approved and uses freelance professionals to mentor freelance apprentices.

Employers after apprenticeship places an employment contract with their apprentices, but off-the-job training and assessment is wholly funded by the State for apprentices aged between 16 and 18. In England, Government only contributes 50% of the cost of training for apprentices aged 19 and above.

Government funding agencies contract with 'learning providers' to deliver apprenticeships, and may accredit them as a Centre of Vocational Excellence or National Skills Academy. These organizations provide off-the-job tuition and manage the bureaucratic workload associated with the apprenticeships. Providers are mainly private training companies but might

also be further education colleges, voluntary sector organizations, chamber of commerce or employers themselves.

Australia: Australian apprenticeship caters to more than 500 occupations with an intake capacity of nearly four lakh trainees. It is a combination of work with training and can be full-time or part-time or school-based. The training is provided through Skilling and Training Information Centres (STICs)[4]

Australian Apprenticeship skill encompasses all apprenticeships and traineeships. Youth can become apprentices starting at the age of 14 if there are willing employers. The distinction between the two lies mainly between traditional trades and the time it takes to gain the qualification. Australia also has a fairly unique safety net in place for businesses and Australian Apprentices with its Group Training Scheme. It is a safety net, because the Group Training Organisation(GTO) is the employer and provides continuity of employment and training for the Australian Apprentices.

In addition to a safety net, GTO have other benefits such as additional support for both the host employer and the trainee/apprentice through an industry consultant who visits regularly to make sure that the trainee/apprentice are fulfilling their work and training obligation with their host employer. There is an additional benefit of the trainee/apprentice being employed by the GTO reducing the payroll/superannuation and other legislative requirements on the part of host employer who pays as invoiced per agreement.

Canada: In Canada, each province has its own apprentice programme. At the completion of the provincial examination they may write the interprovincial standard examination. British Columbia is one province that uses these exams as provincial exam. This means a qualification for the province will satisfy the whole country. The interprovincial exam questions are agreed upon by all provinces.

France:In France, apprenticeship developed between 9th and 13th centuries, with guilds structured around apprentices, journeymen and master craftsmen; continuing in this way until 1791, when the guilds were suppressed. The first laws regarding apprentices were passed in 1851. From 1919, young people had to take 150 hours of theory and general lessons in their subject a year. This minimum training time rose to 360 hours a year in 1961, and then to 400 hours in 1986.

The first batch of training centres for apprentices set up in 1961 (centres de formation d'apprentis) and in 1971 apprentices were legally made

[4] "Australian Apprenticeships Home Page" www.australianapprenticeships.gov.au

part of professional training. In 1986 the age limit for beginning an apprenticeship was raised from 20 to 25 years. On January 18, 2005, President J. Chirac announced the introduction of a law on a programme for social cohesion comprising the three pillars of employment, housing and equal opportunities. In France, the term apprenticeship often implies manual labour but it also includes other jobs like secretary, manager, engineer, shop assistant. Present intake capacity of trainees is more than 5 lakhs with incentives to establishments to absorb more & more trainees[5].

In an article, "Vocational Training and Career Employment Precariousness in Great Britain, the Netherlands and Sweden", the authors write in the conclusion that 'In other words, the stratification of the educational system and individual attainments within this system is consistently related to precariousness at various stages of the work career. In contrast, the results from the analyses suggest that the impact of vocational training on labour market precariousness varies over the work career.

The basic hypothesis in this article has been that a greater degree of specific training would be advantageous at the initial stage of the career, as it would give a clear indication of skills when other information was lacking. Thus, at the start of a work career, any form of vocational training is beneficial. However, once employed, the type of training previously acquired is of little importance. Somewhat surprisingly, there is a reduced unemployment risk related to narrow vocational training.

The Act 41 of 1986 says that: 'The vocationalisation of higher secondary education has been attempted in this country as part of the efforts to provide meaningful education leading to suitable employment opportunities at the appropriate levels. It is also hoped that this would relieve the pressure on our higher education system. Vocationalisation implies education through work experience and hence adequate facilities are to be provided for the vocational stream to learn the practical aspects of the subject through field studies and to supplement the institutional learning.

The above mentioned developed countries are implementing the Apprenticeship Training Programme successfully as compared to the developing countries. The present challenge in front of developing countries is to blend these skills at work and in technical training. This will require continued work on defining what is needed. When the Apprenticeship system sits in the drivers' seat in defining what skills are needed, the system can then turn to service providers to fulfil those needs more directly. This approach is

[5] L'Apprenti, in French
http://www.lapprenti.com/home.asp

respectful of adults who usually have limited resources to prepare for success. It may also motivate reluctant participants to gain confidence that essential skills training relates to their goal of completing apprenticeship.

Apprenticeship is a system of training a new generation of practitioners of a skill/trade. Most of their training is done on the job while working for a employer who helps the apprentices learn their trade, in exchange for their continuing labour for an agreed period after they become skilled. Theoretical education may also be involved, informally via the workplace and/or by attending vocational schools while still being paid by the employer.

The system of apprenticeship was first conceived and derived in India from the starting of the civilization in all the traditional vocations, trades, and skills. In other countries, it was developed in the later Middle Age and came to be supervised by craft guilds and town government[6]. Subsequently, many countries have evolved and formalized their own system of apprenticeship training. Examples of some of the developed countries are given below:

1.3 India's Apprenticeship Training Scheme(ATS): Introduction of Apprentice Act:

Nearly a century ago, policy makers had envisioned that large pools of human resource are entering into labour market every year. Majority of them are from rural areas and school drop-outs without any functional and marketable skills. To equip them with vocational and functional skills, it was thought of linking this large labour force with the industrial establishments for learning of several skills and trades. This integration was done through the Apprentice Act, 1961 giving an opportunity to the youth in the age group of 14 to 21 years to practically learn the skills while they are paid wages for a stipulated period ranging from six months to four years depending on the type of skill and their previous exposure to formal vocational training.

Most of the training is done on-the-job while working for an employer who helps the apprentices learn their trade, in exchange for their continuing labour for an agreed period after they become skilled. Rapid industrialization during 1960s has led to a demand for new set of skills in various sectors of economy. In order to augment the demand of skilled labour in the emerging industrial activities, and with a view to imparting tangible skills-in-demand to the aspiring youth(school leavers and drop outs) entering into the labour market, the Government of India enacted Apprenticeship Training Scheme (ATS) through The Apprentices Act, 1961 to utilize and provide training facilities in establishments.

[6] Available information at http://en.wikipedia.org/wiki/Apprenticeship on source and genesis of apprenticeship

Thus, The Apprentices Act, 1961 was enacted with the following objectives:-

- To regulate the programme of training of apprentices in the industry so as to conform to the prescribed syllabi, period of training, etc. as laid down by the Central Apprenticeship Council; and

- To utilize fully the facilities available in the industry for imparting practical training with a view to meeting the requirements of skilled manpower for industry, in order to achieve synergy among all the stakeholders.

The scheme is in vogue in more than 34,000 establishments, most of them in private enterprises, cutting across 250 sectors, and imparting skills/vocations in more than 188 trades with a capacity utilization of more than 2.5 lakh apprentices every year. The scheme is operational through Ministry of Skill Development and Entrepreneurship by its six regional centres, known as Regional Directorates of Apprentice Training(RDAT). Directorate of Employment & Training(DGE&T) is the supervising body at the apex level, and conducts examinations through an independent body called National Council of vocational Training(NCVT) in all trades after successful completion of apprentice training and awards certificates to successful apprentices. Central Apprenticeship Council(CAC) is the apex statutory tripartite body to advise the Government on policies, norms, and standards, and their implementation and execution at each stage. There is a well-knit structure of implementation upto the district level and tapping each & every Industrial Training Institute/Centre(ITI/ITC) in the country.

1.4 Amendments to Apprenticeship Training Scheme Act, 1961

The Act was amended in 1973 to include training of Graduate and Diploma Engineers as "Graduate" & "Technician" Apprentices. The Act was further amended in 1986 to bring within its purview the training of the 10+2 vocational stream as "Technician(Vocational)" Apprentices. In 1997, various sections of the Act were further amended as regards definition of “establishment” and “worker”, termination of apprenticeship contract, number of apprentices for a designated trade, practical and basic training of apprentices, obligation of employers, penalty for contravening the provisions of the Act and cognizance of offences.

Various sections of the Act were again amended in 2008 as regards reservation for candidates belonging to other backward castes(OBCs), expenditure on related instructions to be imparted at the cost of employer and the employer shall, when so required, afford all facilities for imparting such instructions, and to provide flexibility in respect of ratios prescribed for apprenticeship seats. The main provisions of the Act are:-

Central Apprenticeship Council(CAC) has been established as an apex statutory tripartite body to advise the Government on laying down of policies and prescribing norms and standards in respect of Apprenticeship Training Scheme(ATS). Union Labour and Employment Minister is the Chairman, and the Minister of State for Education in the Union Ministry of HRD, is the Vice Chairman of CAC.

As per The Apprentices Act 1961, as amended in later years, certain category of establishments as identified by the BOAT/BOPT of the concerned region(s) are identified to engage certain number of freshly passed out Engineering Graduate, Diploma holder and Technician(Vocational) Apprentices for one year Apprenticeship training without guarantee of job after completion of training. However, employers are advised to give preference to ex-apprentices for their own benefit. The salient features of apprenticeship training are as follows:

- Apprentices are given opportunity and exposure to the latest techniques, processes, and technology of the establishments during the tenure of Training
- Practical exposure in their field of specialization
- Students are allowed to discontinue Training on securing job
- Upon successful completion of one year training, the trainees are awarded a Completion Certificate by BOAT/BOPT on the recommendations of the establishment. This certificate is treated as one year industrial/practical experience for securing a permanent job elsewhere.

Employers/Establishments engage fresh batch of trainees every year, short-listed and found eligible as per the prevailing practice, and approved by BOAT/BOPT. Employers are required to pay the stipend as prescribed by the Government of India and 50% of the minimum rate is reimbursed to the employers on quarterly/half-yearly/yearly basis.

No person shall be engaged as an apprentice to undergo apprenticeship training in a designated trade unless such a person or his/her guardian(if he/she is a minor) has entered into a contract of apprenticeship with the employer.

Every employer shall have the following obligations in relation to an apprentice, namely:-

i) To provide the apprentice with training in his/her trade in accordance with the provisions of this Act, and the rules made there under;

ii) To ensure that a person who possesses the prescribed qualifications in the trade is placed in charge of the training of the apprentice;

iii) To provide adequate instructional staff, possessing such qualifications as may be prescribed, for imparting practical and theoretical training and facilities for trade test of apprentices; and

iv) To carry out his/her obligations under the contract of apprenticeship.

The employer shall pay to every apprentice during the period of apprenticeship training such stipend at a rate not less than the prescribed minimum rate, or the rate which was being paid by the employer on 1st January, 1970 to the category of apprentices under which such apprentice falls, whichever is higher, as may be specified in the contract of apprenticeship and the stipend so specified shall be paid at such intervals and subject to such conditions as may be prescribed. However, an apprentice shall not be paid by his/her employer on the basis of piece work nor shall he/she be required to take part in any output bonus or other incentive scheme.

The weekly and daily hours of work of an apprentice while undergoing practical training in a workshop shall be such as may be prescribed. No apprentice shall be required or allowed to work overtime except with the approval of the Apprenticeship Adviser who shall not grant such approval unless he/she is satisfied that such overtime is in the interest of the training of the apprentice or in the public interest. An apprentice shall be entitled to such leave as may be prescribed and to such holidays as are observed in the establishments in which he/she is undergoing training.

CHAPTER – II

NATIONAL APPRENTICESHIP TRAINING SCHEME (NATS):

2.1 Genesis & Significance of NATIONAL APPRENTICESHIP TRAINING SCHEME (NATS):

India is a country with strong formal education sector and high levels of educational attainment. In the domain of professional education, a significant amount of analytical knowledge is embedded in the degrees/diplomas which were giving more value to qualification/certification than the actual skills needed in an industry. This is perceived as skill-deficient manpower entering into labour market, and lead to complaints from Establishments that the professional manpower is "not industry-ready". As a result there were series of brainstorming sessions/interactions among the stakeholders, mainly, among the supply-side, and demand-side players of the professional/technical/vocational skilled human resources. This problem was well documented in the empirical research reports of skills and employment, employability etc. One of the available literature[7] describes the above problem as India's labour transitions, as illustrated in three broad steps such as: (a). Matching(connecting supply to demand - Employment reform), (b). Mismatch(repairing supply for demand- Employability reform), (c). Pipeline(preparing supply for demand - Education reform, a fundamental reforms warranting urgent structural changes at educational level).

Development of human resources is crucial for the industrial development of any nation. Upgradation of skills is an important component of human resource development policy. Training imparted in institutions alone is not sufficient for acquisition of skills and it needs to be supplemented by training in the actual work environment.

Long before the above problems were identified, Government of India, with its vision for development of technical & skilled manpower for growing industrial sector, has brought policy framework to fill the gap between demand-supply of Industry-ready human Resources, and to increase the degree of employability in the booming industrial sector, especially manufacturing sector. One such landmark policy framework was introduction of The Apprentices Act, 1961 to prepare skilled workforce to industrial sector. This Act gives an opportunity for vocational graduates at ITI to gain extra skills at the enterprise level by direct involvement in production & other processes at the work site.

[7] India Labour Report-2008: TeamLease Report

Advancement in industrial processes and technologies from mid 1970s has changed the dimensions of skilled manpower, need of new-age skilled technicians/engineers etc. Due to continuous & rapid changes in technologies, processes, and due to India's transformation from traditional industrial technologies to modern/high-tech establishments, the workforce needs at high skill-level has become more dynamic. Though, there was a network of interaction among Industries and Establishments, to mould the syllabi, and to make the curriculum industry oriented, there were many gaps in the system. As a result, it was felt by all the stakeholders at the demand and supply side of skilled workforce, that there is a genuine need for exposure(to a reasonable duration) of processes, techniques, technologies of the modern establishments to the outgoing graduates of all technical institutes, i.e., engineering colleges & polytechnics. This was felt inevitable to the new-breed of engineers/technicians to make them "industry-ready", and to mould their academic knowledge with practical exposure in a synergetic manner in the high-tech environment of processes/technologies.

After taking cognizance of the above facts & developments, Government of India has amended the Act in 1973 to include all graduates from Engineering Colleges and Polytechnics as Apprentice Trainees, who are called as Graduate Apprentices(GA), and Technician Apprentices(TA). Later on, the Act was amended further in 1986 to include all pass-outs from Vocational Schools who are known as Technician(Vocational) Apprentices. Need of this particular segment of Technician(Vocational) Apprentice's is felt in those times of mid 80's keeping in view the skill-ecosystem & intensity of skills prevailing at that point of time. Later on, the Scheme was reviewed, and based on feedback; The Apprentices Act was amended during 2015 with a focus on improving transparency, execution, and to remove the bottlenecks at implementation stage.

As per the provisions of The Apprentices Act, 1961 as amended in 1973, & 1986, it is statutory obligation on the part of every employer (State & Central Govt. Depts/undertakings/autonomous organizations, and Private organizations etc.) to engage a prescribed number of Degree/Diploma holders in Engineering/Technology and H.S Vocational Certificate Holders in designated subject fields as approved by Central Apprenticeship Council as (i) Graduate, (ii) Technician and (iii) Technician(Vocational) Apprentices under the Act. Execution & implementation of this amended act is done by MHRD through 4 Regional Boards, i.e. in Southern Region, Northern Region, Northern Region and Eastern Region located at Chennai, Kanpur, Mumbai, and Kolkata respectively. The Boards at South, North, and Northern Region are called Board of Apprenticeship Training(BOAT), and the one at Eastern Region is called Board of Practical Training(BOPT). All these regional boards are autonomous bodies under the administrative control of MHRD, and the anchoring & regulation of the Act is under the Ministry of Skill Development &

Entrepreneurship, and Central Apprenticeship Council(CAC) which is an apex Statutory Body under The Apprentices Act, 1961.

This particular segment of The Apprentices Act manned by MHRD is popularly called National Apprenticeship Training Scheme(NATS).

2.2 Objectives of NATS:

Main objectives of NATS are as follows[8]:

i. To fulfill/match, any gap, in so far as the practical/hands on experience of fresh graduate engineers, diploma holders in engineering and 10+2 vocational pass-outs are concerned, which they do not acquire during their regular studies under normal practice.

ii. To establish liaison between the industries and technical institutions to improve the quality of technical education and develop human resource for the industries.

iii. To secure facilities for training in different establishments, both in private and public sector organizations for the products of technical institutions.

iv. To make selections for placement from among the applicants who wish to undergo training

v. To prepare training modules for the trainees in consultation with the industry, trainees and other agencies concerned

vi. To arrange for dissemination of information on various aspects of practical training through lectures, films and other media of communications

vii. To award certificates as may be appropriate to those who successfully complete the training course.

viii. To enhance the technical competency to improve confidence level of qualified youth.

[8] As per the literature on NATS available with MHRD, and Four Regional BOATs and their respective websites.

2.3 Important Features of NATS:

Educational Qualification:

1. Graduate Apprentices: Degree in Engg/Tech from a college/university/institute recognized by a University(university means any university recognized/empowered to award such degrees. Institute means any autonomous institute, deemed to be university, and professional bodies recognized by central government).

2. Technician Apprentice: Diploma in Engg/Tech granted by a State Board/Council of Technical Education/University/Institute recognized by State/Central Govt.

3. Technician(Vocational) Apprentice: A Certificate in vocational course involving two years of study after the completion of the secondary stage of school education recognized by the State Council of Vocational Education/AICTE/State Board of Technical Education.

   Above categories of apprentices also covers sandwich courses in each of the above categories. The period of apprenticeship training of sandwich course appendices is as per curriculum.

   Period of Training & Stipend:

   Tenure of the above three types of apprenticeship training is one year. Monthly rate of stipend is Rs. 4,984/- , Rs. 3,542/-and Rs. 2,758/- for GA, TA, and T(V)A respectively.

   Selection Procedure & No. of Seats allocation:

   Every establishment is allotted a variable quota of apprentices to be accommodated based on the number of skilled workforce. It is in the range of 2.5% to 10% of the total workforce.

   All eligible and desirous candidates are to enroll for apprenticeship by registering through a centralized web portal (https://portal.mhrdnats.gov.in) and BOAT(SR) web link (http://www.apprentice-engineer.com/StudentEnrollment.pdf). The BOAT(SR) will facilitate and counsel the candidates based on the options of the candidates to enroll in the Establishments as per the prevailing norms and rules. Candidates are identified either directly or by formal/oral selection methods by Establishments.

Other Operational Framework of NATS:

Stipend to the extent of 50% is reimbursable to Establishments from the BOAT/BOPT. Apprentice trainees are governed by salient features of ATS Act for the duration of the training. Monitoring of performance is recorded on regular intervals and through stipulated proformas. Training Cell/Training Officers are designated as responsible officers to promote skill enhancement to such trainees. At the end of the tenure, Trainees are awarded Proficiency Certificate by BOAT/BOPT on the recommendations of the Establishment. This one year certificate is treated at par with a full-fledged experience certificate, and this facilitates skill development of graduates for a gainful and suitable employment in the labour market.

Thus, the above NATS, through ATS Acts(1971,1983, and 2015) regulates the programme of training of apprentices in the industry so as to conform to the syllabi, period of training etc. as laid down by the Central Apprenticeship Council and to utilise fully the facilities available in industry for imparting practical training with a view to meet the requirements of skilled manpower for industry. This scheme plays a synergetic role, since on the one side, industry gets freshly passed-out technocrats who can be trained according to the industry's own technical need, on the other side, freshly passed-out candidates get practical exposure to enhance their technical/managerial skills.

2.4 Implementation Process & Operational Mechanism:

The MHRD is responsible for implementation of the Act in respect of the above cited categories of apprentices in all PSU/Central, State Government and private undertakings. It is done through four Regional Boards of Apprenticeship Training located at Kanpur, Kolkata, Mumbai, and Chennai. The Regional Boards at Chennai, Mumbai and Kanpur are known as Board of Apprenticeship Training(BOAT) and the Eastern Region Board at Kolkata is known as Board of practical Training(BOPT). Each Board is headed by a Director who acts as Regional Central Apprenticeship Adviser for the apprentices governed by MHRD.

Central Apprenticeship Council is the apex statutory body to advise the Government on laying down of policies and prescribing norms & standards in respect of Apprenticeship Training Scheme. It is a tripartite body constituted by members of Government of Central and State/UTs, Employers and Trade Unions. There are four categories of apprentices i.e., Trade apprentice under DGE&T and Graduate, Technician and Technician (Vocational) Apprentices under MHRD.

There are 162 trades that have been designated for apprenticeship training for graduates and technicians, whereas there are 137 trades for technician(vocational) trade.

Fresh Engineering Graduates, Diploma holders and 10+2 passed Vocational certificate holders have to apply to the respective BOAT/BOPT through the prescribed official channels(either through the website or by physical mode of application) within three years after passing out their final examination. After scrutinizing the applications as per the governing rules, the candidates are allocated to different organizations as per notified seats and the training facilities available for one year Apprenticeship training.

During one year of training, the employers chalk out a training program depending upon the skill requirement suited to the job in the industry. Such training program may be prepared in consultation with the office of the Board.

The employers, thus identify the candidates after scrutiny as per the prevailing norms. As and when the candidates join the establishment for training, the establishment has to complete the formalities, and facilitate the enrolled candidates in filling up of "Apprenticeship Contract – Registration Card" and send the details to BOAT within the stipulated time period. During training period employers are liable to pay stipend to Apprentices as prescribed by Government of India from time to time.

After getting the registration numbers and paying stipend to the Apprentices at the rates not less than the stipulated amount(as stated in previous sections), employers can claim 50% reimbursement of the minimum prescribed rate of stipend by submitting the prescribed proforma/forms to BOAT. After successful completion of training, all the trainees will send the information through directly/establishment to the concerned BOAT/BOPT and BOAT/BOPT will issue a Certificate based on the recommendation of Establishment.

As stated in previous sections, through the above mechanism of training through NATS, the candidates receive tangible benefits, some of which are as follows: (a) the national policy on education has stated that, practical training should form an integral part of technical education; (b) apprenticeship training is the important component of technical education to bridge the gap in so far as the practical/hands on experience of fresh graduate engineers, diploma holders in engineering and 10+2 vocational pass-outs are concerned which they do not acquire during their regular studies; (c) bridging the gap of last mile skilling at the establishment, which is otherwise deprived at Institutional level; and (d) providing exposure and opportunity to graduates to the practical aspects of their professional path, which is a stepping stone of their career.

The explicit and tangible benefits for the entire country in general and to the establishments/industries in particular are many. Some of them are (i) training a pool of future-ready/job-ready human resources on latest technologies, (ii) cost-effective training facilities at the Industries which are otherwise not available at College level, (iii) preparing demand-driven skilled human resources with sufficient exposure in industries, (iv) enhancing the productivity, and matching of skills at establishment level etc.

2.5 Statistics of NATS at a Glance:

At the national Level, as per the official website[9], total of 12,575 establishments were registered/recognized as eligible and fully equipped places of training of apprentices of NATS. These establishments having the cumulative capacity of training to cater to more than 2.5 lakh outgoing graduates from technical institutes (predominantly Engineering Colleges and Polytechnics). To augment these sets, there are 2,846 Institutes/Colleges/Schools were listed as registered Institutes, though, every graduate coming out of universe of such colleges is eligible for enrollment under NATS.

Statistics of NATS of BOAT-Southern Region:

BOAT(SR) with jurisdiction over 5 states, and one UT spreading more than 1,000 km from one corner to another is implementing the NATS in letter & spirit with huge outreach in terms of tapping the establishments, Institutions, and unemployed graduates from Engineering colleges, Polytechnics, and Vocational Schools. Gist of milestones achieved by BOAT(SR)[10] vis-à-vis the landmarks of achievements in terms of statistics of coverage; growth and implementation are given in following few tables.

Table-2.1 Growth of Apprentices Seats during last 5 Years:

	GRADUATE						TECHNICIAN					
YEAR	AP&TL	KN	KL	TN	PY	TOTAL	AP&TL	KN	KL	TN	PY	TOTAL
2012-13	2881	3656	2170	6443	89	15239	1762	2537	1314	14415	514	20542
2013	5144	405	277	1104	76	2310	1709	298	151	1750	40	2412

[9] Latest figures available at MHRD's official website, http://mhrdnats.gov.in/
[10] Annual Report of BOAT(SR): 2016-17

-14		7	9	7		3		9	9	7	0	4
2014 -15	5135	5011	3918	11925	58	26047	1821	3192	1674	18489	468	25644
2015 -16	4444	4817	4575	13289	188	27313	2301	4074	1696	21867	728	30666
2016 -17	3960	4580	2120	14556	84	25300	1945	3432	1755	19196	793	27121

AP&TL: Andhra Pradesh & Telangana ;
KN: Karnataka, KL: Kerala, TN: Tamil Nadu, PY: Pondicherry

Table-2.2 Growth of Coverage of Establishments during the last 5 Years:

	CENTRAL						STATE						PRIVATE					
YEAR	AP&TL	KN	KL	TN	PY	TOTAL	AP&TL	KN	KL	TN	PY	TOTAL	AP&TL	KN	KL	TN	PY	TOTAL
2012-13	40	43	82	68	4	237	51	63	193	141	14	462	321	246	165	1146	80	1958
2013-14	40	43	94	69	4	250	51	63	205	141	14	474	331	246	176	1181	80	2014
2014-15	40	44	96	69	4	253	51	63	206	141	14	475	359	339	182	1226	80	2186
2015-16	41	46	96	69	4	256	51	63	206	141	14	475	386	361	182	1250	84	2263
2016-17	41	46	96	69	4	256	51	63	206	141	14	475	398	361	182	1250	84	2275

Table-2.3: Geographical Outreach & Utilisation of Seats for the Year 2016-17
(Total figures including Graduate Apprentice + Technician Apprentice)

State/UT	Identified	Utilised	Percentage Utilisation
Andhra Pradesh & Telangana	9364	5905	63.06
Karnataka	12534	8012	63.92
Kerala	6771	3875	57.29
Tamil Nadu	31438	33752	107.37
Puducherry	1106	877	79.30
Total	61213	52421	85.64

Above statistics reveals the workload of BOAT (SR) that has increased enormously to the extent of more than 50% in handling the total placements of apprentices in various establishments(Table 2.1). In case of establishments also there is a significant increase of coverage, though the physical & infrastructural strength of Board has remained stagnant. In spite of the above constraints of increase in workload, and vast geographical outreach of the region, the performance of BOAT (SR) in utility of seats is fully met in terms of

overall seat utilization. However, there is heavy imbalances and inter-state variations in utilization of state-wise seats as shown in Table 2.3. These gaps and bottlenecks, apart from many issues are leading to thorough evaluation of the system, that are taken up in next chapters.

CHAPTER – III

EVALUATION OF NATS OF BOAT (SOUTHERN REGION)

3.1 Need for Evaluation of NATS:

Apprenticeship Scheme in general and NATS in particular is a powerful vehicle for skill development as it facilitates "learning by earning" and "learning by doing & keen observation". It is notable to mention here that, NATS is catering to high-skill domain, and the trainees are fully equipped with analytical and academic background to grasp the "actual knowledge and suitable skills" at the workplace with minimum exposure, and tenure. Therefore, given an opportunity of exposure to practical environment, for a period of one year is a significant experience to compete in the labour market for a gainful job. Besides, in the changing dynamics of labour market, there is a shift from degree/certificate based qualification to competency/skill based criteria. Therefore, NATS plays a vital role in last mile skilling of fresh graduates, who are otherwise deprived of practical exposure.

But India has a substantially lower number of apprentices not only relative to its potential but also as compared to many countries with much smaller labour forces and population. Our formal education and training system is not producing "work ready" youth and they need exposure to actual working conditions and real time situations of production and processes. This is inevitable in the changing dynamics of cutting- edge technology, modern processes, production techniques etc.

Therefore, the Government of India has amended The Apprenticeship Act, 1961 during the year 1973 to facilitate the graduates of technical degree and diploma in various professional disciplines, and to acquaint them with first-hand experience in industrial and productive processes concerned to their disciplines. This Act has built a link between Institutes and Establishments creating a pool of avenues for skill enhancement for fresh pass-outs. The Act through NATS has created level playing field for graduates and diploma holders from Institutions with poor infrastructure to gain practical knowledge of industrial processes and use that knowledge into their activities without any difficulty.

Later on, the scope of the scheme was further enlarged by the amendment of the Act during 1986 to cover pass-outs of 10+2 to strengthen the vocational skill base of the youth entering into the labour market. The vocationalization of higher secondary education has been attempted in this country as a part of the efforts to provide meaningful & competency-based education leading to suitable employment opportunities at appropriate levels. It is also hoped that this would relieve the pressure on our higher education.

Adequate facilities are to be provided to the vocational stream for learning the practical aspects of the subject through field studies and to supplement the institutional learning.

3.2 NATS as a Potential Vehicle of Skill Enhancement:

Statistics & Tables in the previous chapter reveals the capacity utilization of the seats which can be seen as wastage of capacity of seats to a considerable level. However, the scheme has scope and potential to bring out more efficacy and efficiency. For example, the statistical data show that the capacity utilization of the scheme is around 57%, though the eligible youth joining labour force every year is more than 10 times the intake capacity of NATS. Among the three categories of trainees, the capacity utilization is less than half in the case of Technician and Technician (vocational). There are also considerable dropouts in the midst of the training. There are apparent signals that Technician(Voc) Apprentice segment is not meeting its objectives. Seat capacity is going waste in large number of private establishments, which are averse to the NATS, and participating only in letter but not in spirit.

There were also signals of low-absorption rate of pass-outs within the establishments where the training took place, though there is ample opportunity for such absorption.

Through amendments to The ATS Act in 2015, several clauses were altered to make the entire implementation easy, transparent, more practical and facilitating, keeping in view the establishments in private domain and with a focus on small enterprises in private sector. Procedural formalities were simplified, and a centralized web portal is in place that coordinates all three stakeholders(Apprentices, BOAT and Establishments) smoothly. Rigid & impractical clauses such as imprisonment for non-conformity to the Act were removed in The Act 2015. There were also empirical evidences that BOAT(SR) is adopting innovative methods[11] to bring about more effectiveness of NATS, i.e., (i) conducting Industry-Institute interactions and bringing synergy among Establishments and Apprentices, (ii) conducting Bharti Melas in major industrial hubs/towns, and (iii) sensitizing NATS at Institutional level by conducting Seminars/Workshops by roping in eminent personalities from Industry & Institutes. However, as stated in earlier sections, there is tremendous scope for further improvement, e.g. enhancing the enrollment at Establishments.

Against this background, BOAT(Southern Region) has requested NILERD to conduct a study on efficacy and impact of NATS of BOAT(SR).

[11] Interaction of Research Team from NILERD with the stakeholders in all the States & UTs, i.e., Establishments, and Institutes acknowledged the laudable efforts of BOAT(SR) in marketing of NATS among the outgoing students & graduates

The present study is intended to further examine the issues thoroughly going beyond the recognition of the problem and to probe the issues in depth by taking into confidence all the stakeholders, via brainstorming sessions, structured questionnaires, focused group discussions etc. The study intends to identify and find out the areas for further exploration to improve the effectiveness of NATS by tapping all the stakeholders of the scheme, i.e., Apprentices(all types On-roll, and passed out), Establishments (of all types/categories), Institutes(all types) who are the prime stakeholders of the NATS. In view of the above, the following issues and objectives are framed for the study.

3.3 Issues covered

There are wide ranges of issues concerned with all the stakeholders of the Scheme i.e. BOAT(SR), Employers, mainly the Establishments who are taking apprentices under this scheme and the establishments identified but not engaging apprentices, on-roll apprentices and successfully passed out apprentices(who have completed apprenticeship training). Institutes of all types were also tapped to seek their views on NATS. The issues studied in detail are as follows:

1. To examine the implementation process of the scheme at BOAT(SR) level i.e., administrative issues of implementation;

2. To identify regulatory hurdles hampering training and functional efficiency of employers;

3. To identify measures to enhance the popularity of the scheme;

4. To assess the training infrastructure at workplace ;

5. To identify the transparency measures for adopting course curriculum, modification, addition of new skills, syllabi etc.;

6. To examine the adequacy of the funds given by Govt. of India as per the needs of Apprentices;

7. To focus on the range of skill development efforts made under the scheme in order to accrue optimum benefits by the industries (employers);

8. To assess the popularity of trades, participation of SC/ST, women in the programme;

9. To gauge success rate of the scheme by capturing the figures of successful pass-outs; and

10. To enquire into the congenial atmosphere for learning, and problems faced by trainees at shop-floor/worksite level.

3.4 Objectives of the Study:

The objectives of the study are to study the efficacy & effectiveness of NATS, inter alia;

- To assess the impact of Apprenticeship Training on employment, skills of targeted beneficiaries;

- To identify the bottlenecks in implementation of Apprenticeship Programme and the Act;

- To recommend remedial steps to improve the effectiveness of NATS.

3.5 Scope and Coverage:

The study covered all the States falling under the jurisdiction of BOAT(SR). Key stakeholders of NATS, i.e., (i) industrial establishments(& Training Centers) inter-alia covering PSU(Central & State), private Industries spreading in all geographical parts of the states, and (ii) the prime stakeholders(like on-roll apprentices and those who have completed apprenticeship training) concerned with the objectives and issues of the study i.e. apprenticeship trainees, and (iii) Educational Institutes(Engineering Colleges/Polytechnics/High Schools of Vocational courses).

3.6 Methodology

In order to address the above objectives, the study covered extensively all the states & UTs. In each state, two places(industrially active zone, and industrially dormant zone) were covered in the field survey. The establishments were enlisted by state and by type of management. From each state, the industries were classified broadly into (i) central, (ii) state, and (iii) private units for sampling purpose.

Among the three types of establishments, the three categories of Apprentices((i) graduates, (ii) technicians and (iii) technicians(vocational)), and also those establishments who do not have taken apprentices(as Control Group) were also covered in our sample to represent universe. The opinions were collected from on-roll apprentices(originally intended to be on a proportion of 2:2:1) and those who have completed apprenticeship training

during the previous years(not more than 3 years old, i.e., the batches of 2016-17, 2015-16, 2014-15) on random basis. Primary data was collected through structured & open-ended questionnaires canvassed among all the stakeholders.

Focused Group Discussions(FGDs):

As part of methodology, FGDs are being conducted with major stakeholders, i.e., Establishments, Institutes, On-roll Trainees, and Apprentices who successfully completed the training. Brainstorming sessions were held with Training/HR Managers of Establishments, Placement-Incharges/Professors of Institutes, and the on-roll and passed-out trainees of NATS. In addition, BOAT(SR) has given complete insights into the NATS scheme by rigorous interactions, and secondary information with all the issues and areas for further improvement of NATS in its implementation.

Design of Field Surveys & Sampling of Stakeholders:

The field survey is designed in order to cover all the states & UTs, and Establishments & Institutions in all such places of coverage. Following are the criteria of fixing the variables of sampling.

1. Identification of Places in each state and UT.

   In each state, two places, i.e., (i) industrially active zones and (ii) zones not so hectic & comparatively with low density of establishments were selected. These two zones will represent most of the industrial activity, with location of major establishments under Govt. and Private sector. Primarily, these two zones of the states will be two centres of employment creation, with hectic economic activity.

2. Identification of Establishments in each state:

   After having identified zones and states, list of establishments in those zones/districts were identified based on the intake capacity of NATS trainees. The establishments were such that they represent CPSU & SPSUs, large & medium private establishments, automobile/manufacturing sector/processing sectors, service sector/IT & IT-enabled services etc.

3. On-roll Trainees & successfully passed-out:

   In each of the establishments, the on-roll trainees, and the pass-outs(successfully completed trainees) were located.

4. Selection of Institutes/Colleges/Schools:

   In all such places of Establishments, the Institutes in the nearby places were selected with due weightage to type of management, i.e. Govt/Autonomous/Self-financing etc.

Above selection of stakeholders is done from the universe of the data pertaining to Southern Region. The details of such data, i.e., (i) Establishments, (ii) On-roll Trainees, (iii) Pass-out Apprentices, (iv) Institutions, and (v) Faculty of Institutes is illustrated in the following table.

Table 3.1 Details of the Responses received from the sampled stakeholders.

SNo.	Type of Responded Staekholder/Beneficiary	No. of respondents	Remarks
1	Establishments	40	Responses from (i)CPSU, Private Units, (ii) manufacturing and other Other units.
2	On-roll NATS Trainees	140	Combination of gender, sector, type of activity
3	Ex-NATS Trainees	58	--do--
4	Institutes	9	Engineering Colleges and Polytechnics
5	Faculty of Institutes	14	Blend of Govt, Autonomous and Pvt Institutes.
	Total	261	Quantum of stakeholders coverage.

Above sampling is the total sample for the entire Southern Region irrespective of each individual state/UT.

Several factors directly indicating the efficacy of NATS were incorporated in the schedules of primary data collection through structured questionnaires among different stakeholders. Details of the attributes explored through primary data collection are as follows:

Training Depts/Training Units of Establishments where regular NATS Trainees are posted:

Perception about the in-built qualities of trainees towards learning, thinking, skill-oriented aptitude, opinion about the Apprentice Act, and NATS, feedback on policy changes needed, syllabi, trades, introduction of new skills, trades, pedagogy, transparency, compulsions, difficulties etc. Coverage was also done on wide ranging issues such as course curriculum, type of training, stipend, qualification etc.

Management/HR Dept of Employers (Establishments):

Difficulties faced in compliance of the Act and amendments needed, why Employers are averse to absorb the trainees, why training is not

attractive to trainees vis-à-vis skills, syllabus, identification of laws/by-laws contravening the Apprenticeship Scheme, reasons for dropout, failure, non-utility of training seats by trainees, etc. were among the many factors explored with the Establishments.

On-roll NATS Trainees (Beneficiaries) – currently undergoing Training:

Feedback on type and quality of training, facilities at training centre, and workplace, curriculum, syllabi, trade, skills, stipend, work output, quality of training, incentives for learning, work, factory environment, co-workers, attitudes, cooperation, views on skill, employment after training, earlier background of trainees, previous training, ITI background etc. are part of host of issues probed with the main beneficiaries of NATS, i.e., trainees.

Ex-NATS Trainees - Successfully Completed the Training:

Present status, relation of present job with skills attained through apprentice training, satisfaction level of training, need for flexibility/changes, stipend, poor absorption within the workplace are few of the factor examined.

In addition, there were focus group discussions(FGDs) with the implementing officials at State/Regional level, key informants at establishments eliciting their views, opinions to enhance the effectiveness of the scheme. Data from the rigorous interactions was collated to identify the strengths and bottlenecks impinging the NATS.

Limitations of the Study:

Establishments are widely spread in each state. It is very difficult to cover each of the establishments. Minimum two to three visits at each establishment are compulsory to collect the required information. Collecting information from Central Government Institutions is cumbersome. State Government establishments have lots of branches, due to which the required information is not available at one place.

In private establishments permission from the management is cumbersome to enable access to the on-roll apprentices. Central and State Government institutions are deploying the apprentices at different places of their locations, thus making it difficult to contact these apprentices for interviewing.

Specifically, regarding Tracer (Pass-out) Apprentices, the study team faced a lot of problems, because establishments are not recruiting maximum number of successful apprentices. The team has collected the list of successful apprentices from the concerned establishments. Out of which, around 30 percent of pass-out apprentices could be contacted. Many pass-out

trainees(beneficiaries) were unevenly distributed in different establishments in far away places. So, interaction with those ex-trainees was very difficult as their address, and contact numbers were also changed.

However, all possible channels were utilized to gather the data and to assess the ground level issues and problems in order to assess the overall impact of the scheme.

CHAPTER – IV

SURVEY OF ESTABLISHMENTS: Nurturing Skill Development

4.1 Introduction:

Establishments are the important stakeholders contributing to the promotion of NATS. They are the vehicles for realization of career growth among the aspiring youth with technical & vocational background. Establishments also play vital role in bridging the technological gaps among the technical graduates coming out of the Institutions. In the present era of rapid developments in technology, and innovative practices adopted in the establishments, the Institutions, however elite they may be, are unable to mould the syllabi in tune with the latest developments. As a result, the pass-outs coming out with the qualifications are unable to cope with the demands of competencies from the establishments. This has enforced the aspiring pass-outs to have reasonable exposure in the production & process environment to compliment their academic knowledge with the practically acquired skills. This will automatically eliminate the deficiencies associated with the educational institutions, and enriches the prosperous skilled manpower to cope with the advanced techniques in the establishments.

In general, the qualified manpower coming out of Institutions are not well received by the Establishments due to several apprehensions about the intensity of skills, competencies, analytical knowledge gained by the outgoing graduates. A reasonable amount of practical experience in an industrial establishment will accomplish the desired and needed tasks for any technical personnel. Another important reason, the big, and heavy industries will always adopt the latest technologies, and innovative practices. Every year, the fresh technical pass-outs, given an opportunity in such establishments, will become skilled human resources to manage the small, tiny, medium enterprises. Eventually, they stand as backbone of these industries.

It is exactly against this background, the NATS was started with a focus on high-end skills, exposure to latest techniques, and methods in modern industrial environment, and such opportunities to the outgoing graduates to enable them for a gainful & decent employment. For this purpose, the establishments with sufficient level of technology, skilled/technical personnel were identified, and the number of Apprentice seats (Graduate, Technician, and Technician(Voc)) were identified. Identification of establishments, and seats in various disciplines/branches takes place continuously and it is a dynamic and ongoing process for the BOAT executing the NATS.

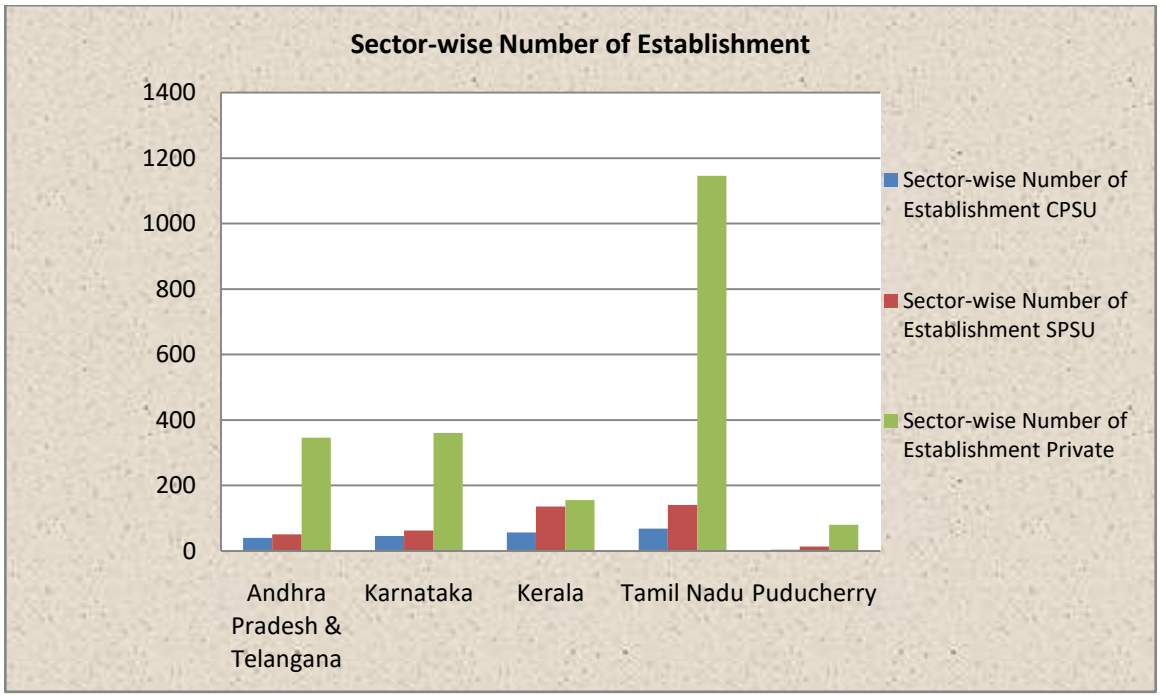
4.2 Glimpse of Statistics of Establishments, Seats capacity under the jurisdiction of BOAT(SR)[12]

Before analyzing the field observations from the establishments vis-à-vis structure, technology, views on Apprentices & their performance, skills in demand, and other dynamics, it is pertinent to have a glimpse of statistics manned by BOAT (SR) Board has under its purview, 2708 establishments in all sectors, i.e., Central Govt., State Govt., and Private Domain, and total seat capacity of 61,213 whereas the utilization is 52,421. Following Tables gives break-up of State/UT wise details of establishments and seats by type of establishment vs state, type of NAT vs state, availability and utilization of seats by state/sector of establishment etc.

Table 4.1 (a) Availability of Establishment by Sector and State in the Region (3016-17)

State/UT	Sector			Total Establishment
	CPSU	SPSU	Private	
AP & Telangana	40	51	346	437
Karnataka	46	63	361	470
Kerala	57	136	155	348
Puducherry	4	14	80	98
Tamil Nadu	68	141	1146	1355
Total	215	405	2088	2708

Fig. 4.1(a) Sector-wise Number of Establishments



[12] Latest figures of BOAT(SR) in its Annual Report 2016-17

Table 4.1(b) Availability of Seat Capacity by Sector and State in the Region (2016-17)

State/UT	Sector			Total seats
	CPSU	SPSU	Private	
AP & Telangana	2347	681	6336	9364
Karnataka	2477	707	9350	12534
Kerala	1231	1592	3948	6771
Puducherry	12	57	1037	1106
Tamil Nadu	1895	1540	28003	31438
Total	7962	4577	48674	61213

Fig. 4.1(b) Sector-wise seats capacity in Establishments

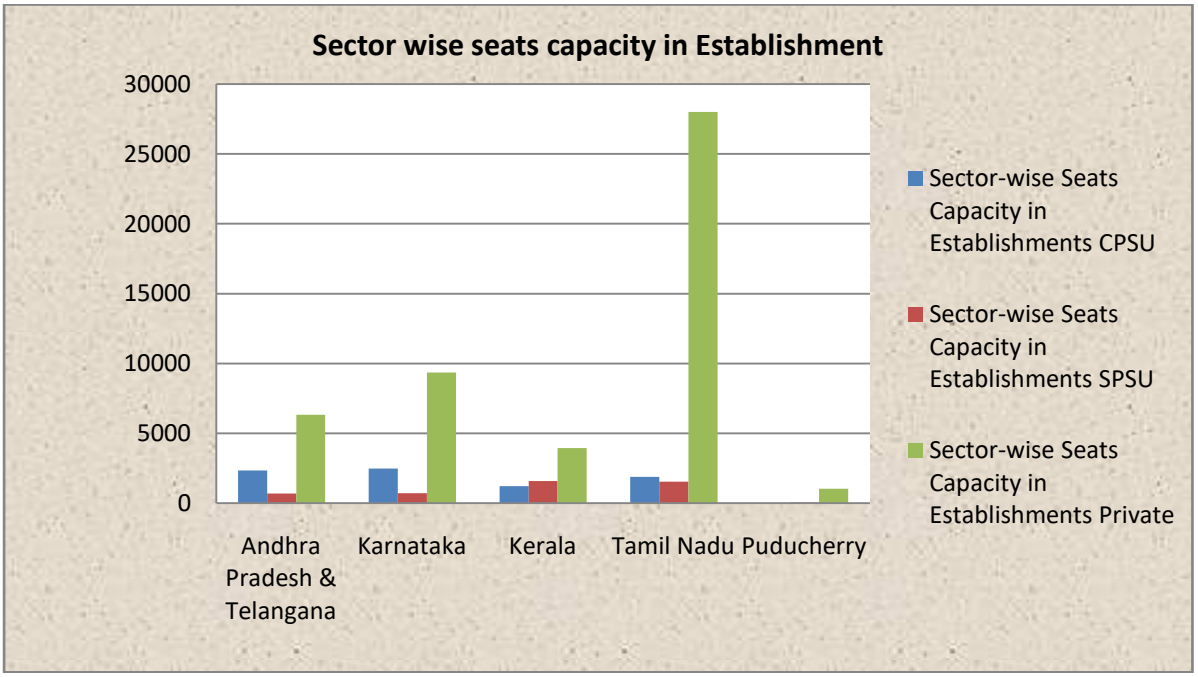


Table 4.1(c) Seats engaged by Sector and State in the Region (2016-17)

State/UT	Sector			Total seats
	CPSU	SPSU	Private	
AP & Telangana	3024	228	2653	5905
Karnataka	2889	271	4852	8012
Kerala	1485	1268	1122	3875
Puducherry	3	17	857	877
Tamil Nadu	1718	896	31138	33752
Total	9119	2680	40622	52421

Above figures show that the utilization of skill development (in terms of utilization of earmarked seats) is only 85%.

Table 4.2 Availability by State and type of NATS (graduate/Diploma

State/UT	Type of NATS		Total seats
	Graduate	Technician	
AP & Telangana	5239	4125	9364
Karnataka	6656	5878	12534
Kerala	4574	2197	6771
Puducherry	104	1002	1106
Tamil Nadu	13028	18410	31438
Total	29601	31612	61213

Fig. 4.2 Growth of Apprentice Seats Utilisation (Graduate Category)

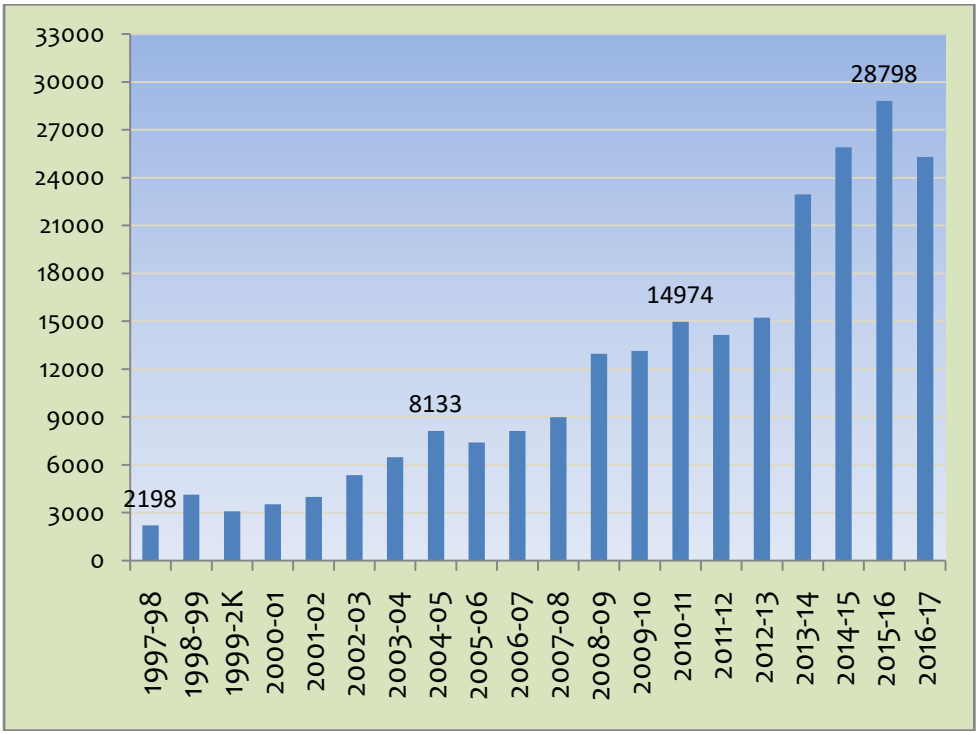


Table 4.3 Seat Utilisation of NATS Apprentices by Sector and State in the Region

State/UT	Type of NATS			Total seats
	Graduate	Technician	Technician (Vocational)	
AP & Telangana	3,960	1,945	1,205	7,110
Karnataka	4,580	3,432	-	8,012
Kerala	2,120	1,755	345	4,220
Puducherry	84	793	-	877
Tamil Nadu	14,556	19,196	49	33,801
Total	25,300	27,121	1,599	54,020

Fig 4.3 Growth of NATS Apprentice Seats of Technicians

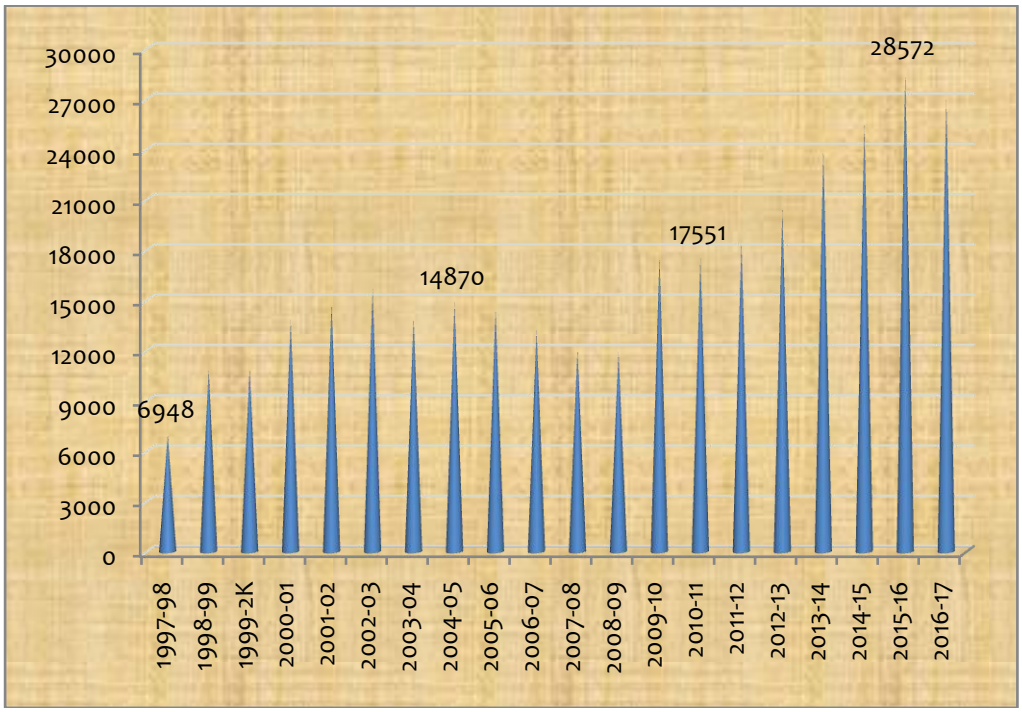


Table 4.4 Seat Allocation and Utilisation by type of NATS

Type of NATS	Identified	Utilized	% Utilization
Graduate	29601	25300	85.5
Technician	31612	27121	85.8
Total	61213	54421	85.6

4.3 Sample Distribution of Establishments:

In all 40 Establishments from all the 5 states and one UT of Southern Region were covered from all sectors. One-fourth of them are from CPSU, and more than three-forth of them are from Private establishments. Table 4.5 & 4.6 gives the details

Table 4.5 Distribution of Sampled and Responded Establishments by Sector of Establishment

Number of Establishment							
Sampled				Responded			
CPSU	SPSU	Private	Total	CPSU	SPSU	Private	Total
15	10	28	53	9	0	31	40

Fig. 4.4 Sampled and Responded Establishments

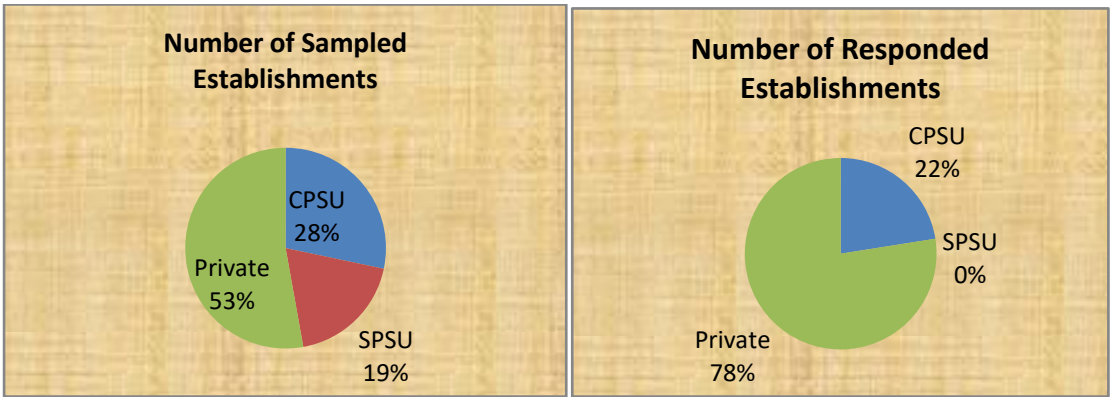
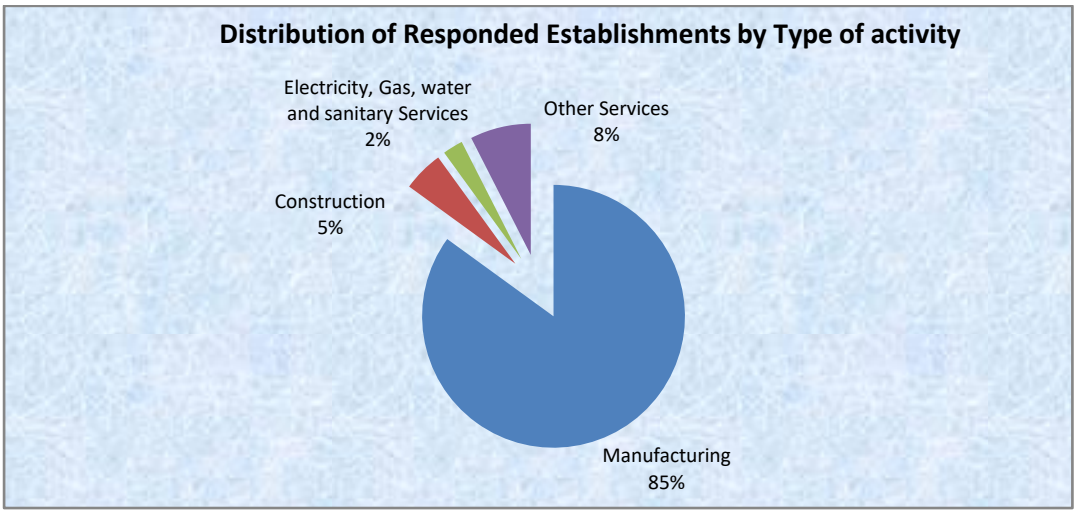


Table 4.6 Distribution of Responded Establishments by Type of activity

Activity Type	Establishments Responded
Manufacturing	34
Construction	2
Electricity, Gas, water and sanitary Services	1
Other Services	3
Total	40

Fig. 4.5 Coverage of Establishments by Activity



Data and opinions were collected broadly on the following points through structured questionnaires.

1. Opinion of Establishments on shortage of skilled manpower
2. Employment by Skill and sector, and size of employment in no. of employees
3. Opinion of establishment vis-à-vis fitness of trainees for absorption, and their suitability for employment in the open domain of labour market.
4. Opinion of establishments vis-à-vis analytical skills acquired by NATS trainees .
5. Internal absorption details of NATS trainees by type and activity.

4.4 Employment Structure of Establishments:

Following tables (tables 4.7) illustrates the skill level of employees in different sectors of establishments, and the sector wise capacity of workforce in the surveyed establishments. It was observed that in private sector, there is huge technical workforce among the surveyed establishments.

In these Tables, it is clear that the technical personnel are dominating the establishments, which is a good sign and congenial for the training of apprentices under NATS. Private sector followed by State Govt/State PSUs are dominant in the skilled and technical personnel. It is inferred that the formative knowledge, skilling is proportional to the number of technical and professional personnel in the establishment. By and large it is inferred that the NATS Trainees will get better exposure in the factory environment that is dominated by majority of skilled workforce, and thereby, the trainees will get better placement post-training.

Table 4.7: Sector-wise size of employment

Sector	Less than 100	100-499	500 and above	Total
CPSU	0	2	7	9
SPSU	0	0	0	0
Pvt	3	12	16	31
Total	3	14	23	40

Size of Establishments by Sector :
It was noted from the above Table-4.9 that majority of the establishments having 500 or more than 500 workforce are from private sector, followed by Central Govt/Central PSU. It is clear that private sector is playing major role in contribution towards NATS. There were many issues explored from private sector, which were discussed in the consequent sections.

4.5 Fitness of Trainees for Absorption:

Following tables (Table 4.8) documents the opinion of establishments regarding the status of fitness of the trainees for absorption. The establishments opined that all the trainees are suitable to be moulded to their working and competency levels, irrespective of the trainees academic background. Only negligible no. of establishments opined that the trainees are not fit. However, majority of them felt that the trainees are either fully fit or fit enough for the work to be accomplished.

Large no. of establishments surveyed, i.e., 90% of them have strongly felt that the trainees after one-year NATS training and exposure are fit enough for

absorption. Due to stringent measures, competitive conditions, automation etc. industries are compelled to restrict the size of the workforce. Otherwise, they are very much willing to absorb the trainees after successful tenure of training. The Training Managers of the firms strongly felt that the trainees after exposure of NATS training are fit for employment in other industries, similar kind of units elsewhere. Indeed, the trainees are getting good employment and salary in the industrial hubs of several cities after successful training under NATS.

In case of diploma holders, the chances of employment are improving tremendously with the NATS training, as they are contended with the average salary offered in the industry unlike the aspirations of graduate engineers who have high expectations about career, salary, cushy jobs etc.

This is the vital parameter of measuring the effectiveness of NATS, therefore, a careful analysis was done after taking the views from the establishments of all types. The feedback was collected in three different types, i.e., (i) fully fit for absorption in the same establishment, (ii) partially fit for absorption, and (iii) not fit for absorption.

NILERD team has a brainstorming session on the options exercised by the establishments. Briefly, the options and connotations were explained here, as this is the significant parameter of measuring the ultimate effectiveness of NATS. The findings and outcome of the discussions are enlisted below:

Option-1. Fully fit for absorption: Depending on the availability of vacancy slots and anticipated vacancies in future, the trainees are shifted to company's pay rolls on probation. Later on after couple of years, they will be absorbed.

Option-2. Partially fit for absorption: Establishments are of the view that this kind of trainees need little more exposure/training, and need extended tenure of training. In any manner, it should not be construed that these trainees are unskilled, and half-skilled, but they only need further push to be at par with others. This push can be (i) extra exposure, (ii) extended tenure, (iii) extra demonstrations, (iv) extra workshop/practical experience etc. Establishments are cautious in their opinion that this option of partial fitness should not give a negative meaning against the trainees.

Option-3: Not fit for absorption: At the outset, the establishments face rare such cases, that too, not regularly. Once in couple of years, there are few candidates who were reluctant to be part of the system due to many reasons. This again cannot be construed as "not fit at all", as there are personal, career oriented reasons, frustration due to various reasons with the trainees. Such cases are very negligible, and they will be advised to leave the training to

enable the candidate to chose the career of his choice. The details are as follows:

Table 4.8 Opinion of Estt – Fitness of Trainees for absorption

Type of establishment	Fit for Absorption in Establishments					
	Government		Private		Total	
	Fully	Partially	Fully	Partially	Fully	Partially
Manufacturing	3	4	21	6	24	10
Construction	1	0	1	0	2	0
Electricity, Gas, and water	1	0	0	0	1	0
Other services	0	1	3	0	3	0
Total	5	4	25	6	30	10

4.6 Opinion of Establishments vis-à-vis Skills Acquired by Trainees in Colleges

This is another vital input given by the establishments about their assessment of Trainees vis-à-vis skills/knowledge imparted in Colleges to the trainees. The opinion is segregated into 3 types, i.e., (i) matching reforms , (ii) mismatch reforms, and (iii) pipeline reforms.

As explained in Chapter-II, one of the available literature[13] describes the above problem as India's labour transitions, as illustrated in three broad steps such as: (a). Matching(connecting supply to demand - Employment reform), (b). Mismatch(repairing supply for demand- Employability reform), (c). Pipeline(preparing supply for demand- Education reform, a fundamental reforms warranting urgent structural change at educational level).

Therefore, the opinion of establishments, with their vast experience in dealing with Trainees from diverse educational background is crucial in linking the skill formation starting from Institute to Industry. Therefore the opinion helps the policy makers for shaping the educational reforms in order to make the future graduates Industry-ready and future-ready. Results are tabulated in Table 4.9 by different type of establishment in Southern Region.

Out of the respondent establishments, it was found from Table 4.9 that, there is a severe crisis in all the above cited issues in the establishments of Manufacturing. Manufacturing establishments are of the opinion that the synchrony between Industry & Institute was lost due to uneven focus on IT related analytical skills by Institutes.

[13] India Labour Report-2008: TeamLease Report

When compared with the type of sector (i.e. Government and Private), the problem is intensely felt in private sector. Private sector especially the small sized units are heavily dependent at on-the job-skills and job-ready skills with the fresh graduates from the Institutes. In case of CPSUs, due to their robust mechanism, Internal R&D set-up, they are not feeling the skill deficiency compared to private firms. Therefore, the matching, mismatch, pipeline problems were felt differently by different types of establishments.

Table 4.9 Estt Opinion about Trainees vis-à-vis skills acquired by Trainees in Professional Colleges BY different types of establishment

Types of Establishments	Sector and Problem								
	Government			Private			Total		
	Matching	Mismatch	Pipeline	Matching	Mismatch	Pipeline	Matching	Mismatch	Pipeline
Manufacturing	3	2	2	14	7	6	17	9	8
Construction	0	1	0	0	1	0	0	2	0
Electricity, Gas, water and sanitary Services	0	1	0	0	0	0	0	1	0
Other services	0	0	0	3	0	0	3	0	0
Total	3	4	2	17	8	6	20	12	8

4.7 Internal Absorption Details:

There is a tremendous encouragement by the establishments to motivate the trainees for skill enhancement/skill development, and to absorb them internally. 100% of the Manufacturing/Automobile Units , and 100% of the IT Units are absorbing the NATS trainees after completion of one year training. There is a driving force and motivation to the trainees right from the day one, as it is explicitly known that the performance, devotion, motivation pays at the end of the training in such units, as there is a regular absorption & retention of hardworking trainees.

In general, Establishments are providing the requisite impetus and boost to the NATS scheme and to the on-roll trainees by providing the last mile opportunity to the outgoing students from institutes. Establishments are also filling the technological gaps that are associated with the institutional set up while preparing the workforce to the future requirements vis-à-vis skilled human resources for the future.

In case of CPSU/SPSU/Govt. establishments, due to stringent rules of recruitment, the ex-trainees are not retained. However, there is a full-fledged moderation while these ex-NATS trainees appear for interviews after selection

in written test. Once, a candidate reaches the stage of interview, there is huge encouragement to absorb the ex-trainees into the system.

In case of state-owned cooperative societies, and few establishments there is a grooming system of Trainees. All the recruitments are being done through NATS training. Thus, in select places, the previous batches of trainees have occupied the top technical managerial positions. Thus, the NATS in such companies is running with a brand and pride of NATS.

4.8 Shortage of Skilled, Technical Human Resources:

NILERD team tried to correlate opinions with the training of apprentices of NATS, and the general signals in the labour market about the NATS apprentices. Private establishments were very clear that they are looking for (i) graduates with the diversity of skills, and exposure in a more competitive environment (ii) having experience in similar kind of processing/technology for strategic reasons. It is noteworthy to mention that out of 48 establishments, 44 have conveyed that they are facing shortage of skilled, technical personnel. They need trained personnel with experience in similar and diverse fields of manufacturing processes

Therefore, they are reluctant to recruit the native apprentices (groomed in-house), though they are capable. They wished that these apprentices, with sufficient exposure in their own factories, will be easily getting attractive jobs elsewhere, and after sufficient exposure in the domain of their skills, they will be preferred in their own factories. This is necessary for growth and survival of the enterprises in a competitive and technology-intensive environment.

Private firms are eager to get talented pool of youngsters with innovative skills, competencies. Therefore, they are open to recruitments of such skill-rich people all the times. In case of CPSUs, there is a shortage of talented skilled workers, but they are handicapped due to the stringent rules.

4.9 Involvement of Trainees in Production Processes:

Involvement of Trainees in production processes, engaging them in shift duties will expose them to skill sets and makes them to mentally aware, and prepare for the future jobs. Direct involvement in the processes, gives an opportunity to mingle with different skilled personnel very closely. This gives an opportunity to learn the practical skills and skills of the trade directly and impressively. Therefore, this is an important parameter to gauge the effectiveness of training vis-à-vis the type of industry, nature of activity etc. Almost 80% of the private firms are engaging trainees in production processes. Therefore, private sector is preferred towards skill enhancement

for young trainees. In case of CPSUs, only 4 out of 6 firms are giving this opportunity to trainees.

In case of shift duties, very few establishments from all type of units are giving the chance to youth to work in shift duties. It is to mention here that, the units are very cautious and do not want to involve trainees in shift duties. Industrial establishments are following strict protocol and labour rules in case of shift duties to ensure that only regular, skilled & experienced workers only handle the activities.

4.10 Status of Core Facilities:

Establishments were categorically asked about the availability of core facilities such as (i) separate training department/section, with dedicated training officer(s), and (ii) workshop facilities for shop-floor training, (iii) lecture halls/rooms etc. In case of CPSU and SPSUs, the training officers personally demonstrated all the facilities to the NILERD team. There is a dedicated physical, human resources exclusively devoted to the trainees in CPSUs and SPSUs since, every year huge contingent of trainees will be enrolling not only for NATS but for CTS also. Therefore, they have excellent facilities for nourishment & stimulation of skills to the trainees.

However, in private sector, there are no segregated and exclusive infrastructure for NATS trainees, but they are coping upto the satisfactory level and upto the requirements.

4.11 Status of Complimentary Facilities:

Establishments were inquired about the supplementary facilities provided to the trainees such as (i) hostel facilities, (ii) transport facilities, (iii) subsidized canteen facilities etc. It was observed that in the industrial zones, there is a subsidized transport, canteen facilities provided to trainees at par with their regular employees. In few places, the company is bearing all the expenses of transport. Though there is no accommodation facility, they management is facilitating decent accommodation in nearby colonies. In CPSUs of the surveyed companies, there is no hostel facility. This is due to their location in urban areas, and the cost of such facility is exorbitant.

4.12 Other Important Issues:

After intense brainstorming sessions with the representatives/officials of establishments, outcome/feedback on the following points were also documented. In addition, to the above points, the Establishments were asked to give their opinion on the following points, and after subjective, descriptive opinions were captured from each of the sampled establishments by visiting

their premises by a team of researchers. The opinion on the following points were also captured. They are as follows:

a. Social & Gender Diversity of Trainees in Establishments: It was observed that there is a diversity maintained and females are encouraged in all types of industries, and in all strategic sections, women are placed with equal opportunities.

b. Compliance of the ATS Act: There are no violations, and the establishments are satisfied with the present arrangements. The operational framework of ATS is conducive to all the stakeholders of implementation. After computerization, and centralized allotment of trainees, the system became very convenient and transparent. Handling of NATS records is easy now. However, there were few small problems related to technicalities of on-line registration etc.

c. Method of selection of Trainees:
Method of At the outset, it is to put on record that all Establishments have expressed their satisfaction towards the method of selection of apprentices. Irrespective of State/type of units etc., all have opined that the current procedures of identification of candidates/apprentices is full proof and satisfactory. Establishments wanted the present system to continue. There are several methods of selections, such as (i) open advertisements, (ii) written test, (iii) interview. In few circumstances, BOAT guides the candidates to enroll in the centralized-cum-computerized web portal according to the choice of candidates, as and when the prosperous apprentice(s) visits the BOAT office for guidance in registration. BOAT is strictly following the rules & guidelines of the Act *vis-à-vis* selection/nomination of candidates. In general, the selections are dominated by interviews by establishments. CPSUs are giving open advertisements and wide publicity in selection of apprentices. In all aspects, there is complete transparency in identification & selection of apprentices.

d. Difficulty in Getting requisite no. of Apprentices:
Private Establishments are not facing any difficulty in getting the NATS apprentices. They opined that the BOAT (SR) is providing excellent logistic support in getting the requisite no. of trainees.

Indeed, in few cases of establishments, they are entertaining more than the identified slots, whereas few others are unable to fill the allotted seats. In case of Southern Region, the % occupancy of NATS seats is high, and there is no overall wastage of seats. In few

cases of industrial hubs/automobile industrial zones, establishments are wanting more and more trainees.

e. Views on stipend matters:
Establishments were categorically asked about status on (i) regular claims of stipend by establishments, and (ii) timely receipt of stipend amount. There are no issues with the claiming of stipend nor timely receipt of stipend with Public Sector Units. They said, their respective departments (finance, training etc.) will take care of it, and there is perfect record keeping about stipend disbursal and reimbursement. They have no issues with the present system even if it is procedural and administrative delay.

However, responses from private establishments are differing. They admitted that they are not regular in claiming the stipend due to their own priorities, and due to very limited and optimal human resources manning the finance & administration. However, they expressed dissatisfaction about prompt reimbursement from the BOAT, immediately after submitting the claims. They said, they are paying the stipend from their own accounts and waiting for longer time for reimbursement.

Establishments are key drivers of skill development in the transformative Ecosystem of Skills.

Mr. Prakash Javadekar, the Hon'ble Minister of HRD, Govt. of India has rightly said…

"The apprenticeship training is one of the sources to develop skilled manpower for industry, by using training facilities available in the establishments without putting extra burden on exchequer to setup training infrastructure."

CHAPTER- V

FEED-BACK OF TRAINEES & Ex-TRAINEES:

Last Mile Efforts of Beneficiaries of NATS

5.1 Background

Indian technical and higher education has vast historical background. Even before independence the country has stressed upon the quality in technical education. Immediately after the independence there was an assessment for need of technical manpower in each sector and sub-sector. Especially, during the period of Second Five Year Plan(1956-1961) the country was moved towards heavy industrial base. Therefore, a significant budget allocation and importance was given to technical education to meet the skill requirements of the country. The introduction of The Apprentices Act, 1961 was one of the initiatives made by the government during the period. Many institutions exclusively for supply of technical manpower at various levels were started during this period. Indian Institute of Technologies(IITs), Regional Engineering Colleges(RECs- now called as NITs), many Engineering Colleges, and Polytechnics were started in large scale. This is in addition to the huge stock of Industrial Training Institutes(ITIs), and many vocational institutes imparting skills & vocations in diverse fields.

The demand for technical and skilled manpower has reached to peak since the introduction of new economic reforms in 1991. This new economic reforms led to a structural transformation in the economy. Services and industrial sector become the mainstream of the economy by pushing back the agriculture. Due to this sectoral shift, there was a change in the labour market especially in the labour mobility. Unskilled and low skilled labourers were started moving towards services and low-intensity and low profile industrial jobs. The nature of jobs in services and industrial sectors were also mechanized and highly modernized due to globalised and liberalized industrial processes coupled with high-end technologies. This led to a mis-match between the jobs available and the workforce in the labour market. This mis-match was highlighted through empirical studies at various levels by different sources.

A study conducted by the World Bank in 2009 across sectors and regions in India, the survey asked 157 employers to rate their satisfaction with new engineering hires with respect to 25 skills. The results confirm a widespread dissatisfaction with current engineering graduates. Over 64 percent of employers hiring fresh engineering graduates have expressed dissatisfaction about the quality of the new hires (Blom and Saeki, 2011)[14].

[14] See Blom , Andreas and Saeki, Hiroshi (2011) "Employability and Skill Set of Newly Graduated Engineers in India." Policy Research Working Paper 5640, World Bank, Washington, DC.

Another most recent study conducted by the Aspiring Minds a leading Talent Testing Agency during 2016 has also captured the alarming signals of skill gaps. The report highlights that, only 17.91 percent of Information Technology engineering graduates were employable for the software services sector, 3.67 percent for software products and 40.57 percent for a non-functional role such as Business Process Outsourcing.

It was periodic study and the present study could not observe any progress in these numbers of the employability of the engineers over the years. The report also points out that the present initiatives for employability improvement have not contributed much as expected. However, the need of the hour is to find these pockets and scale them up to make an exponential impact on employability. This is crucial for India to continue its growth story and achieve the Prime Minister's vision of India becoming the human resource provider for the whole world(Aspiring Minds, 2016)[15].

The NASSCOM-McKinsey report also points that, only 26 percent of India's engineering graduates were employable. A New Delhi-based employment solutions company, Aspiring Minds, conducted employability–focused study based on 1.5 lakh engineering students and found barely 7 per cent of them suitable for core engineering jobs. As many as 97 per cent of graduating engineers want jobs either in software engineering or core engineering. However, only 3 per cent have suitable skills to be employed in software or product market, and only 7 per cent can handle core engineering tasks(Bijeesh, 2016)[16].

On the other hand country's demographic dividend is skewed in favour of youth and country is going to have more than 60 percent of the population under the working age(Aiyar and Modi, 2011)[17]. India is going to be the largest country in the world with maximum share of young population in coming next two decades. As per the Census of India, and United Nations Population Division, 64%, and 63.5% of the country's total population will be under the age category of 15 years to 59 years in 2021 and 2020 respectively. This implies, there will be huge new entrants into the labour market in coming years. It was estimated by the Asian Development Bank study in 2008 that nearly 12 million youths are entering into the labour market every year. In order for India to exploit this demographic advantage in the future, there is a need to create a model to impart vocational education

[15] See Aspiring Minds (2016) 'National Employability Report – Engineers 2016 – Annual Report', Aspiring Minds, New Delhi.

[16] See Bijeesh, Nishatha Abraham (2016) 'How Can Indian Graduates Improve their Employability', The paper was accessed from the http://www.indiaeducation.net/interviews/himanshu-aggarwal-ceo-aspiring-minds.html on 2nd May, 2017.

[17] See Aiyar, Shekhar Modi, Ashoka (2011) 'The Demographic Dividend: Evidence from Indian States'
Working Paper No. WP/11/38, International Monetary Fund, Washington DC.

and training that is flexible, sustainable, inclusive, and creative. The challenge therefore facing the country is how to train and equip this young population with ways and means of gaining productive and meaningful employment(Majumdar, 2008) [18] . Country is having more than 4400 engineering and technology institutions offering graduate degree programs and with equal number of Polytechnic Institutions together getting enrollment to the tune of 3 million students[19]. Around 1.0 million engineers are coming out from these institutions and entering into the job market every year. However, as stated previously, all the pass-outs are not industry-ready, and there is significant skill-gap associated with them.

To address above generic problems, the National Apprenticeship Training Scheme(NATS) is a boon, and is the pioneer programme to add the working skills of the pass outs of all the technical and professional courses. The scheme is still running very successfully by providing post course training and industrial exposure to almost 1.5 lakh students per annum of all levels. Though, many skill development programmes were started in recent years, NATS has remained unique in nature and versatile in utility to graduates, and robust in implementation having inherent strengths in its structure, and execution. It is designed to abridge the skill gap and to enhance the skills of pass-outs in order to make them suitable to the demands of the Industries. Therefore, the NILERD's research team has tapped the trainees enrolled in NATS and examined the skill enhancement efforts vis-à-vis NATS's objectives.

5.2 Enrolment & Outturn in Degree and Diploma Courses

State-wise data of Southern Region pertaining to the Institutes by level, enrollment, outturn, placements etc. is given in the following table. These figures are sourced from the official website of AICTE[20]. It is an alarming scenario that one in every two outgoing graduates have no job in hand. Actual scenario is still worst, as the data from majority of private colleges is not authenticated. In case of diploma holders, two-thirds of the pass-outs have no job at hand. Nearly 85% and 65% of the seat capacity & skilling infrastructure is being wasted due to non response for the seats, as per the following table 5.2. Inter-state comparison, and Zonal data in comparison with All India figures are given in the following tables.

[18] Majumdar, Shyamal (2008) 'Workforce Development in India Polices and Practices', Asian Development Bank Institute, Tokyo, Japan.
[19] Data available in the official website of AICTE
[20] Latest figures available as on February, 2018 in the official website of AICTE: https://www.facilities.aicte-india.org

Table 5.2 Inter-state Comparison with All India Data - Year 2015-16

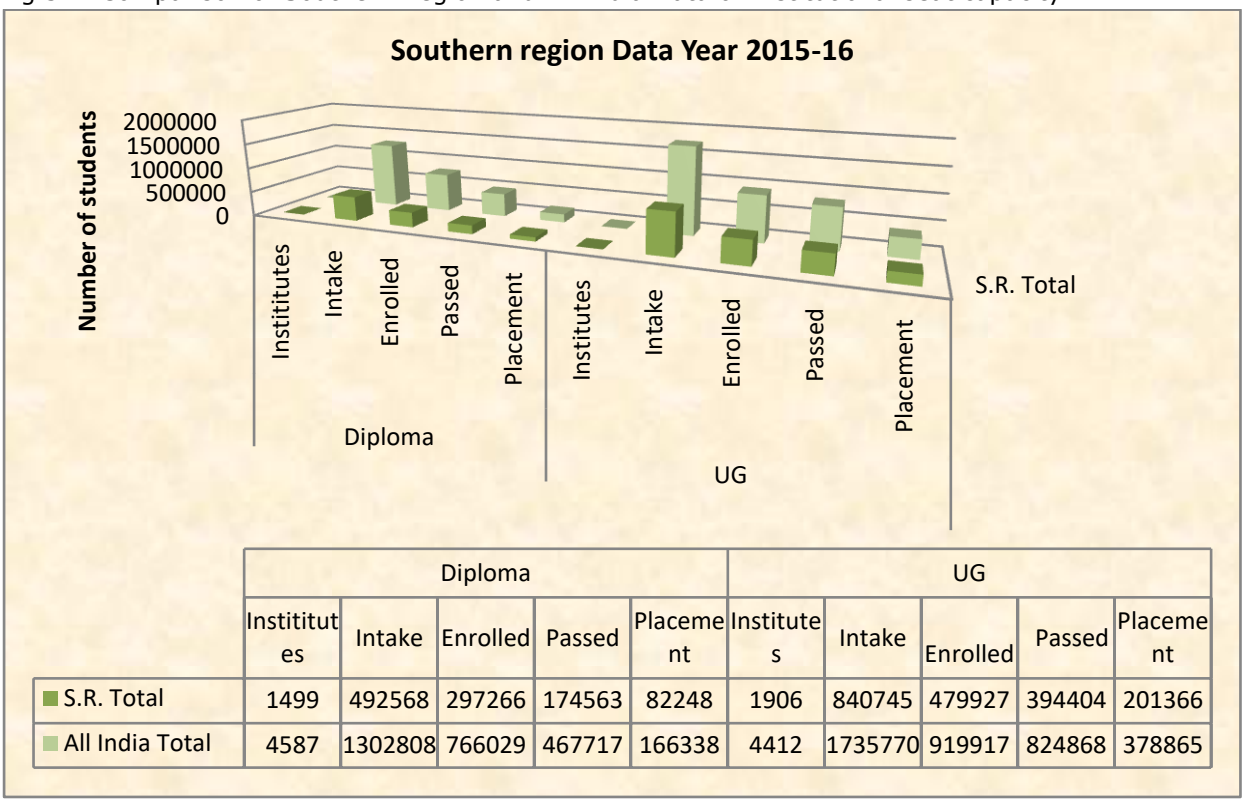
State	Diploma					Under Graduate				
	Institutes	Intake	Enrolled	Passed	Placement	Institutes	Intake	Enrolled	Passed	Placement
Telengana	215	62040	41488	17524	2949	387	174739	81526	68448	28787
AP	321	88636	55777	26322	5508	439	192660	103330	82396	36490
Karnataka	361	101849	66052	33898	9742	273	109276	82718	67883	31078
Kerela	82	22020	18915	9385	3715	213	66383	44427	27016	13130
Tamil Nadu	511	215193	113560	86480	59570	575	288657	163815	144908	89372
Puducherry	09	2830	1474	954	764	19	9030	4111	3753	2509
S.R. Total	1499	492568	297266	174563	82248	1906	840745	479927	394404	201366
All India Total	4587	1302808	766029	467717	166338	4412	1735770	919917	824868	378865

Table- 5.2(b) Southern Region Status In Comparison with All India Data : Year 2015-16

Region Vs All India	Diploma					UG				
	Institutes	Intake	Enrolled	Passed	Placement	Institutes	Intake	Enrolled	Passed	Placement
S.R. Total	1499	492568	297266	174563	82248	1906	840745	479927	394404	201366
All India Total	4587	1302808	766029	467717	166338	4412	1735770	919917	824868	378865

From among the outturns, less than half of the outgoing graduates are getting placements, and the remaining lot are struggling in the labour market for a suitable employment. In order to make them more employable, last mile efforts through one-year NATS is a major vehicle of skill transformation. The following sections

Fig 5.2 Comparison of Southern Region and All India Data of Institutional seat capacity



	Diploma					UG				
	Instititutes	Intake	Enrolled	Passed	Placement	Institutes	Intake	Enrolled	Passed	Placement
S.R. Total	1499	492568	297266	174563	82248	1906	840745	479927	394404	201366
All India Total	4587	1302808	766029	467717	166338	4412	1735770	919917	824868	378865

SECTION – A: On-Roll Trainees of NATS

5.3 The Survey Results of On Roll Trainees of NATS: NATS - Vehicle of Social and Economic Upward Mobility

This section is intended to get the feedback from the trainees on overall effectiveness of NATS vis-à-vis last mile efforts to fill the gap in skill requirements in the current competitive job market. The trainees who are currently undergoing training are the main beneficiaries and can throw many issues for reforming the scheme if necessary within the operational framework.

Together in States and UTs in the Southern Region 140 on-roll trainees have been interviewed from 40 establishments for the primary survey. Considering the time factor of the study, only limited number of on-roll interview forms were canvassed. However, the sampling based on gender, trade/branch, type of industry and establishment were considered for careful analysis of the outcome of responses. Data was collected from two different levels of NATS trainees (i.e., graduate, and technician), and the results are presented in the following sections.

Sector of Establishment and Gender:

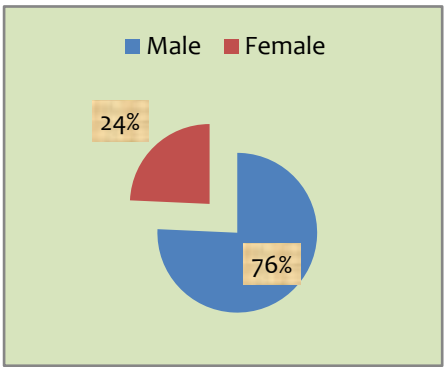
Three-fourths of the responded on-roll trainees of NATS are males, and merely 12% of the total males are working in CPSUs. Private enterprises are

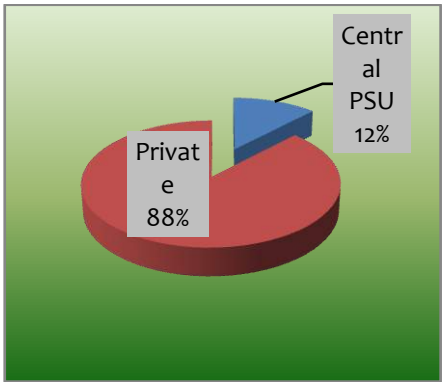
dominating in providing skill development avenues to the youth to the extent of 88% of the available slots. Tab 5.3 and Fig 5.3 will show the details.

Table 5.3 : Sector and Gender wise distribution of on-roll trainees

Sector	No. of on-roll trainees		
	Male	Female	Total
Central PSU	12	5	17
State PSU	-	-	-
Private	94	29	123
Total	106	34	140

Figure 5.3 Distribution of On –Roll Trainees by Gender and by Sector of establishment





Type of Activity and Sector of Establishment:

Majority of the NATS trainees are engaged in manufacturing, automobile and processing Units, and that too in private sector. Rest of the trainees are in other units. Other units are IT/Services/Software companies. These companies are engaging trainees en masse and providing skill enhancement opportunities to graduates from private institutes from small towns and rural areas. Due to emerging service sector, software companies are engaged in delivery of services being outsourced to India, and in return, they are exporting the services with reasonable level of skills and value addition. Thus, the emerging sector called IT/Software/BPO/IT-enabled Services Sector is offering good avenues to the youth from professional college. It was found after interaction with the companies that the NATS trainees after one-year tenure are being absorbed in the company. After couple of years of service, the skilled youth are in a better position to bargain for better package and position in the sector.

Therefore, at the beginning of their career, the NATS is used as a stepping stone and a tool to make a dent into the large and organized establishment with the enhanced skills through NATS. Similar is the case with the NATS trainees enrolled in manufacturing sector. The trainees, otherwise deprived of getting a chance to enter into a good company are using this NATS effectively

for skill development and then to broaden their scope to enter into organized industry.

Table 5.4: Distribution of on-roll trainees by Establishment type and State

Classification of establishment by nature of their activities	Sector			Total
	CPSU	SPSU	Private	
Mining/Quarrying	-	-	-	-
Processing/Manufacturing	13	-	105	118
Transportation	-	-	-	-
Storage & Communication	-	-	-	-
Electricity Gas Water	1			1
Health	-	-	-	-
Repairing services	-	-	-	-
Others*	3	-	18	21
Total	**17**	**-**	**123**	**140**

***** Note: Includes, IT and Software Sector, Financial Institutions, Educational Sector and Research and Development (R &D) Sector etc.

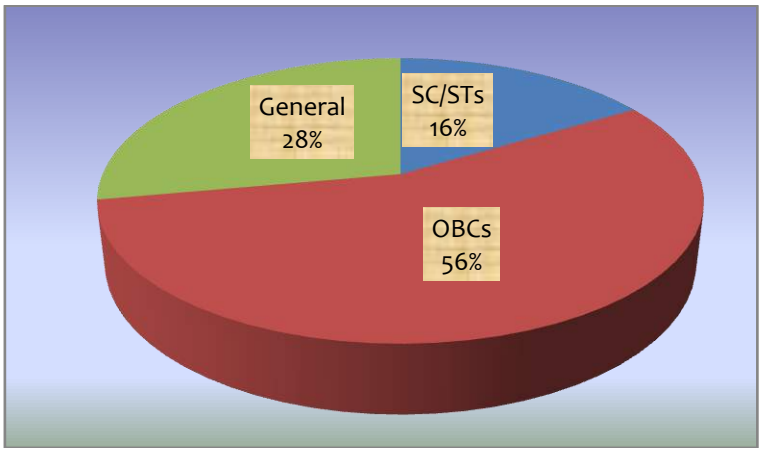
Equity and Diversity in Opportunities Provided by NATS

Looking at the data in Table 5.5, there is huge diversity & equity among the NATS on-roll trainees. Nearly half of the trainees are hailing from OBC, followed by General category with one-fourth. Remaining trainees are from SC, minority etc. One-third of the trainees are females.

Table 5.5: Distribution of On-Roll Trainees by Industry Type, Social Category and Gender

Organizational Type	On-Roll Trainees by Social Category and Gender							
	General		SCs/STs		OBCs		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
CPSU	2		5	2	6	2	13	4
SPSU	-	-	-	-	-	-	-	-
Cooperatives	-	-	-	-	-	-	-	-
Private	24	13	14	2	55	15	93	30
Total	26	13	19	4	61	17	106	34

Figure 5.5 Distribution of On-roll Trainees by Social Category



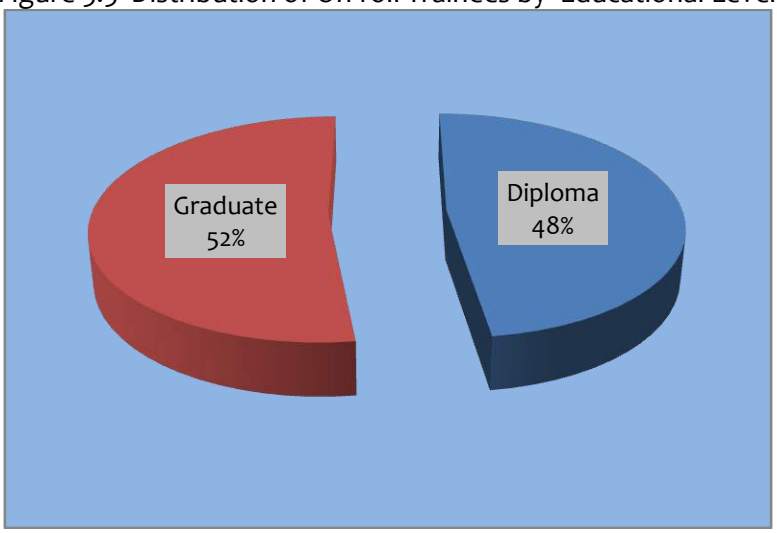
Educational level of NATS Trainees:

It was found that there is equal participation from both the types of trainees, i.e., trainees with degree and diploma qualification. Unlike in other regions, the Southern Region is well balanced in terms of utilizing skill opportunities in equal proportion.

Table 5.5: On-Roll Trainees by their Educational Level and Sector of Employment

Educational Level	CPSU	SPSU	Cooperatives	Private	Total
10+2	-	-	-	-	-
Diploma	4	-	-	63	67
Graduate	13	-	-	60	73
Total	**17**	**-**	**-**	**123**	**140**

Figure 5.5 Distribution of On-roll Trainees by Educational Level



Activity of Establishments and Distribution Pattern of Trainees:

Data compiled from 140 on-roll trainees in the following table 5.6 reveals that 85% of the trainees are engaged in manufacturing sector. Remaining 15% are enrolled with IT/Services sector. This is in conformity with the growing trends that manufacturing/automobile/processing activity is increasing in India due to many MNCs starting their manufacturing units in India.

Table 5.6: Gender wise Distribution of on-roll trainees by Activities of the Establishments

Classification of establishment by nature of their activities	Male	Female
Mining/Quarrying		
Processing/Manufacturing	94	24
Transportation		
Storage & Communication		
Electricity Gas Water	1	
Health		
Repairing services		
Others *	11	10
Total	106	34

* Others include: IT and Software Sector, Financial Institutions, Educational Sector and Research and Development (R &D) Sector etc

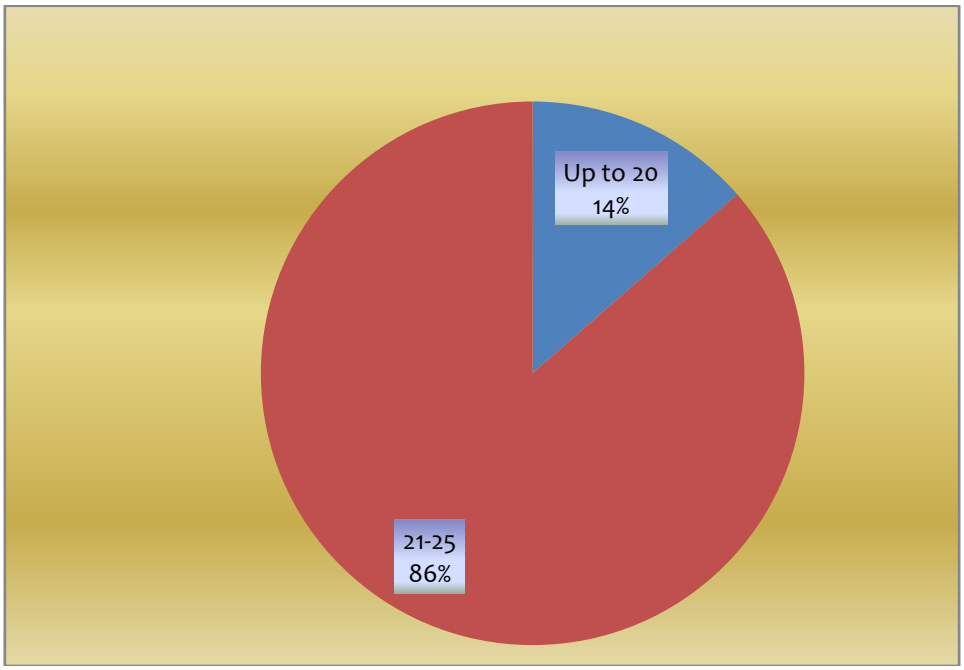
Age pattern of on-roll Trainees:

It is a very positive trend that all the trainees are in the age group of less than 25 years. Precisely, 86% of them are in the age group of 21-25 years, remaining 14% are less than 20 years of age.

Table 5.7: Distribution of On-Roll Trainees by Age, and Gender by Sector

Sector	No. of On-roll Trainees by age and Gender							
	Up to 20		21 – 25		26 & above		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
CPSU	-	-	12	5	-	-	12	5
SPSU	-	-	-	-	-	-	-	-
Private	19	-	75	29	-	-	94	29
Total	19	-	87	34	-	-	106	34

Figure 5.7 Distribution of On-roll trainees by Age



Parents' Background of On-roll NATS Trainees:

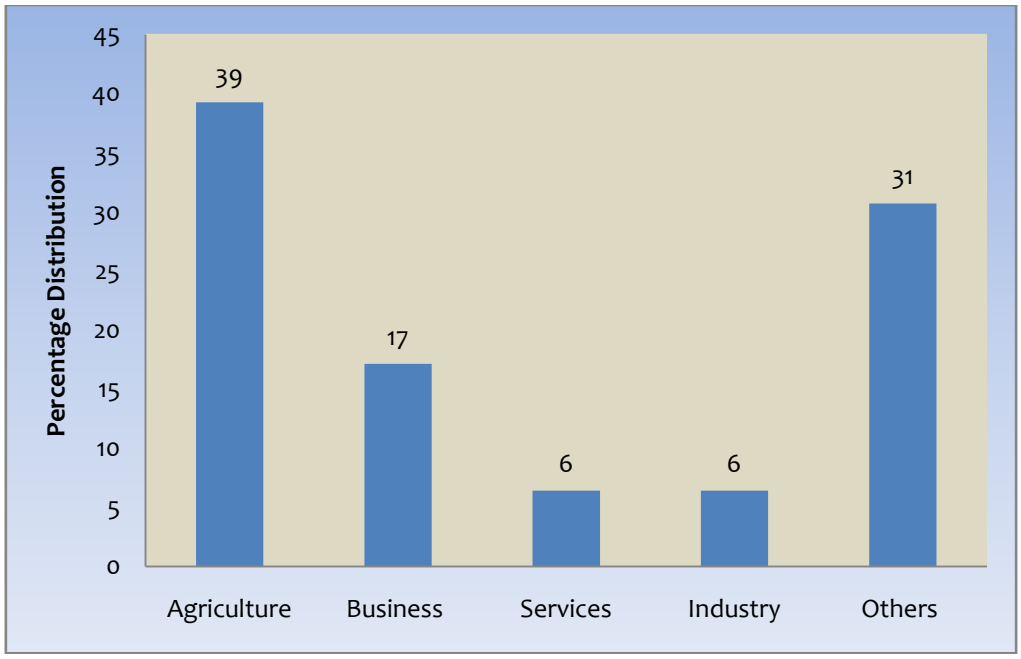
It is pertinent to link the parental background, i.e., occupational history of the families of trainees. It was found that 39% of the trainees are hailing from agricultural background. This is no mean achievement, considering the social conditions prevailing at their background. It clear that the trainees are moving towards upward mobility, by migrating from rural areas to urban areas using NATS as an effective opportunity. Thus there is social mobility along with the migration for better prospects. All these things happened due to NATS, and the youth from poor social back ground are using NATS as a tool to reach their goals. The details are given in Table 5.8.

There is another development, as noticed in fig 5.8, 31% of the trainees families are managing with meager income by odd-jobs, and miscellaneous activities. This is another milestone for the trainees who have jumped out of this vicious cycle and entering into a new occupation that offers them security, prosperity and career development based on their skill enhancement and experience in urban conglomerates.

Table 5.8: Distribution of On-roll trainees by their Parent's Occupation and the type of Establishment they are working by Gender

Parent's Occupation	CPSU		SPSU		Private		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
Agriculture	6	1	-	-	37	11	43	12
Business	5	1	-	-	12	6	17	7
Services	1	-	-	-	5	3	6	3
Industry	-	-	-	-	8	1	8	1
Others	-	3	-	-	32	8	32	11
Total	12	5	-	-	94	29	106	34

Figure 5.8. Distribution of On-roll Trainees by Parental Occupation



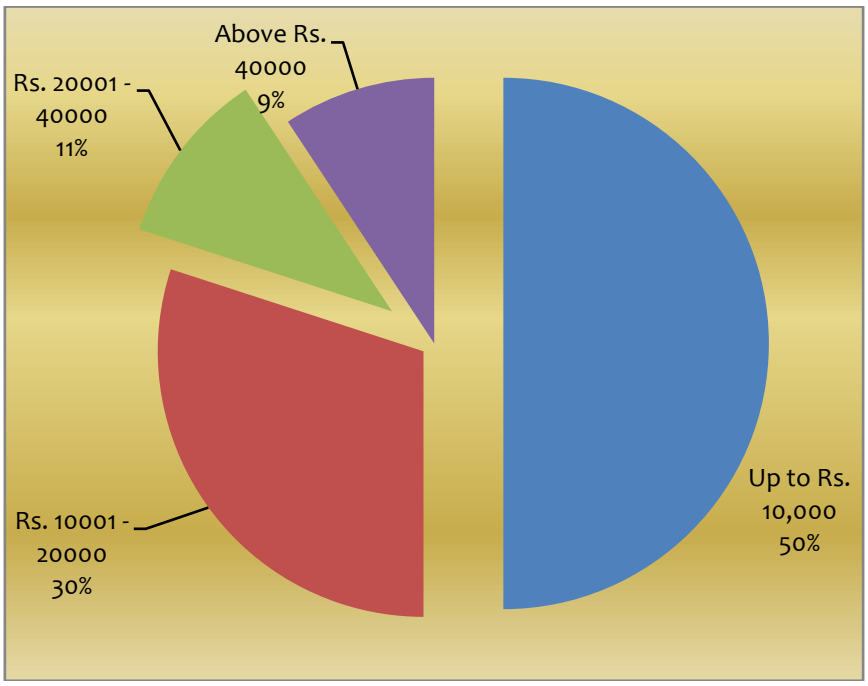
Family Income of On-roll NATS Trainees:

It was found that 50% of the trainees are hailing from humble background with their parental income less than Rs. 10,000/- pm. Another 30% of them are falling in the bracket of Rs. 10k to Rs. 20k pm. Therefore, collectively, 80% of the trainees are hailing from lower middle class families, with meager income. Therefore, the NATS is a boon for such trainees. Through NATS, there are multiple social and economic benefits to such aspiring trainees. The skill enhancement, and last-mile efforts for career development is happening through NATS to such aspiring youth. Table 5.9 explains this trend.

Table 5.9: On-Roll Trainees by their Educational Level and their Parents' Monthly Income

Parents' monthly Income	10+2	Diploma	Graduate	Total
Up to Rs. 10,000	-	45	25	70
Rs. 10001 -20000	-	19	23	42
Rs. 20001 - 40000	-	2	13	15
Above Rs. 40000	-	1	12	13
Total	-	67	73	140

Fig. 5.9 Income and Educational Level of Parents of Trainees



5.4 Trainees' Perceptions on Course Curriculum and Training

This is an important aspect to gauge the overall effectiveness of the NATS from the point of view of direct beneficiaries, i.e. on-roll trainees. This will directly imply the skill enhancement and the net skill development of trainees after their graduation from colleges.

Majority of the on-roll trainees to the extent of 70% have expressed full satisfaction with the course curriculum and are confident to develop career path with the skill gains through NATS. They are in conformity that the course curriculum of college is well connected with the training at the establishment level. Another 29% of the on-roll trainees have gained only few months of experience after joining the NATS training. So, could not articulate the skill profiling, however, they are also confident that the NATS will immensely benefit them once they complete full tenure of training. Among the trainees, Diploma trainees are very confident and very much aspiring to complete the

training and to join in a company based on the one-year exposure and skill upgradation. Only two trainees out of 140 have mentioned that they have no interest in the training. They have joined due to peer pressure and enforcement by their parents, as they have passion for other professions altogether.

Important factor for this partial satisfaction is that they are still in the middle of the training, and are unable to judge the impact of NATS. Therefore, this should not be seen as a dissent feedback. There are other reasons such as preference of certain type/nature of establishments by majority of Trainees, all the trainees could not be adjusted in the establishments of their choice. This leads to some disappointment as they feel that their degree/diploma is different from the NATS apprentice training. This segment of trainees feel that the NATS training in establishment is somewhat(partially) matching with their College Degree. They feel that somewhere they are lacking the requirements of the industries. Details are given in Table 5.10

Table 5.10 : Educational Level wise distribution of on-roll trainees by their perception about matching of course curriculum with the training at the establishment

Educational Level	Educational Level of the on-roll trainees by gender							
	Fully Satisfied		Partially Satisfied		Not at all		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
10+2	-	-	-	-	-	-	-	-
Diploma	45	4	13	3	2		60	7
Graduate	23	22	23	5			46	27
Total	68	26	36	8	2		106	34

5.5 Views of the Trainees on Quality of Training

Satisfaction with nourishing environment & Bridging the Skill Gap through Training:

There are two other factors which are immensely contributing to push the NATS forward. They are nourishing/working environment under NATS, and minimizing the existing skill-gaps of trainees through NATS. Participants in the survey are very happy that they are enjoying the excellent nourishing environment and bridging the skill gap existing at the time of coming out of the Institutes with degree/diplomas. It is very encouraging to note that out of 140 respondents, none of them expressed any apprehensions about the above two factors, and they are very happy to enjoy the nourishing and encouraging skill environment, and skill ecosystem prevailing in the establishments, which is happening through NATS. Table 5.11 reinforces this fact.

Trainees were encouraged for a detailed discussion on the qualitative aspects of training. Broadly they were asked to give information on the aspects of (i) achieving the expected skills, and thereby minimizing the much discussed skill-gap, and (ii) conducive & nourishing environment in the work premises of establishments. This will contribute to learning capability and encourage the stimulating minds of youth to learn new things in an encouraging manner. Following Table 5.11 gives the compilation of results on the above-said two qualitative aspects. All the trainees expressed satisfaction at the working environment in the factory premises. They are happy that the establishments are giving them excellent opportunities through training to learn new things, and exposing them to the state-of-the-art techniques, modern methods of production, processes and emerging technologies. On the perennial subject of skill-gaps, the trainees are exposed to the practical way of problem-solving, and were involved as teams to share the views, and knowledge. On both the fronts of qualitative assessment, the objectives of NATS are being fulfilled in a meaningful manner.

On-roll trainees were also asked about the usefulness of the training under NATS, with reference to bridging the skill-gap for better employability. Majority felt that, the training is really helping them to fill the skill gap. They have also revealed that they are learning extra skills during the training, that was missing in their college curriculum. However, approximately 15% of the trainees felt that they need some more time to assess the usefulness, as they have completed only couple of months of training. However, they are also very hopeful that their aspirations of skills enhancement will be met through the NATS training.

Table 5.11: Distribution of On-roll trainees according to their perceptions by Sector

Sector	Satisfaction with working environment		Bridging the skill-gap through Training	
	Yes	No	Yes	No
CPSU	17	-	17	-
SPSU	-	-	-	-
Private	123	-	122	1
Total	140	-	139	1

5.6 Views of the Trainees on few important points:

Apart from the above qualitative aspects, there are few subsidiary parameters which will also decide the effectiveness of the training, and satisfaction level of the trainees. They are (i) adequacy of stipend, (ii) regular receipts of stipend, and (iii) adequacy of training period.

Adequacy of Stipend-Too-low salary, a taboo:

At the outset, the NILERD research team has motivated the trainees during the interaction, and tried to convince them that the stipend is only an honorarium and subsistence allowance to meet the contingent expenses. They were convinced to treat it as "pocket money" rather than salary, and to treat it as an incentive for their upward mobility in skills. The main focus is on accessibility to the establishments to enhance the skills for better job opportunities, and career development. However, few trainees are viewing the stipend at par with salary, and comparing it with the salaries of their counterparts/batch mates working elsewhere. Ultimately, the trainees are viewing the meager stipend as a taboo. Following table 5.12 gives the details of responses. Trainees have no complaints about timely disbursement of stipend to them. Indeed, many establishments are paying twice the stipend amount as remuneration as an incentive and driving force for skills learning.

Table 5.12: Distribution of On-roll trainees according to their perceptions by Sector

Sector	Is the Stipend is Adequate		Receive of Stipend on time		Whether more tenure for training is needed (more than One year)	
	Yes	No	Yes	No	Yes	No
CPSU	10	7	17	-	9	8
SPSU	-	-	-	-	-	-
Private	108	15	123	-	62	61
Total	118	22	140	-	71	69

Tenure of the NATS Training – Views of Trainees:

Looking at the above Table 5.12, it was found that trainees are so happy, and they want to gain more by extending their tenure by another year. The excellent skilling eco-system, nourishing, simulating learning environment enjoyed by the trainees during the training period is very enthusiastic and encouraging for the youth.

Remuneration in excess of Stipend by Establishments:

It was observed in many IT companies, automobile/manufacturing companies that they are paying excess of stipend on their own to the trainees. This excess amount varies from 50% to 200% depending on the nature and size of the establishment. Many trainees are getting amount more than the minimum wages. BOAT has to widely canvass the positive aspects of this stipend, and educate the outgoing/final year students of Institutes to perceive the stipend as an honorarium or incentive towards training to learn new things and for personal development. In case of timely disbursal of stipend is concerned, almost all trainees expressed their satisfaction that they are receiving the stipends on time.

This view has to be linked to the establishment views in Chapter-IV. The stipend is paid regularly by the establishments from their coffers, and later on they are reimbursing it. It is another matter that the establishments have some reservations about regular reimbursement from the BOAT. However, BOAT has its own problems, and straddled with heavy work load, and unable to take up the matter with the controlling Ministry, i.e., MHRD. These details are discussed elsewhere. Almost half of the trainees felt that the training period should be extended for another year for thorough skill upgradation and to gain confidence in competencies.

Opinion of Trainees on Fringe Benefits provided by Establishments:

Since the stipend is meager, and negligible, the establishments are fully encouraging the trainees with all types of fringe benefits like (i) subsidized canteen facility, (ii) free/subsidized transport facility, (iii) exposure to recreational facilities that are available to their regular employees. In case of CPSUs of large size, where there is hostel facility for their regular recruitees, the same kind of facility is being provided to the NATS trainees. In case of private industries, they are facilitating the accommodation arrangements in nearby villages/townships.

SECTION – B: TRACER STUDY:

5.7 Ex-NATS Trainees who have successfully completed NATS Training:

It is inevitable to track and monitor the ex-NATS trainees to some extent in order to assess and compare the employability aspects such as improvement in the skill levels purely due to NATS exposure, improvement in chances of employment compared to non-NATS candidates among other things. The ex-NATS employees of the previous two/three batches were traced by (a) in the establishment where they worked as NATS trainees and absorbed in to the establishment, (b) obtaining the addresses of such ex-NATS trainees from the host-establishments, (c) collecting the contact details from contemporary batch mates, establishments, BOAT etc. In all 58 ex-NATS trainees, who are placed either in the same or different establishment were contacted and the details of the outcome are corroborated in the following paras and Tables 5.13 to Table 5.18 :

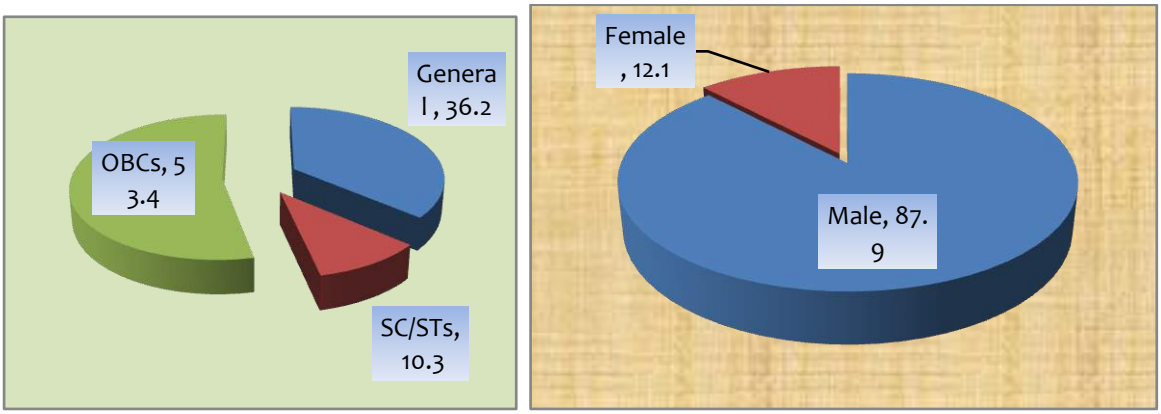
1. Gender & Social Background: 50% of the ex-NATS trainees belong to OBC, another 36% are from General category. 88% of them are males and remaining are females as stated in Table 5.13.
2. Nativity background & sector of employment: Two-thirds of the ex-trainees are hailing from rural areas and got employment in private establishments.

3. Sector of Absorption: Majority of them have got employment and absorption in automobile/manufacturing/processing sectors.
4. Subject of skill/Discpline/Branch of skill: More than 50% of the ex-trainees have got absorbed or employed belonging to Mechanical Engineering branch. Rest of them are distributed across the spectrum of many branches ranging from civil engg, electronics, computer sc. Etc.

Table 5.13 Distribution of NATS completed Trainees Absorbed by Sector Social Category and Gender

Organizational Type	NATS Completed Trainees by Social Category and Gender							
	General		SCs/STs		OBCs		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
CPSU	1	2	-	-	1	3	2	5
SPSU	-	-	-	-	1	-	1	-
Private	16	2	6	-	26	-	48	2
Total	**17**	**4**	**6**	**-**	**28**	**3**	**51**	**7**

Figure 5.13 Distribution of NATS Completed Trainees by Social Category & Gender



Nativity background & Sector of Establishment:

Two-thirds of the ex-NATS beneficiaries are from rural background, and availed the skill development opportunities in private sector._Details are given in the following table 5.14. Other det

Table 5.14 Distribution of NATS Completed Trainees Absorbed by Sector and Location of the Residence

Sector	Rural	Urban	Total
CPSU	-	07	07
SPSU	-	01	01
Private	16	34	50
Total	**16**	**42**	**58**

Figure 5.14 Distribution of NATS Completed Trainees by Residential Location and Sector of Absorption

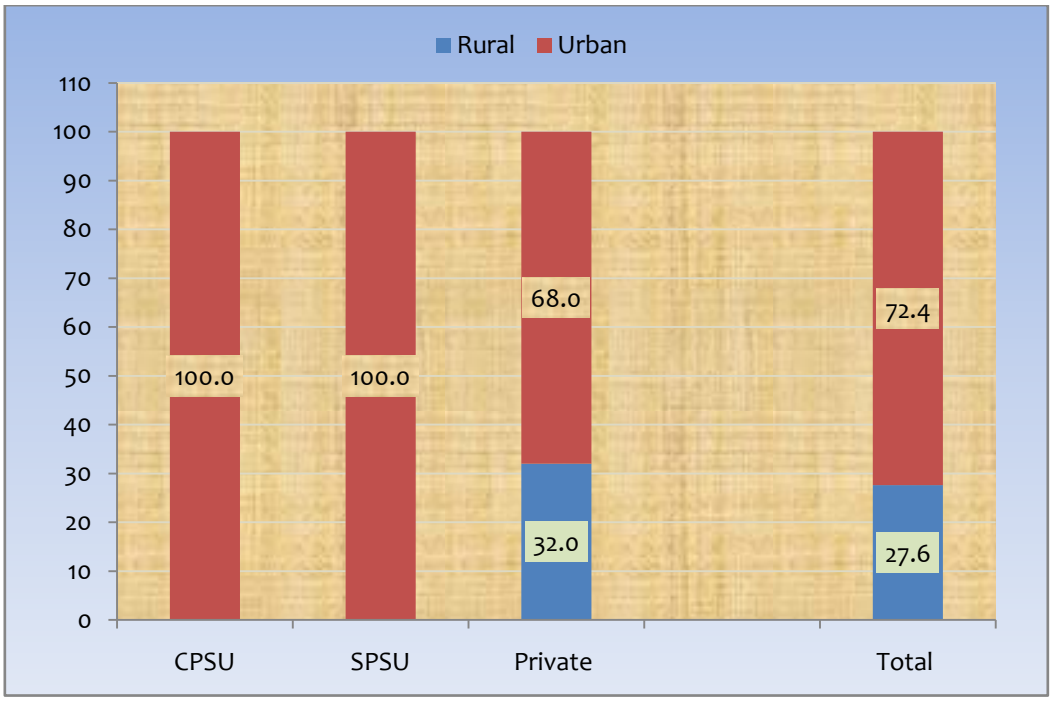


Table 5.15. NATS Completed Trainees by Age, Gender and Sector of Absorption

Organizational Type	NATS Completed Trainees by Age and Gender							
	Up to 20		21-25		26 and above		**Total**	
	Male	Female	Male	Female	Male	Female	Male	Female
CPSU	-	-	-	5	2	-	2	5
SPSU	-	-	01	-	-	-	1	-
Private	9	-	37	2	2	-	48	2
Total	**9**	**-**	**38**	**7**	**4**	**-**	**51**	**7**

Figure 5.15 Distribution of NATS Completed Trainees by Age

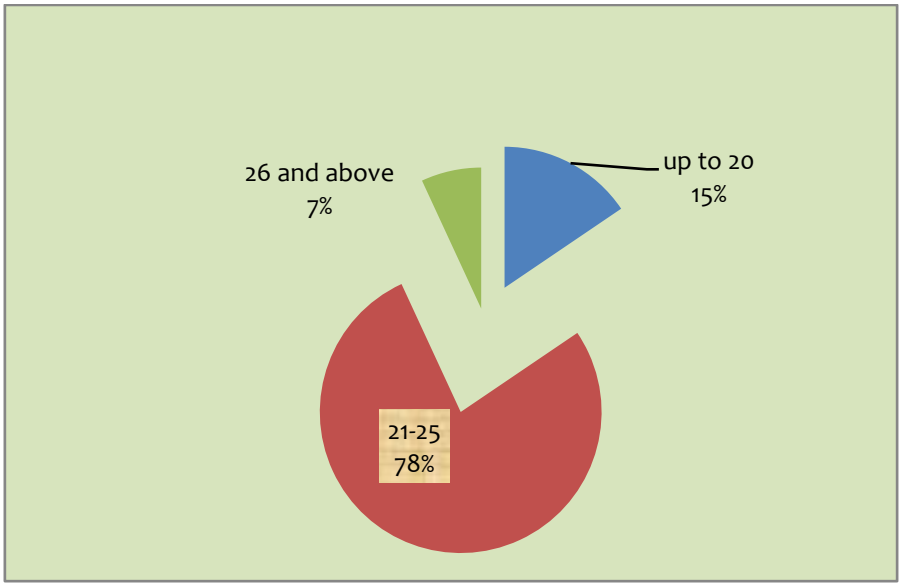


Table 5.16 Distribution of NATS Completed Trainees by Sector of Absorption, Educational Qualification and Gender

Sector	NATS Competed Trainees by Gender and Education					
	Male		Female		Total	
	Degree	Diploma	Degree	Diploma	Degree	Diploma
CPSU	03	-	3	1	06	01
SPSU	01	-	-	-	01	-
Private	20	27	3	-	23	27
Total	**24**	**27**	**6**	**1**	**30**	**28**

Figure 5.16 Distribution of NATS Completed Trainees by Educational Level and gender

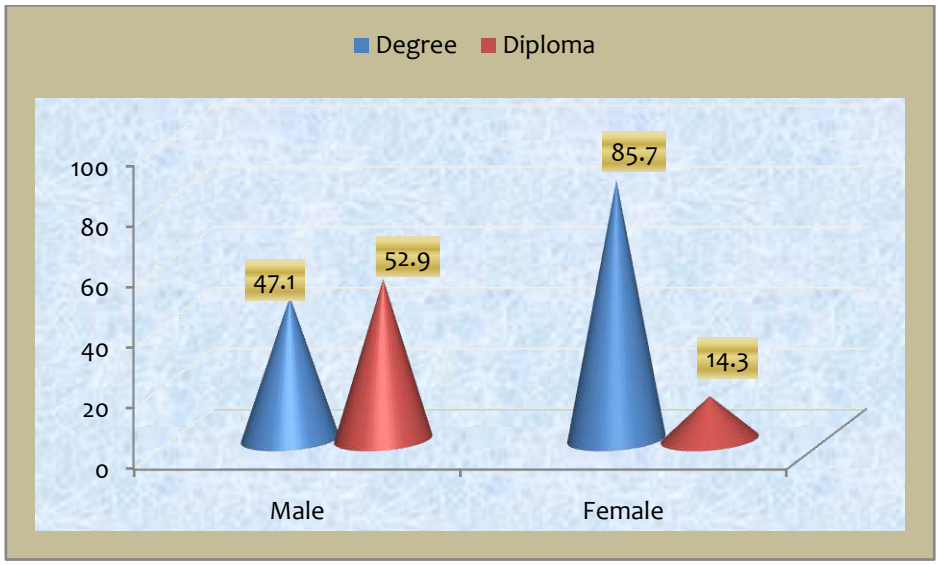


Table 5.17 Distribution of NATS Completed Trainees by Sector of Absorption, Educational Level and Subject Discipline

Subject Field/Discipline	Degree			Diploma			Total
	CPSU	SPSU	Private	CPSU	SPSU	Private	
Automobile Engineering	-	-	-	-	-	03	03
Computer Engineering	04	-	-	-	-	01	05
Electrical Engineering	-	-	01	-	-	01	02
Electronics Engineering	-	-	-	-	-	02	02
Electronic & Communication	-	-	01	-	-	01	02
Mechanical Engineering	-	-	12	-	-	14	26
Packaging & Assembling	-	-	-	01	-	01	02
Production Technology	02	-	-	-	-	02	04
Pharmacy	-	-	07	-	-	-	07
Others	-	01	02	-	-	02	05
Total	**06**	**01**	**23**	**01**	**-**	**27**	**58**

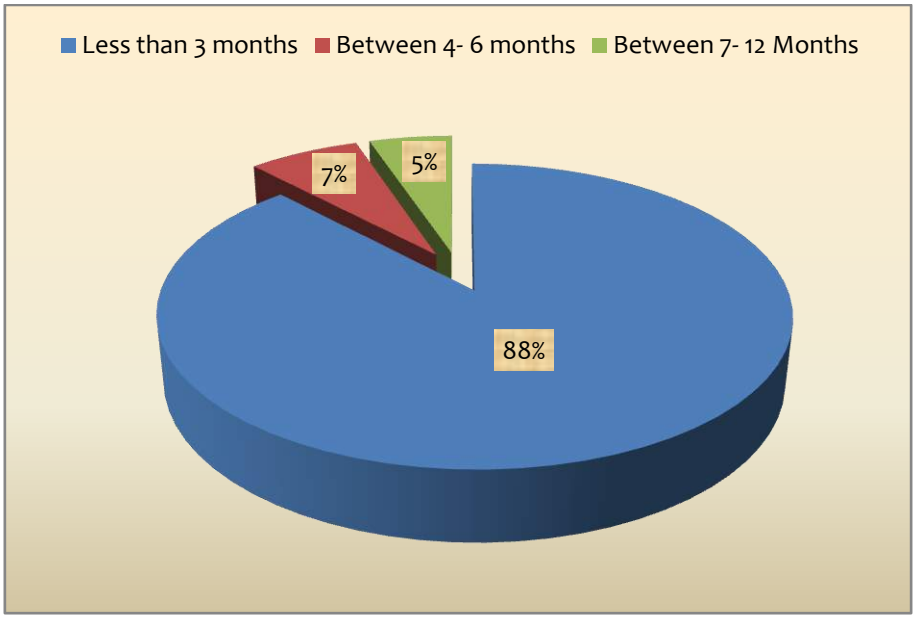
5.8 Waiting Period of Employment after NATS Training:

Following table gives the waiting periods for suitable/gainful and decent employment after NATS training, and with the one-year experience of training during NATS tenure. It was observed that the trainees have achieved extra skills and competencies through one year NATS training, and they did get a suitable job within reasonable time. In majority of the cases, the ex-trainees got the job within couple of months. In other circumstances, without NATS exposure, these same candidates could not have got the job within few months. This is the remarkable achievement and skill development milestone achieved through NATS. The table 5.18 shows the details. 88% of the ex-trainees got the employment within 3 months.

Table 5.18 Table time taken to get First Employment by the Absorbed NATS Completed Trainees

Waiting Period to Get First Employment	Gender		Total	Educational Level		Total
	Male	Female		Degree	Diploma	
Less than 3 months	45	6	51	28	23	51
Between 4- 6 months	04	-	04	02	02	04
Between 7- 12 Months	02	1	03	-	03	03
After 12 months	-	-	-	-	-	-
Total	51	7	58	30	28	58

Figure 5.18 Distribution of NATS Completed Trainees by Waiting Period



5.9 Impact of NATS Training on Gainful Employment

After brainstorming sessions and FGDs held at the headquarters of Board at Chennai with the beneficiaries of NATS (current and ex-NATS trainees, and non-NATs graduates), it was observed from the feedback from all of them that the waiting period for gainful employment has drastically come down in case of ex-NATS trainees compared to non-NATS graduates. This clearly reflects on the skill enhancement with the one-year apprenticeship under NATS.

There are also other empirical evidences at the field level observed by the NILERD research team that the graduates without NATS exposure are still struggling for want of a job, where as the NATS trainees have got gainful employment, after making an entry into a good establishment.

Since, the one-year training is treated as full-fledged experience in small and medium sized enterprise, there is no problem in getting a gainful and suitable employment to ex-NATS trainees.

CHAPTER- VI

INSTITUTIONS: Skills Crisis at Supply Side

6.1 Background

The role of education in facilitating social and economic progress has long been recognized by various scholars, academicians, NGOs, practitioners and policy makers. Education improves functional and analytical ability of human resources and thereby opens up opportunities for individuals and groups to achieve greater access to labour markets and livelihoods. A better educated labour force is essential to meet the labour supply requirements of rapidly changing and growing economy. Education is not only an instrument of enhancing efficiency but is also an effective tool of widening and augmenting democratic participation and upgrading the overall quality of life both at individual level and society as a whole.

In the fast changing & dynamic global scenario with regard to industry and the job market, there is an emerging need for skilled workers. However, the definition of 'skill' in India, and elsewhere in general, has also changed over recent years. India is relatively young as a Nation with around 28 million youth population being added every year. More than 50 per cent of its population is below the age of 25 years and more than 65 per cent are aged below 35. In 2020, the average age of an Indian will be expectedly 29 years, while it will be 37 for China and 48 for Japan. This demographic trend of India has to be utilized effectively by providing suitable training and skilling facilities. At present, only 20 per cent of our graduates are employable. The rest are unable to get suitable employment due to lack of employable skills[21].

In the present context of globalization, the demand for skilled and multi-skilled workers has increased and did throw skills challenges to developing countries like India. Therefore there is a critical need for skill development and training in a qualitative and competitive manner. It has been a long felt necessity to align technical and higher education with the emerging needs of the economy so as to ensure that the graduates of higher education system have adequate knowledge and skills for employment and entrepreneurship. The higher education system has to incorporate the requirements of various industries in its curriculum, in an innovative and flexible manner while developing a holistic and well groomed graduates.

[21] See India Labour and Employment Report, 2014. (workers in the era of globalization), Institute of Human Development, Academic Foundation, New Delhi

6.2. Engineering & Technical Education in India: Turmoil in Waiting

India's engineering and technical Institutions comprising mainly two segments, i.e., Engineering Colleges/Institutes of Technology, and Polytechnic Colleges, offering degree and diploma courses respectively. For the past two decades, there were mushrooming of these Institutes in nook & corner of India's cities, towns, villages, and lanes, by-lanes of highways. Due to lackadaisical regulatory system, quality in these Institutes deteriorated in all respects.

Following table 6.01 illustrates the current details of technical education facilities in terms of (a) total no. of institutes, (b) Intake capacity, (c) Enrolled students, (d) outturn of graduates, (e) placement position for both Diploma and Undergraduate Courses by each state, and all-India comparison. These figures are sourced from the official website of AICTE[22].

In case of States falling in Southern Region, as stated in the following official data, enrollment in Degree & Diploma courses is merely half of the total intake capacity. This speaks volumes about the spate of technical education in India. Placement is again half of the enrolled numbers, indicating the dangerous situation that nearly half of the qualified graduates and technicians are unemployed. There is another drawback with the placement data which can not be authenticated at individual and institutional level. Therefore, the alarming signals are much more intense. Nearly 1000 Degree, and 1400 Diploma Institutes are functioning at present. Barring a fraction of them, majority of colleges remained just "Distributors of Degree/Diploma Certificates" as per the recent survey of Hindustan Times[23]. Further the article mentioned that the current pass-outs from technical institutions are merely eligible to apply for jobs.

[22] Official website of AICTE: http://www.aicte-india.org/dashboard/pages/dashboardaicte.php as on 21 February 2018

[23] Sunday Special Article in Hindustan Times – A Daily News on 28-05-2017, written by Furquan Ameen Siddiqui and Jeevan Prakash Sharma

Table 6.01: Status of Institutions and seat capacity in Southern Region in comparison with All India Figures.

State	Diploma					Under Graduate				
	Institutes	Intake	Enrolled	Passed	Placement	Institutes	Intake	Enrolled	Passed	Placement
Telengana	215	62040	41488	17524	2949	387	174739	81526	68448	28787
AP	321	88636	55777	26322	5508	439	192660	103330	82396	36490
Karnataka	361	101849	66052	33898	9742	273	109276	82718	67883	31078
Kerela	82	22020	18915	9385	3715	213	66383	44427	27016	13130
Tamil Nadu	511	215193	113560	86480	59570	575	288657	163815	144908	89372
Puducherry	09	2830	1474	954	764	19	9030	4111	3753	2509
S.R. Total	1499	492568	297266	174563	82248	1906	840745	479927	394404	201366
All India Total	4587	1302808	766029	467717	166338	4412	1735770	919917	824868	378865

Southern Region Status In Comparison with All India Data : Year 2015-16

Region Vs All India	Diploma					UG				
	Institutes	Intake	Enrolled	Passed	Placement	Institutes	Intake	Enrolled	Passed	Placement
S.R. Total	1499	492568	297266	174563	82248	1906	840745	479927	394404	201366
All India Total	4587	1302808	766029	467717	166338	4412	1735770	919917	824868	378865

In spite of more than half of the pass-outs remaining unemployed, there are several opportunities to reform their career path with better skills with last mile skill development. Government has come out with many schemes for last mile skilling of semi-skilled, unskilled youth. NATS is one such scheme in vogue and has to be sensitized among these target groups. Aspiring Minds[24] has further found in their empirical study that majority of graduates coming from 2-tier colleges/institutions are not fit for employability. Products from these colleges are lacking both analytical and practical skills.

[24] Aspiring Minds: Employability Quantified - National Employability Report of Engineers .

6.3 Vocational Skills at School Level: Suffering with Policy Paralysis

The Indian education system put maximum emphasis on bookish knowledge and rote system of learning. Mostly the curricula do not cover components of employable skills nor is there any option to introduce students to different vocations. The Indian education system does not consider the component of skilling in its curriculum. Option of vocational education is limited to certain boards, which do not cater to the larger target audience. In India there are different boards that follow different systems & curriculum. In the Indian society, an individual pursuing main stream education has a glorified status. On the other hand, vocational education is viewed as a reluctant option for those who are less privileged, incapable of pursuing main stream education or for the vulnerable sections of society. Governments and the Society at large have to work to remove this kind of taboo embedded in vocational system, and motivate the youth towards vocational education.

Problem is further confounded with the fact that all the vocational courses at School level are overlapping with Craftsmen Training System (CTS) of ITIs/ITCs. These two streams are administered by different Ministries/Departments, and there is no coordination and mutual cooperation to strengthen courses at their command. Many more courses in fields such as Hospitality and Tourism, Handicraft, Healthcare, Textiles, Photography, IT, Retail, Banking, and Insurance etc. are also nurtured in the private domain with their own branding/own certification. This was the development due to liberalization of educational services, and opening up of private players out of the ambit of government control & regulation. Private players have adopted newer methods of pedagogy, learning methods, industry collaboration etc. to attract youth to enroll with them.

As a result, the vocational courses at 10+2 level under government control have badly suffered. At this juncture, 10+2 vocational stream needs total transformation, and that is possible through NATS looking at the inherent potentiality embedded in NATS. The scheme can be effectively used to enhance the skills through One-year extended training at work places. However, here again, the 10+2 school suffered badly. NILERD research team field survey speaks that out of the three modules of training (graduate, technician, and technician(voc)), this technician(voc) module is neglected and severely affected.

As discussed in the previous Chapters, and in the Conclusions of this Report, the Vocational Streams at school level suffering from many fronts as stated in preceding paras. After NILERD team's field visits, and interaction with Schools, School Administrators, Establishments, Training incharges etc., the following ground realities have come out. They are

i. 10+2 vocational subjects were started during mid-80s keeping in mind the economic activity, and drivers of economy at that point of time. Employment potential at that time was centered around low-intensity skills, dominated by informal, unorganized sectors. These vocational courses were just enough to cater to such economic activities in those times.

ii. Exactly during that time The Apprentices Act was amended, to include 10+2 school vocational streams into NATS to provide last-mile skilling of those school pass-outs.

iii. However, due to dynamic changes in economic activity, rapid technological changes, and businesses becoming more organized, private players establishing their own back-up training schools to provide customized skilled workers, computerization of processes which eliminated the low & middle-skilled human resources etc. have severely affected the career path of these 10+2 vocational graduates.

To put it in a nutshell, the skills eco-system associated with the technical education system, such as Institutes/Schools offering degrees, diplomas and 10+2 vocational courses has undergone drastic changes. At this crucial stage, NATS is providing extra-mile skills to these pass-outs in the establishments.

In view of the above background, it is necessary to understand the current situation, problems and success stories of the institutions involved in providing technical education, skills and training. In order to investigate wide range of issues, NILERD team has visited various institutions/colleges(both government and privates), polytechnics and vocational schools. A detail description of our investigation in region of India is given in the following sections.

6.4 Coverage of the Institutions: Details of Information Collected :

To get a diverse picture of issues and problems faced by different institutions, selection of samples was done at different levels. This includes engineering colleges, polytechnic colleges. Due to negligible presence of 10+2 vocational stream, this is not taken into account. As the overall picture at the Institutional set-up is visualized and discussed in different forums at apex level several times, only a small sample of 9 Institutes was selected to re-emphasis and not to miss out any local issues associated with skill facilitation at supply side.

Though 47 Institutes were targeted to collect the information, many of the Institutes have not responded due to various reasons like non availability of the principal/head of the institutions, lack of clarity on the benefits of the study, unwillingness to provide data, lack of time or due to their busy

schedule, due to apprehensions of sparing data that may go against them, and so on. Details regarding information so collected is presented in the following tables 6.1 to table 6.7

Table 6.1: Distribution of Responded Institution by Type of Management in Southern Region

Type of Management		
Government	Private	Total
4	5	9

Table-6.2:Distribution of Sampled and Responded Institutions in Southern Region

Type of Institution					
Sampled			Responded		
Engineering Colleges	Polytechnic Colleges	Total	Engineering Colleges	Polytechnic Colleges	Total
32	15	47	5	4	9

Table 6.3: Distribution of Responded Institution by Type of Institute, No. of Branches, Classrooms and Workshops/Labs in Southern Region

Responded Institutions							
Engineering				Polytechnic			
Number of Institution	No. of Branches	No. of Classrooms	No. of Workshops /Labs	Number of Institution	No. of Branches	No. of Classrooms	No. of Workshops /Labs
5	16	109	100	4	18	188	71

Table 6.4: Distribution of Responded Institution by Faculty's Qualification in Southern Region

Institution					
Engineering College			Polytechnic College		
Number of Institution	Number of Faculty		Number of Institution	Number of Faculty	
	Ph.D	Post Graduate		Ph.D	Post Graduate
5	47	294	4	2	63

Table 6.5: Distribution of Seating Capacity, Enrolment and Drop-out by Responded Institute in Southern Region

Institution							
Engineering College				Polytechnic College			
Number of Institution	Seating Capacity	Enrolment	Drop-out	Number Of Institution	Seating Capacity	Enrolment	Drop-out
5	2250	2989	11	4	156	1380	0

Table 6.6: Distributions of Branches/Disciplines by Responded Institution's Placement in Southern Region, 2015-16

S. No	Name of the Branch/Discipline	Number of Placement from Type of Institution	
		Government College	Private College
Diploma Colleges			
1	Civil Engineering	28	17
2	Computer Science	--	8
3	Electrical Engineering	36	31
4	Electrical & Electronics Engineering	--	9
5	Mechanical Engineering	47	37
6	Metallurgy	14	--

Table 6.7: Suggestions given by Responded Institutions in Southern Region

S.No.	Suggestion given by Responded Institutions
Diploma Level Institutions	
1	To meet industrial needs through continuous assessment and curriculum revision
2	Students who are drafted for Industrial Training may be offered Stipend @ Rs. 1,000/- per month. All the Industries may be made mandatory to impart Industrial Training to the Students

6.5 Qualitative Aspects of Institutions Covered:

In the light of many empirical observations by several researchers, that there is wide discrepancy in qualitative & analytical factors among the pass-outs from different types of colleges, vis-à-vis type of management of colleges, this section is pertinent here. Whether it's a government or private management institution, it provides a holistic development of technical and

other skills through exposure to teaching, industrial training, consultancy and research and interaction with industry leaders. All these aspects in institution help the students to cultivate practical and efficient skill sets basically required in the industry. When the graduates enter the corporate/industry arena, they are able to efficiently identify various issues and come out with the best possible solutions to tackle them through their multifaceted skill sets. In the global business environment, challenges faced by organizations are of dynamic nature. Exposure to practical skills is crucial as it helps the student to work in networked multinational industry or companies having presence in many continents.

From the perspective of different states, and the type and level of Institutions covered, the basic variables that govern the qualitative factors are collected and collated. Some of them are as follows: (a) Number of Branches, (b) number of class rooms, (c) faculty's qualifications, (d) number of faculty per a set of students, (e) seat capacity, (f) placement data of each branch, and an attempt to draw a popularity index out of it, (g) perception of faculty, students on the latest practices of Institutions etc. Data collected on these factors are illustrated by state-wise representation in the following Tables (Table 6.3 to Table 6.6)

6.6 Distributions of Branches/Disciplines by Responded Institutions and the details of Placements

Main problem regarding internships and placements is Skills and Competencies. Youth of today think they deserve money and a job just because they have a degree in engineering. It is quit known fact that the situation of the universities are pathetic when they award engineering degrees. One should have enough skills and capability to demonstrate competencies to secure a good job. Merely having a degree in engineering doesn't entitle the graduates for paid internships or placements. This is the main problem with engineering colleges in India.

However, there are cases of "Islands of Excellences" and "Islands of Exceptions" in large pool of the technical institutions and vocational schools. Significant number of Institutions under government domain like IITs, NITs etc. are the role models and world class Institutions in all respects. These Institutes remained as Islands of Excellence in the Indian Technical Education. In the private domain also, there are large number of Institutions standing upto the stiff competition to attract talented students for enrollment. This type of Institutions are also devising innovative curriculum and novel methods of pedagogy, courses to cater to the emerging needs and technologies. They are the Islands of Exceptions in the large pool of private institutions with mediocre talent. Placements in private domain are mainly in branches related to IT/Software/Computer Sc. Fields, and to a significant level in the branches of Mechanical, Civil Engg. In case of Polytechnics of both types (Govt. and

Pvt), the placements are largely in the areas of Mechanical, Automobile engg, and Civil Engg. Fields. Moreover, the figures of placements in private institutions are always subject to scrutiny. Therefore, the popularity of the branches, vis-à-vis the placement data of colleges will not give a complete picture.

6.7 Distribution of Institutions by their Perception on Qualitative Issues

During NILERD's interaction with the representatives of Institutions, opinion on the important qualitative parameters were posed to the HoDs of the organizations or the Training and Placement Officers(TPO) regarding their perception on various issues and their responses were recorded. The opinions were specifically pertaining to the following qualitative aspects to minimize the gap between demand(from industry) to supply(from Institutions).

i. Whether the course content fully satify the Industry needs?
ii. Whether the last semester to be integrated with the industry needs by collaboration with Industry ?
iii. Whether there should be any concept of "Adjunct Professorship" offered to Industry experts to take full control of last semester and teach the skills needed in industry. ?
iv. Moulding the syllabi as per the Industry needs
v. Off-site training/Industry oriented project work/Project work at Industry as part of fulfillment of Degree/Diploma ?

There were mixed responses from the group of Institutes. Some of them are documented here;

a. Many of the institutions are of the view that their course content is fully satisfying the needs of the industry.
b. In case of institutions under private domain, the course content seems little more dynamic as compared to the government managed Institute.
c. Institutes were very positive to the idea of exchange of faculty between Industry to Institute on regular basis. But to build a framework within the concept is difficult as there is no uniformity in this matter.
d. .All Institutes have responded positively on molding of the syllabus as per the latest needs of establishments, and new technologies.
e. Institutes have also strongly advocated for compulsory training to graduates for last mile skilling to suit to the needs of latest and modern industry sector. Institutions are in agreement that reorientation of syllabi shall take place frequently to the needs of the Industry with a focus on more practical learning.

6.8 Suggestions by the Responded Institutions vis-à-vis NATS

All the sample institutions were asked to provide their suggestions to improve the current pattern of NATS training, and the problem faced by the student to get into it. Summary of the outcome is given by Degree/Diploma etc.

6.8.1 Degree Level

For degree level students the issues vary from place to place. However there are some general issues like, lack of awareness among students regarding the NATS. Many of the institutions suggested that the advertisement for the NATS should be more visible. The other important suggestion given by many institutions is that, a nodal centre of BOAT should be set up at state level preferably at state capital so that the institutes and the industry can take part in the awareness and usefulness of NATS in a more meaningful way. The institutions felt that the students should be given more opportunities for improving their practical knowledge and their soft skills. This can be done by more and more visits to industry during their study tenure. The summer internship in industry should be taken more seriously. On the other hand, host of institutions complain that big industries conduct campus recruitments only in reputed colleges and ignore the two-tier Institutions. They felt, the students should be given a fair and equal opportunities at par with others. Large number of institutions also agree to revise the course curriculum as per the industrial needs.

A general suggestion given by almost all the sampled institutions is about the amount of stipend. After getting degree, many graduates are able to get a job, with a salary in the range of Rs. 15,000/- to Rs. 25,000/- pm. This variable is weighing down the NATS stipend of less than Rs. 5,000/- pm. Besides, the limited tenure of one year as against a permanent job is also a reason for graduates not opting for NATS. In such situation if the stipend amount is increased atleast at par with the minimum wages, then more and more pass-outs will be attracted to join NATS in future.

6.8.2 Diploma Level

At the diploma level many issues are same as in the degree level. However some of the specific suggestions given by the Institutions are making the NATS as compulsory component for the diploma students in the last semester of the course. To convass the NATS among the outgoing students, and other placement related issues, all the Polytechnic institutions have a Training and Placement Officer(TPO) cell. However, in real terms we have found in many states that, the TPO cell is very weak. There are no faculties with networking capability in order to create a link with establishments on regular basis for campus placements. Besides, the TPOs are straddled with

deficiencies such as human resources, physical infrastructure, funds to mobilize the Industry fraternity, and to build brand image of the Institute. TPOs suggested that with some reasonable funds from NATS, they will be able to motivate the students to enroll in the one-year NATS training. Some institutions suggested that, there is a need for standardization of the workshop and lab with the Industry. Industry involvement in the lab development and up-gradation will be helpful for Polytechnics.

6.8.3 10+2 (vocational education) Level

There is only a miniscule presence and negligible magnitude of this stream in Southern Region. It has lost its charm and attraction due to overlapping of the courses with courses offered in commercially well organized private sector. This vocational schooling was initiated during 1980s keeping in view the dynamics of skills, vocations and market dynamics, drivers of economy at that point of time. Gradually, due to generic changes, fast changing technological progress, rapid modernization of industrial sector, and service sector, altogether new set of skills and vocations are emerging out. Many of the emerging skills with new set of dexterity, competencies were incorporated into the more organized sectors such as ITI/Craftsmen Training System, and many more skills are nurtured under private domain due to encouragement of training systems under private set-up. As a result, this vocational school system mostly under government control is unable to cope with the changing dynamics and reforms in skills and overall skill eco-system of the modern type. To revive the vocational school system, and for strategic reasons, it is better to amalgamate it with the craftsmen training system(CTS) and align the course contents with ITI system.

There is another technical problem with the vocational school system. The graduates of the vocational stream are less than 18 years of age, and they are not accepted in industrial establishments even as trainees. This apart, coupled with lack of suitable employment avenues, they are opting out of the vocational streams altogether, and joining in the mainstream courses for upward mobility. Suggestions given by the Institutions are documented in the following table.

Table 6.8: Suggestions given by Responded Institutions in Southern Region

S.No.	Suggestion given by Responded Institutions
Degree Level Institutions	
1	Curriculum may be updated to meet the present day industry requirement
2	Engineering graduates apprentice stipend should be raised
3	New courses are introduced and curriculum & contents are designed by subsuming the emerging technologies, input from various stakeholders & the strengths of the department/university
4	There should be common curriculum of the core courses at the NITs council level for all the NITs & add on/elective course should be as per the focus of the institute & available faculty expertise and also keeping in view the industrial/regional requirements
5	The fee waiver to the SC/ST/PWS/ Income based should be directly credited into the student's accounts and institute should be allowed to charge full fee from the students
6	There should a gap of 3 months between course completion at Institute and commencement of NATS Training
7	Centralized Customer Service Centre may be opened for nation-wide services to resond to all the doubts. Wide publicity should be given to NATS through such National Call Centre
Diploma Level Institutions	
1	Last semester of diploma students should be deployed for internship in their relevant field's industry so that they can be familiar with the working environment and can gain skill in the latest technology of the industry or organization
2	T & P Cell should be centralized so that industry and DTTE can have single path platform for all technical institutions (under DTTE) and industry
3	More practical course should be developed
4	Curriculum should be designed in a manner to incorporate more modules as per the requirement of the industry
5	Syllabus should be framed as per industry requirement
6	To create a centre of excellence for productions of technicians with technical competency, supervisory skills and contributors to community
7	Emerging technologies should be incorporated in related curriculum
8	Courses should be revised after every two years and should meet industry demand
9	Course should be practical orientated to meets out the industry need
10	Employment Exchanges may be utilised for placement services

6.9 Skill Gap Analysis – Institutional Deficiency : Opinion of Faculty

Opinion was sought on the skill deficiency at the Institutional level with respect to the demands & expectations of knowledge and skills from the outgoing students. Following table 6.9 gives the opinion of the faculty by stream-wise (Degree/diploma/voc. school) on the subject of gaps in demand-supply of skills. The measurement of gap has been distributed at three levels such as degree, diploma and vocational levels. The gap between supply and demand was measured in the scale range of 10 per cent to 50 per cent. From the responses of the faculties it is clear that in case of degree institutions, the faculty felt that the gap is at 25 per cent. But in case of diploma courses, majority of the faculty felt the gap is around 50 per cent. In case of vocational courses also most of the faculty felt the gap between supply and demand is 25

per cent. Above speaks volumes about the spate of quality of Institutions admitted by their own faculty.

Table 6.9: Distribution of Faculties opinion about gap between supply and demand in terms of quality of skills in college Vs needs of industries

Type of Institute	10% Gap	25% Gap	50% Gap
Degree	17	41	28
Diploma	9	33	39

6.10 Faculty's suggestions for improvement in the quality of skill training at Institutional Level

During the field survey, selected faculty has been requested to furnish their views in a structured questionnaire for the improvement in the quality of skill training in the Institutions. The views are summarized in the following table 6.10. For the degree students special seminar on skill enhancement and arrangements for frequent industrial visits will be useful as per their suggestions. In case of diploma institutions the faculty felt that, more workshops, and training sessions are useful. Apart from this, if there is a provision of six months internship at the Establishment level preferably with stipend, it will be more helpful to get practical knowledge for students. Similarly, for the vocational students if there is an incentive to study vocational education they will be motivated and the number of enrolment in the vocational schools at 10+2 can be increased.

Table 6.10: Distribution of Faculty's suggestion for improvement in the quality of skill training in colleges in Southern Region

S.No.	Type of Institution	Suggestions
1	Degree	i. Focus on quality of skills imparted at class room level. ii. Special seminars on skill enhancement to be arranged and more industrial visits and platform for interaction with industries needs to be organized for the students. iii. Faculty Development Programs (FDP), Quality Improvement Programs (QIP) to be made compulsory for Faculty during summer and winter vacations.

2	Diploma	i. More workshops -cum-training sessions for students with industry needed. ii. Internship period for students with industry for six months on fellowship will be of great help to students during studies.
3	Vocational	i. Teachers/Instructors should be abreast with the latest syllabus, developments in skills ii. Reform the syllabus at state level and align the courses at par with CTS/ITI system. iii. Dedicated, and extended tenure of one year with attractive scholarship at school level to motivate the students. iv. Workshops-Seminars/Sessions at State/Regional/Zonal level to vocational teachers

6.11 Summary and Conclusion

The overall discussion above reveals that, in order to achieve the objectives of better placements and jobs, the trainings should be provided as per the industry demand and as per the curriculum recognized internationally. The curriculum content and design of courses should be in synchrony with the changing technological progress, and to suit the industry needs. The Training course modules should be in accordance to local industry demand and acceptable at state/national level industry. The course curriculum should be designed to ensure certification of industry standards. There should be emphasis on soft skills like basic communication skills, professional etiquettes etc.

The duration of the course and class room lecture can be minimized and supplemented with practical trainings in the industries. Nowadays there is a trend of dual-purpose courses conceived and designed by few reputed private universities catering to the fast-changing industrial needs. In these select private universities, there is an active participation of Industry bodies. During our field visit some of the industries suggested that, training and skill development is crucial for providing decent employment opportunities to growing youth population and the curriculum has to be evolved in consultation with and active involvement of the industries who are the job providers. In case of vocational training at school level, situation is further grim. There are challenges of quality, accreditation, certification of such courses coupled with private players offering innovative methods of training. Policy makers have to focus seriously on this segment of vocational training.

Our Country has come a long way since Independence. As Pandit Jawahar Lal Nehru, the first PM of our Country had said: "There is going to be no lack in India, of trained people having opportunities of doing worthwhile work. If there is some difficulty, it means that our organization has gone wrong – it has slipped somewhere". There is every opportunity to reform and put the system back on the track.

CHAPTER– VII

BOAT(SR) Organizational Structure:

SWOT Analysis, Conclusions, and Recommendations:

7.1 BOAT(SR): Staff Strength and Organisational Structure

BOAT(Southern Region), Chennai is an autonomous body(Registered Society under The Societies Registration Act, 1860), brought under the purview of Apprentices Act, 1961 by Apprentices (Amendment) Act 1973. It is working under the overall control of Department of Higher Education, Ministry of Human Resource Development(MHRD), Government of India. Director of BOAT(SR), is also known as Director of Training & Regional Central Apprenticeship Adviser– Southern Region, is the Chief Executive Officer of the Board. At the apex-level, Deputy Educational Adviser(Technical), MHRD is the controlling authority of the BOAT(SR).

In all day-to-day functioning, and for all administrative matters, BOAT(SR) is guided by Board of Governors(BoG) consisting of 22 eminent personalities from the stakeholders and complimentary/subsidiary stakeholders dealing with NATS. The constitution of Board of Governors consists of representatives from (a) Industries(Central, State, and Private Establishments), (b) Institutions(Engineering Institutions offering Degree, Diploma, Sandwich courses, and Vocational Courses), (c) Officials from Central Government, i.e., MHRD, AICTE, (d) Officials of Technical Education from State/UT Governments of BOAT Jurisdiction, (e) Officials of State/UT Governments concerned with the policy matters of technical education, training, vocational education, (d) Representatives/Industrialists from Business/Commerce Federations, Industry Associations. Composition of the Board of Governors is reconstituted once in three years.

Chairperson of the Board of Governors(BoG) is an eminent scholar of repute from Institute/Eminent Industrialist of the region, being nominated by the Government of India on tenure basis. Director, BOAT(SR) (also known as Director of Training) is the Member-Secretary of the Board of Governors(BoG). The BoG guides the BOAT(SR) for smooth and effective implementation of the NATS. All administrative powers of BOAT(SR) are vested with the BoG, and BOAT(SR) reports to the BoG in all matters of administration and for endorsement of all major decisions. Few ex-officio members will be nominated to the Board on need basis.

Details of the staffing pattern is shown in the above table 7.1. Sanctioned strength of the Board is 61, and presently 31 positions are filled-in. At present Director of BOAT(SR) is assisted by one Deputy Director of

Training, and 2 Assistant Directors of Training, an Administrative-cum-Accounts Officer, and supporting staff of 26 who are currently on-roll.

Table 7.1 Staff Strength – Sanctioned Vs In-position

S.No.	Designation	Sanctioned Strength	Filled-in positions
1	Director	1	1
2	Deputy Director	1	1
3	Assistant Director	7	2
4	Administrative- cum Accounts Officer	1	1
5	Documentation Officer/Assistant Director	1	0
6	Programmer/System Analyst	1	0
7	Programme Assistant	1	0
8	SAS Accountant	1	0
9	Office Superintendent	1	1
10	PA to Director	1	0
11	Technical Assistant	1	0
12	Junior Accountant	1	1
13	Analyst	3	2
14	Hindi Translator	1	0
15	U.D.C	11	9
16	Stenographer	3	2
17	L.D.C	16	8
18	Driver	2	2
19	Duplicating Operator	1	0
20	Daftry	1	0
21	Peon	3	1
22	Chowkidar	1	0
23	Sweeper	1	0
	Total	61	31

7.2 BOAT(SR): SWOT ANALYSIS

Jurisdiction of BOAT(SR): Board is having its jurisdiction in 5 States and one UT of Southern Region. They are Andhra Pradesh, Telangana, Tamil Nadu, Karnataka, Kerala and Puducherry. It has 61,213 seat capacity in all three categories of apprentices, spreading in the network of 2708 establishments as on 2016-17. A brief SWOT analysis of BOAT(SR) is done after close examination, and rigorous interaction with the stakeholders. Within each category of SWOT, all the issues are illustrated for the overall improvement and achieving effectiveness of NATS.

Strengths:

a. BOAT is an autonomous body and vested with powers to execute the NATS in letter & spirit in all the establishments under its jurisdiction.

b. Facilitator of out-going graduates from technical institutions in new-age skill development/skill enhancement in the state-of-the-art enterprises.

c. It has powers to identify the new & technology-rich establishments, identification and reassessing of seats in establishments, and new branches/disciplines, skills etc.

d. Easy accessibility of data/information to the stakeholders/beneficiaries/outgoing students pertaining to availability of seats in establishments by type, nature of establishments.

e. Transparent, centralized method of registrations for enrollment of trainees, paperless transactions to the possible extent

f. Stipend as an incentive for skill up-gradation - a unique scheme.

g. It has got maximum number of apprentice slots of more than 61,000 at present, and likely to increase due to the priority of MNC and large companies to establish manufacturing, service, IT, and consulting firms in the Southern Region.

Weaknesses:

a. Very limited officers compared to the quantum and magnitude of huge work load, both on-shore, and off-shore. Historically, 30% of the total staff strength is vacant at any point of time. Presently, there are only 6 officers manning the entire system of NATS. Present hierarchy is Director + Deputy Director + 4 Asst. Directors. This needs to be changed to Director +3 Deputy Directors + 6 Asst. Directors. To utilize large pool of vacant seats, and to identify & update the list of establishments, it is inevitable to strengthen BOAT by sufficient human resources. This step will improve the utilization of seat capacity, prompt disbursal of stipends to establishments among other things.

b. At present, there are 31 total staff which includes 4 officers in struggling hard to cover all the core functions of Board in day-to-day activities. This strength again is meager keeping in view the gamut of activities being undertaken, processing of records & returns, and stipends etc. Similarly, the staff strength should also be increased to cope up with the increasing magnitude of the work on yearly basis.

c. Though autonomous in nature, its administrative & financial powers are limited. Controlling Ministry may take note of the problems and initiate action for smooth & fast decision making by easing the financial & administrative powers at BOAT level. This will facilitate degree of independence in smooth functioning of BOAT and speedy redressal of problems.

d. Difficulty to cover entire jurisdiction due to vast geographical area. Duties of BOAT warrants frequent visits to every state, and UT. Farthest place of major establishments is 1,000 km away from Headquarters. There is a genuine need to establish a full fledged extension offices in the headquarters of each state.

e. Looking at the historical figures of Board, and the present status, 50% of the sanctioned positions are vacant at any point of time. In case of Officers(Director, Dy Director, Asst.Director), out of 9 sanctioned positions, 5 are lying vacant. Filling the vacant posts also taking very long time. Looking at the huge number of slots of apprentice seats, there is a need to fill vacant positions of officers. The duties and responsibilities of Director, Dy.Director, and Asst. Director are crucial in implementation of NATS, and to achieve the objectives enshrined in the ATS Act, these posts should not be lying vacant for a long time. BoG/Recruiting Agency may take care of the anticipated vacancies/superannuations and then take necessary steps in advance as the procedure is cumbersome.

Opportunities:

a. Large pool of vacant seats to be utilized for skill development. This is a great opportunity to outreach to Institutes located in rural areas to fill the vacant seats for skill development. Following table 7.2 reveals that there is severe under utility of seats in all states except in UP and Haryana. However, in case of UP and Haryana, there is excess utility due to *en masse* absorption of graduate under NATS in IT/software industries. This may be regulated as IT companies are showing their genuine recruitments under NATS. The stipend, thus may be utilised in other type of establishments, and the focus should be to increase the percentage seats in states like Rajasthan, Punjab, HP, J&K, and UTs of Delhi and Chandigarh. Focus should be on J&K, where there is hardly 3% utilization of seats. Extra efforts will facilitate youth empowerment and employment in the valley of J&K.

b. Can start facilitation centres/extension centres/branch offices in each state. To begin with these BOAT-extension centres may be started in

major industrial clusters, and Institutional hubs to canvass & popularize the NATS.

c. Opportunity to tie up with major establishments, advanced units in technology to collaborate with Board in starting extension centres in Industrial clusters. Major Establishments can facilitate networking of auxiliary industries to be active stakeholder of NATS.

d. Outreach to untapped establishments such as agro-based industries, food processing industries in rural areas where Institutions are located. States like UP, Punjab have high potential in identification of slots in agri-processing, post-harvest technologies.

e. Moderator of Industry-Institute Interaction programs, and awareness meetings in rural areas and private Institutes.

f. Alignment of NATS with other skill development programs at national level

g. Networking with establishments/Institutions/BOATs & BOPT of other regions to bring synergy in their activities.

Threats:

a. The brand value of NATS is not improving in spite of several steps in its implementation. Recent amendments to The Apprentices Act for smooth implementation, such as removal of strictures on establishments, easy processing of applications etc. did not yield much results. Therefore, it is vital for Branding & Image makeover of NATS. One of the options is collaborating and handholding with other skill development programs initiated by Central Government. Central Government may take over the branding of NATS under its flag-ship programs of Skill Development.

b. Too low stipend, acting as a deterrent rather than incentive. This is less than ITI/CTS stipend, and much lower than minimum wages of unskilled workers. Either there should be sensitization to project the stipend as mere "pocket money", or "inceptive for extra-mile efforts in skill development". This kind of canvassing strategy will push the scheme forward, and attract more youth towards NATS.

c. Institutes & outgoing students adamant nature – reluctance to recognize the potentiality of NATS as skill facilitator.

d. Institutes in rural areas not accessible to BOAT.

e. Needs urgent revamping of Tech(Voc) Apprentice segment to align with the current dynamics and eco-system of labour market. Vocational skills in school system are out of sync with the current skill dynamics.

7.3 Work load increase of BOAT(SR) for the past 5 years:

The work load of the Board has increased tremendously, ever since the Board was started four decades ago due to many reasons, and some of the reasons are very much specific and peculiar to the Southern Region. Some of them are (a) there is a gradual increase of workload in terms of identification of new establishments, (b) fixing of additional apprentice seats in order to cope with the demand and outturn of technical graduates from the colleges, (c) mushrooming growth of technical institutes in southern region, and producing skill-deficient technical personnel, who are rushing to BOAT(SR) to enroll in NATS to make up their skill gaps, (d) four-decade old hierarchical set-up of BOAT(SR) which did not envision the current crisis are among many serious problems , the board is facing. All these factors are posing heaving challenge to the present set-up, and strengthening in terms of physical infrastructure, and additional human resources is inevitable. The burden of handling of workload is increasing gradually, and the figures of the last five years are captured and presented in the following tables 7.2 to 7.4.

Table 7.2: Growth of Apprentices Seats during last 5 Years:

	GRADUATE						TECHNICIAN					
YEAR	AP&TL	KN	KL	TN	PY	TOTAL	AP&TL	KN	KL	TN	PY	TOTAL
2012-13	2881	3656	2170	6443	89	15239	1762	2537	1314	14415	514	20542
2013-14	5144	4057	2779	11047	76	23103	1709	2989	1519	17507	400	24124
2014-15	5135	5011	3918	11925	58	26047	1821	3192	1674	18489	468	25644
2015-16	4444	4817	4575	13289	188	27313	2301	4074	1696	21867	728	30666
2016-17	3960	4580	2120	14556	84	25300	1945	3432	1755	19196	793	27121

Table 7.3 Growth of Establishments during the past 5 years.

	CENTRAL						STATE						PRIVATE					
YEAR	AP&TL	KN	KL	TN	PY	TOTAL	AP&TL	KN	KL	TN	PY	TOTAL	AP&TL	KN	KL	TN	PY	TOTAL
2012-13	40	43	82	68	4	237	51	63	193	141	14	462	321	246	165	1146	80	1958
2013-14	40	43	94	69	4	250	51	63	205	141	14	474	331	246	176	1181	80	2014
2014-15	40	44	96	69	4	253	51	63	206	141	14	475	359	339	182	1226	80	2186
2015-16	41	46	96	69	4	256	51	63	206	141	14	475	386	361	182	1250	84	2263
2016-17	41	46	96	69	4	256	51	63	206	141	14	475	398	361	182	1250	84	2275

Table – 7.4: Geographical Outreach & Utilisation of Seats for the Year 2016-17
(Total figures including Graduate Apprentice + Technician Apprentice)

State/UT	Identified	Utilised	%age Utilisation
Andhra Pradesh & Telangana	9364	5905	63.06
Karnataka	12534	8012	63.92
Kerala	6771	3875	57.29
Tamil Nadu	31438	33752	107.37
Puducherry	1106	877	79.30
Total	61213	52421	85.64

Above statistics reveals that during the past 5 years, the NATS seat capacity in case of Graduate slots has increased by 67%, where as in case of Technicians it has increased by 35%. There is also rise in the establishments significantly. As stated in the previous paras, the rise in graduate seats is due to abnormal increase at the supply side, i.e., institutions.

7.4 BOAT(SR)'s Contributions: Innovative Efforts to Popularize NATS

After close examination of structural mechanism of BOAT(SR), as part of empirical research, it was found that BOAT(SR) is delivering to its maximum effectiveness in spite of inherent hurdles, i.e., shortage of manpower, sparse distribution of establishments in vast geographical jurisdiction. During 2016-17, BOAT(SR) has made several attempts to build the brand image of NATS and to canvass the NATS among the important stakeholders, i.e., Establishments, Institutions, and outgoing students of technical institutions. It has explored all the avenues to put NATS at the limelight and to make it successful in all available platforms. Records of BOAT(SR) speaks that it has made the following efforts to improve the overall effectiveness of NATS.

Some of the innovative, and outreach activities of Board to popularize the NATS among the stakeholders are listed below (the figures are for a cumulative period of 5 years):

a. Career Guidance Programs (CGP) for outgoing students: BOAT(SR) has mobilized 351 Institutions with total participation of 15,070 prosperous job seekers(outgoing students). It has spent 31 dedicated days for this job involving the officers of Board. Total person-days spent are 600.

b. Supervisory Development Programs(SDP) for Establishments: BOAT(SR) has conducted on-site orientation classes in 245 establishments, roping in their HR/Trg Managers. Dedicated 26 working days were devoted for this activity, which covered a total of 3,485 on-roll NATS apprentices from the establishments. Total person-days spent on this activity are 260.

c. Industry-Institute Interactions on core skills and NATS:

This is the program of outreach to two important stakeholders of the NATS, i.e., Establishments (demand-side of skills), and Institutes (Supply-side of skills), and to bring out synergy among these two groups. BOAT(SR) has achieved the following milestones in this outreach program.

(i) Covered 181 establishments and 300 HR/Training Managers in a with a cumulative 14 working days.

(ii) Visited 152 Institutes and discussed with 263 Faculty members in a total span of 14 working days. For both the programs total person-days spent is 520.

Summing up of all the above programs from (a) to (c), the Board has achieved the outreach of 426 Establishments, 300 HR/Trg Managers, 3485 Apprentices, 503 Institutes, 263 faculty, and 15070 outgoing students in 75 days of cumulative working. Total person-days spent for such programs are 1380. Details are given in Table 7.5.

Table – 7.5. Innovative Efforts and Outreach programs conducted by Board

SNo	Type of Program	No. of Institutes/ Estt	No. of Faculty/ HR/ Trg Mgrs Participated	No. of outgoing students/ Apprentices	No. of days	Person-days involved in such programs
1	Career Guidance Program (CGP) (for Institutes)	351	-	15,070	31	600
2	Industry-Institute Interaction (III) on core skills of NATS (for Institutes)	152	263	--	14	520
3	Industry-Institute Interaction (III) on core skills of NATS (for Establishments	181	300		14	--
4	Supervisory Development Program (SDP) (for Establishments)	245	--	3,485	26	260
	Total	426 (Estt) 503 (Instt)	300 (HR/Trg) 263 (Faculty)	3,485 (Apprentices 15070 (Students)	30 (Estt) 45 (Instt)	1,380

d. In addition to the above coverage, following Bharti Mela activities were also conducted by Board as a last-mile efforts to improve the effectiveness of the NATS which is given in Table 7.6.

Table-7.6 Bharti Melas Organised and coverage for the past three years.

S.No.	Particulars	2015-16	2016-17	Cumulative Figures
1	No. of Places of BhartiMelas	34	28	62
2	No. of Establishments / Recruiters participated	845	864	1,709
3	No. of Job Aspirants (outgoing Students) Attended	29,398	29,608	59,006
4	No. of Jobs Offered	12,398	9,798	22,196

e. Other Efforts of BOAT(SR):

Apart from the above regular programs, there are other motivational, and sensitization programs being conducted by BOAT(SR) to upscale and to enhance the value addition to the NATS. Special camps are organized for the officers of Establishments (officers responsible for execution and implementation of NATS at establishments) to highlight the transparent methods of NATS implementation, to remove infirmities if any with the NATS, and to eliminate apprehensions in the minds of key stakeholders, especially at Institutional and Establishment level.

7.5 Impact of NATS System on Skill Development: Role & Significance of BOAT

There are many intangible and indirect impacts and benefits accrued and contributed to the overall improvement in skill development and skill enhancement. All these efforts are being implemented and executed directly through BOATs and through their organizational set up.

7.4(i) Employment Profile of NATS pass-outs:

Some of the success stories of the NATS beneficiaries is enclosed in a separate chapter (Chapter-8)

7.4(ii) Competency Gap & Employability level:

Most of the pass-outs revealed that the NATS is providing excellent opportunity to fill the competency gap/skill gap associated with educational qualification/degree. NATS is a means for getting good employment and improving employability. Interaction with the

stakeholders, mainly, the final year(outgoing students), and NATS enrolled trainees revealed that there is a dearth of hands-on training at Institutional level which is fulfilled through the NATS. On-roll trainees are enjoying the hands-on experience with their background on analytical & theoretical knowledge at Institutional level.

Feedback, and information gathered from pass-outs revealed that one-year experience as NATS trainee has helped them in standing upto the aspirations of the Industry with their practical experience of one year. The mismatch between Institute & Industry, and the skill-gap at the Institutional level has vanished with this training, and now they are confident of gainful employment in the labour market.

7.4(iii) Technology turnaround - Future Developments:

There is huge technology turnaround happening in the industrial sector, and the graduates(of degree and diploma from Engineering Institutes) are left with huge technology gap at the time of graduating from the Institutions. The Institutions/colleges are unable to cope with the same at the academic level, and the skill gap is significantly visible with the outgoing graduates. Thus, the NATS training is providing excellent opportunities to graduates coming from Institutes, by offering exposure of latest technological developments, and direct exposure to emerging work culture. This is further promoting the employment opportunities elsewhere in similar kind of high-tech establishments solely due to prior experience, i.e., one year training under NATS.

This scenario is prevalent in pharmaceutical and manufacturing industries. There is also a suggestion from such industries that the latest courses dealing with applied sciences such as Industrial chemistry/Applied physics etc. should be included in courses of NATS to make it more diverse with industrial developments.

7.4(iv) Problems faced by small & medium establishments:

Few establishments, though covered under NATS, are averse to admit trainees due to their small size to deal with the administrative procedures associated with NATS formalities. There are other reasons such as (i) their business /productivity is changing every year in terms of turnover, orders, overall physical growth, (ii) highly dependent machinery on external environment, (iii) flexible technical manpower, most of them on contract basis, and (iv) uncertainty of business growth in future etc. This phenomenon associated with small & medium establishments is a major hurdles in regular appointment of trainees every year. In addition, the stipend is very poor and the Establishments

cannot supplement the stipend with their own share due to their poor financial structure, and small in size of the company. Establishments in Goa and in backward regions of states are best examples of these problems.

7.4(v) Generic problems faced by Establishments in case of Vocational(School) Trainees:

Few establishments such as diagnostic centres, and others which are directly dealing with customers/clients, and where the placement of NATS trainees is unavoidable, the Establishments are averse to enroll vocational school pass-outs due to (i) poor communication skills/soft skills, (ii) lack of experience in dealing with customers/clients in a professional manner, (iii) lack of confidence and inhibitions associated with the trainees in an entirely strange atmosphere, due to low age, poor parental, and social backgrounds etc.

As such, the Tech(Voc) scheme is straddled with huge problems, and is in a state of decay in most of the states surveyed. Therefore, well-defined strategy at policy level is necessary with the involvement of concerned school departments, and local apprenticeship advisers of DGT. This scheme is more suitable to be handled at the level of district apprenticeship adviser, and to be aligned with ITI – ATS scheme.

7.4(vi) Hidden Cost on account of Training at Establishments**:**

Few establishments expressed that there are hidden/implicit costs associated with NATS training, apart from the enhanced stipend which they are paying to the trainees. Trainees stipend is meager and needs to be supplemented by extra remuneration due to apprehension of attrition while on training, if happens, is a loss to establishments in terms of wastage of physical and financial resources. Therefore, there is a strong plea that the stipend should be at par with minimum wages for highly skilled personnel. They have no obligation to share the burden of their part of stipend, as they are already paying more in few cases. The hidden costs of NATS training in middle & small size establishments is tangible and being felt by the establishments, as their HR dept has to devote considerable amount of resources with the trainees in order to meet the objectives & goals of NATS.

7.4(vii) Opportunity Cost of Training:

In few branches (like Architecture, Software/IT/Comp. Engg etc.), the trainees are averse to join the NATS training, since, they have many avenues in the labour market that offer them jobs with handsome

salaries. Therefore, outgoing graduates from few Institutes are not preferring this NATS as the opportunity costs of training is huge, and they do not want to forgo these opportunities by locking-in for one year with NATS scheme, though the scheme offers excellent skill development opportunities. Other reason, the graduates, diploma holders are preferring for "voluntary unemployment" rather than opting for NATS due to meager stipend offered by NATS. This stipend is acting as a deterrent rather than attracting due to pride of degree/diploma, minimum wages far much higher than stipend, non-guarantee of job after NATS training etc.

7.4(viii) NATS as an integral part in Educational Curriculum:

There were suggestions from both the stakeholders, i.e., establishments, and institutes that the NATS may become an integral part of curriculum by orienting the last two semesters syllabi with the needs of Industry with the collaboration from local industries. There are suggestions that the last semester(six months) course may be aligned with the Industry, and the next six months may be a practical training at the establishment in order to synergize the academic and industrial knowledge.

Especially from the Institutions offering Diploma courses, there is a serious suggestion to make the NATS Training of one-year as an optional training program to avoid the pass-outs splintering into small, tiny, unorganized establishments for want of job. With little efforts and counseling, large pool of diploma holders from Polytechnics especially from Mechanical, Civil Engineering Branches may be fine-tuned with NATS one-year training, and they will be enabled to settle in a decent, gainful employment. Therefore, NATS is a great value addition to diploma graduates.

7..4(ix) Contribution & Suitability of Trainees in the Establishment:

Performance Level of Trainees: Many establishments revealed that NATS trainees are performing better, and are involved in active production processes. Their contribution is significant, and their learning capability is worth praising. They show active interest to learn, and apply their analytical skills to the best of their abilities. Given an opportunity, they are ready to shoulder all the responsibilities, barring few trainees who have skepticism from the beginning due to their personal factors.

Establishments are of the view that, after recognizing the contribution of Trainees for one year, they are ready to absorb, if the vacancy

arises. They are trying their level best to absorb the trainees but due to severe pressure on optimal human resources and maximum productivity, they are unable to retain all the trainees with them. However, the figures show the considerable amount of retainment(i.e., employment within the establishment) that varies from place to place and type of industry.

7.4(x) Preference & Moderation of Trainees in Appointments:

Trainees are able to get employment outside the establishment, after successful completion, due to enormous goodwill of the establishments in the market. This is the case with CPSUs of Chhattisgarh, Goa etc. In case of PSU Establishments, due to policy of equal opportunities to all eligible candidates, there is no preferential treatment to NATS trainees. In few cases of PSUs, the GATE score is treated as a decisive factor for selection. Therefore, the Trainees are of opinion, that the One-year NATS training should be given a weightage in selection process. Even the PSU Establishments are of the opinion that some kind of moderation should be given to successfully passed-outs NATS trainees in their selection process.

Detailed interaction with the Training Officers of CPSUs revealed that, the ex-trainees of NATS, after getting through written test in the normal process of recruitment, are indeed given moderation at the time of interview. There is a gracing for such ex-trainees as they are treated as loyal to the company, after completing NATS training.

7.4(xi) NATS to Focus On Technician and Tech(Voc):

Many establishments are in need of Trainees under diploma category, but couldn't get them due to paucity of such trainees. On cross-checking with Institutes, and diploma graduates on this point it was observed that, due to high intake capacity in engineering colleges, and seat reservation for lateral entry in degree courses, majority of the diploma holders are joining degree courses to increase their academic capability. Earlier, it was very difficult to get into degree program due to limited no. of seats and competition. Nowadays, due to proliferation of Engineering Colleges in private domain and enormous increase in intake capacity, and lateral entry avenues, diploma graduates are not joining NATS at the outset.

On the other hand, Technician(Voc) scheme is very dormant in most of the states except in few pockets. There are many reasons for lackadaisical response to the Technician(Voc) scheme. Some of them are, (i) not attaining minimum 18 years of age, at the time of

graduating from the vocational school, which is in contravention of rules in hazardous establishments, (ii) syllabus not in tune with the changing work & technological environment, (iii) vocational courses & syllabus overlapping with other streams of vocational courses, such as ITI, modular courses in vocational streams, and (iv) availability of skills in the informal, & labour market, which are otherwise faces stiff competition to Tech(V) courses, (v) poor socio-economic background of vocational students, and affects badly their career planning, (vi) policy paralysis at school education level vis-à-vis vocational courses. Other major reason for poor enrollment of voc. School graduates is they want to enroll for higher studies, or enroll in ITI for a more focused vocational training.

Many establishments engaging Tech(Voc) trainees (of 10+2 school) are of the strong opinion that this segment of apprentice scheme may be dropped and BOAT may focus its resources on Graduate and Diploma trainees. Vocational school subjects are introduced during 1980s keeping in view the working environment/skill needs in those times. However, there are drastic changes in the work culture centered around those skills/vocations. These changes have to be addressed at school level by changing the syllabus, pedagogy, hands-on practical training. Unfortunately, no such changes took place at school level so far.

Therefore, the establishments dealing with Tech(Voc) apprentices are strongly of the opinion that this scheme should be disbanded unless structural and generic changes take place. The sampled PSU Units, State govt. departments are of the opinion that the quantum of work which is supposed to be done by this Tech(Voc) trainees is outsourced, and contracted to manpower agencies. Engaging Data-entry operators on contract basis is one of the examples. This Tech(Voc) segment should be merged with District Apprenticeship Program of ITI for all logistic reasons.

7.4(xii) <u>Strengthening of Graduate, Technician categories:</u>

BOAT(SR) can focus its limited resources on Graduate, Technician types to strengthen the NATS. As highlighted in previous section, Tech(Voc) stream is plagued by several problems, and BOAT can recommend to MHRD to align this Tech(Voc) stream with the Craftsmen Training Scheme/ATS of Ministry of Skill Development. This will pave the way for BOATS to focus on core issues of NATS.

Colleges of the view that the intake capacity and seat-matrix of NATS in the Establishments in the vicinity of college should be supplied to the Colleges and outgoing students so that colleges will motivate and

organize the enrollment into NATS. Many colleges are not aware of the seat matrix of NATS in establishments in their jurisdiction.

Colleges have several schemes to promote the outgoing graduates towards employment, like career counseling and guidance, rigorous interaction with industries for campus placements, etc. However, the NATS is not among the top priorities of colleges, as they felt that it is not a job, but a sandwich training to enhance the skills after graduation. Main reason given by Colleges for not promoting the NATS among their students is that it is a temporary training which doesn't guarantee any job after training, and very low stipend. Colleges are gauging their own performance vis-à-vis campus placements, and the median salary for the entire batch of graduates. Therefore, the low stipend has become a deterrent for canvassing of the NATS in College campuses. Therefore, Colleges are of the opinion that a "protected, and minimum salary" matching the status, and competition should be fixed for NATS trainees in order to promote their outgoing graduates towards NATS.

In certain industrial clusters of few states, especially located in backward regions of the state, there is huge demand for certain branches like chemical, mechanical engineering etc. However, BOAT is allocating only few Trainees as per the seat allocation fixed long time ago. The establishments are of the view that the seat allocation may be made flexible, and they may be given freedom to select as many trainees as available without any hindrance.

7.6 Developing Skill Eco-system among Auxiliary Units: Augmenting Intake capacity among the medium-size Establishments.

The contribution of large industries in promoting NATS and employment among the trainees is very much laudable and is a recognized fact. They are absorbing as many trainees as possible. However, they too have many constraints in accommodating large pool of trainees.

While interacting with well-established industries in manufacturing sector, the Establishments revealed that due to their limited resources and capacity, and due to heavy demand for enrollment in their units by the trainees, there should be some innovative ways to increase the intake capacity. One workable-model suggested was creating a pool of Auxiliary Industries centered around the large industry. Many large industries have a pool of more than 100 small & medium auxiliary units within their network. The lead industry can play a role of ombudsman for all its auxiliary units, and distribute trainees to them. Lead Industry can enhance its capacity of intake

and redistribute the trainees among its auxiliary units. This will tremendously increase the demand and intake capacity of main industry, and also promote the entrepreneurship among the trainees towards self-employment.

7.7 Institutes' Perspectives:

Most of the Institutes surveyed were in the domain of private sector. They were largely self-financing Institutions which have entered into fray after liberalization of education sector. Nearly a million graduates & diploma holders entering into labour market, and majority of them are from the Institutes in private domain, and from rural background. It is an established fact that these Institutes are facing structural deficiencies such as (i) inappropriate curriculum, (ii) poor syllabi, (iii) inadequate laboratory infrastructure, (iv) shortage of qualified faculty among others. Graduates coming out of these Institutions are definitely lacking competencies compared to their counterparts from high-rung Institutes, mostly funded by government. NATS is a boon to such graduates to fill the competency gaps, whereby, one-year industrial experience & exposure can give tremendous opportunities to work in a practical environment and fill the competency-gap in order to gain suitable employment opportunities in the labour market.

There are Institutes which are giving impetus to the NATS scheme by encouraging outgoing & final year students of colleges for NATS enrollment. However, there are some Institutes who are focusing on fulltime placements and campus recruitments by large and reputed companies. In case of Polytechnics, the focus of the outgoing students and Institutes is to encourage them & upscale them to enter into graduate program. This is mainly due to large number of engineering colleges in private sector in the vicinity, and easy availability of seats at lateral entry exclusively meant for diploma holders.

In case of vocational schools, the teachers are of the opinion that the syllabus was framed long time back, keeping in view the demand, and labour market dynamics at that point of time. There were drastic changes since then, and now, it is time to revamp the complete syllabus of vocational subjects to make these vocational students stand in the competitive arena at par with other students hailing from ITI/ITC, modular/sandwich courses from private vocational institutes. Teachers of vocational schools are of strong opinion that, at present, in the private domain, there are many courses which are overlapping, competitive, and more comprehensive compared with the vocational subjects at school level. The private vocational institutes are developing their own independent, curriculum-cum-competency oriented syllabi, teaching-learning pedagogy in the vocational streams keeping the market demands and labour market dynamics, and needs of the employers/establishments. Another drawback is, the pass-outs from vocational schools are entering into lateral courses, shifting away from the

vocational streams and jumping into general courses. Therefore, the teachers are of the opinion that, there is a need to rebuild the entire vocational education at school level.

7.8 Graduates Not Opting for NATS:

Field level survey has also captured the signals from the graduates & last-semester/final year students of Institutions (both Degree & Diploma Institutes). Survey team also collected few details from each college, pertaining to those who were not employed, and remained unemployed even after two years of graduation. This two year period is treated to be ample time for settlement in a satisfactory job.

The enquiry was focused on two issues such as (i) why they are not opting for NATS in spite of remaining unemployed, and (ii) whether they did have prior knowledge about the details of NATS, and how it helps in increasing employment avenues & opportunities.

As far as graduates are concerned, it was observed that there is high pride, dignity associated with the graduates, and they are looking down at NATS from the angle of meager stipend. They are comparing it as salary at par with the campus placements of their contemporary graduates/batch mates. Others were found to be opting for voluntary unemployment due to their choice of place, sector, nature of job, amount of salary etc. apart from preparation for GATE/Management Entrance exams.

In case of diploma holders from Polytechnics, the lateral admissions into Degree courses is competing with the NATS, and outgoing students are preferring for lateral entry to Degree courses rather than NATS. Here, again, the stipulated meager amount of stipend is unable to attract the diploma candidates towards NATS, though they are unemployed. Other reason is due to surge in developmental investments in infrastructure, manufacturing etc., there is huge demand for diploma holders in core branches like Civil, Mechanical etc. Initial salary offering is significant in these sectors and graduates are opting for placement rather than NATS. Other reasons such as waiting for a good & permanent job with attractive salary in these booming sectors like Infrastructure, BPO/IT-enabled services in near future, rather than enrolling for NATS, since the opportunity costs of missing the jobs after couple of months of enrollment in NATS is presumed to be high by the control group (i.e., diploma/degree holders who did not opt for NATS).

CHAPTER VIII

SUCCESS STORIES AND CASE STUDIES FROM SOUTHERN REGION

Smt. A. Lakshmi Madhuri.,
CADSYS India Ltd.

This training program helped me how to implement my knowledge practically which i have gained in my B.Tech. Also helps in knowing how the things happen in real working environment, which helped me to build to build my career in GIS Field. After completion of training, I continue to work in this Organization, which boost up my performance and now i am working as team lead in process quality group. I am very thankful for this training program.

Shri .R. Srinivasan.,
BHEL,TRICHY.

Presently, I am undergoing training in Quality Control Department in Boiler Casting Section and working in the Raw Materials Procurement(Fitting Area). The Apprentice training provides me lot of technical inputs on the products that i am dealing with and also give me lot of confidence as a part of training. I also interact with engineers working in that area. The apprentice training will definitely facilitate me to take up assignments in any organizations.

Smt. Hemalatha Bala .,
Mylan Laboratories Ltd.,
Andhrapradesh.

Worked as Apprentice in FDF-Regulatory Affairs, Mylan Laboratories limited from 5th December, 2013 to 18th June, 2014. I appreciate the incredible oppurtunity and for making my time within the company a productive one. BOAT introducing program through which i am able to enter into industry and to build up my career.

भारत सरकार अंतरिक्ष विभाग
विक्रम साराभाई अंतरिक्ष केंद्र
तिरुवनंतपुरम - 695 022
केरल, भारत
फोन: +91 471 2565503/2706030
फैक्स: +91 471 2564016
ई-मेल: p_ratnakararao@vssc.gov.in

Government of India Department of Space
Vikram Sarabhai Space Centre
Thiruvananthapuram - 695 022
Kerala, India
Phone: +91 471 2565503/2706030
Fax: +91 471 2564016
E-mail: p_ratnakararao@vssc.gov.in

BOAT(SR), Chennai-600113
Date: DAK Received on :
Section: Admn Attachment
AP KN KL TN PY
Placement
Accounts
RTI / Court Case
Very Urgent
1071

Ratnakara Rao P
Dy Director, VSSC (MSA)

No. VSSC/MSA/BOAT/14

22 July 2014

Dear Ayyakannu,

Sub: Employer's feedback – Vision document for 12th plan of BOAT

We are highly impressed by the Apprenticeship scheme of Board of Apprenticeship Training (BOAT) and the excellent support provided by BOAT (Southern Region). The scheme has helped VSSC to meet short term manpower requirements. We find that in general the apprentices are of excellent quality and normally undergo learning phase in a short time and thereafter they get actively involved in various tasks as part of the training. Many apprentices including VHSC trainees who have undergone training have successfully obtained jobs in various establishments. Thus they become part of the workforce which plays a vital role for the success of business across the country.

The scheme being regular and continuous, even long term requirements can be met by systematic replacements. This can be utilized by organizations to gain financially as the trainees contribute to work as they learn. In addition, the trainees become potential group of candidates to meet the future workforce of the organization without need of formal training.

I would like to take this opportunity to wholeheartedly wish you success in all your endeavors and looking forward to your continuous support.

Regards,

Yours sincerely,

(P Ratnakara Rao)
पी. रत्नाकर राव/P. Ratnakara Rao
उप निदेशक, एमएसए/वीएसएससी
Dy. Director, MSA/VSSC

To

Shri. A. Ayyakkannu
Director
Board of Apprenticeship Training (SR)

एम. पलनिवेल
महाप्रबंधक(मानवसंसाधन)
மா. பழனிவேல்
பொதுமேலாளர் (மனித வளம்)
M. PALANIVEL
General Manager (HR)

AN ISO 9001 COMPANY

भारतहेवी इलेक्ट्रिकल्सलिमिटेड
तिरूच्चिरापल्ली- 620 014
பாரதமிகுமின் நிறுவனம்
திருச்சிராப்பள்ளி- 620 014
Bharat Heavy Electricals Limited
(A Govt.of India Undertaking)
High Pressure Boiler Plant, Tiruchirappalli 620 014, India
HUMAN RESOURCE MANAGEMENT
FAX : 0431- 2520078 PHONE : 2520052

At the outset, it is heartening to note that Board Of Apprenticeship Training (BOAT) (Southern Region) has come out with a Vision Document for the current 12th Five year Plan with an objective of training 5,00,000 apprentices before end of 31st March 2017 and such an initiative is the first of its kind amongst the Boards under the Ministry of HRD. Further, it is appropriate that the Board of Governors of BOAT (SR) have thought it fit to collect the feedback and seek the support of all its stakeholders - employers, ex-apprentices and current apprentices for inclusion in the document.

I am very pleased to state that BOAT (SR) has been providing the necessary thrust, support and recognition to our organization in the engagement of Graduate, Technician & Vocational apprentices every year. In appreciation our efforts in providing the necessary technical/procedural support, recently our Organization has been bestowed with the Best Employers Award by Board of Governors of BOAT (SR) for deploying more number of apprentices in the year 2013-14. Such encouragement and support as well as looking forward to the views and feedback from all the stakeholders would enable BOAT (SR) to better understand their needs and thereby facilitate in accomplishment of its vision. The Apprenticeship Training program will provide the needed skilled youth to meet the current expanding Indian economy. In this context, I would also request other Organizations that do not have Apprenticeship Training program to come forward to introduce the same in partnership with BOAT (SR).

On behalf of BHEL (Trichy Complex) , best wishes to BOAT (SR) team for their success in accomplishment of the Vision.

Dt:21.07.2014

(M. Palanivel)
M. PALANIVEL
General Manager
(Human Resource)
Bharat Heavy Electricals Limited
Tiruchirapalli - 620 014.

FEEDBACK FROM EX-APPRENTICE

Name : J Blessing Jany Churchil
DOB: 27/07/1988
Qualification: BE (Electrical & Electronics Engineering)
College: Arulmigu Kalasalingam College of Engineering
Pass Out year: 2010
PG: ME (Power Systems)
College: Trichy– Anna University
Apprenticeship period: 2010 – 2011
Dept.: Controls & Instrumentation/Fossil Boilers
Previous Employment: Indian Overseas Bank (December 2011 to January 2012)
Present Employment: Bharat Heavy Electricals Limited (February 2012 to Present)

It gives me immense pleasure to share with you my journey with BHEL. BHEL has been my dream company right from my childhood since I grew up seeing the company grows .Completed my schooling at BHEL Matriculation Higher Secondary School located inside township and pursued my under graduation at Arulmigu Kalasalingam College of Engineering. Passed out in the year 2010 with flying colours, the strong desire to start a career in Public Sector Company made me to apply for apprenticeship training at BHEL Trichy. Joined as Graduate Apprentice in Oct 2010, I was posted to Controls & Instrumentation/Fossil Boilers.

In the department, I had exposure to details regarding general boiler design, general arrangement. I was allowed to prepare engineering documents like load lists, Instrumentation list etc. which gave me a clear view of various instrument, loads present in a boiler. I had exposure to Contract specifications received from customer, listing of deviations. Had a very good guidance from all my department staff who gave me a lot of guidance for clearing competitive exams.

Before completing my training in Oct 2011, I appeared for BHEL's Engineer Trainee exam in September 2011. With lots of efforts and hard work, I have cleared the exam. Before the results were out, I joined Indian overseas bank as Probationary Officer. I was working with IOB for 2 months. Once I got my selection order from my dream company, I joined with BHEL on 20/02/2012.

Though I would relate my hard work to my success, the apprenticeship training which I got in BHEL was very much useful for horning my technical skills required for clearing competitive exams. This one year training was very much useful to me for clearing the interview also.

Presently working with the C&I department in BHEL, I feel that my work content is easier. I thank BHEL for having such a wonderful one year training program which is very much useful for a large scale of people.

The Apprentice training provides me lot of technical inputs on the products that I am dealing with and also gives me lot of confidence as part of training. The Apprentice training was definitely facilitate me to take up assignments in any Organization.

J Blessing Jany Churchil

Sundaram-Clayton Limited

Padi,
Chennai - 600 050. India
Telephone : 044-2625 8212
Fax : 044-26257177

22 JUL 2014

BOAT(SR), Chennai

Date:

Section: Admn

Placement

Accounts

RTI / Court Case

Priority

Very Urgent | Important | Confidential

17.07.2014

To

Shri A.Ayyakkannu

Director

BOAT (SR)

Sub: Feedback on BOAT (SR) Apprenticeship Scheme

Sundaram Clayton Limited, Die Casting Division has always enjoyed an enriching association with BOAT (SR). We have benefitted tremendously by this scheme, wherein we engage apprentices who are first class diploma engineers to support our Operations and quality assurance activities. While apprentices get training on the job, engaging apprentices provides us the following advantages as an employer:

- Committed and dedicated human resource supply with a capability to learn and execute
- Availability of competent talent pool to recruit against regular vacancies in the long run

The benefits from the apprentice scheme has improved year on year, since its inception at SCL and this has a mutual benefit for the organisation as well as the apprentices. This scheme is definitely a boon to the automotive industry and any employer can confidently venture into an association with BOAT (SR) and reap the benefits.

With best wishes,

P.Ramaswamy

Vice President (Personnel)

SUNDARAM - CLAYTON LIMITED CHENNAI 600 050

FEEDBACK FROM EX-APPRENTICES

1. Name of the employee : **Mr. Amanulla S**

2. Name of the organisation in which undergone the Graduate Apprentice Training : **IPA Pvt. Ltd.**

3. Apprenticeship training period : **06-12-1995 to 05-12-1996**

4. Present Position : **Director.**

5. Monthly salary package. : **Rs. 74,588/- + Perks**

6. Brief feed back from the employee :

I had the opportunity to join IPA Pvt. Ltd. as a Graduate Apprentice Trainee in the year 1995-96. Due to the exposure and support of the Management and my hard work and commitment within a period of 15 years I have reached the position of one of the Directors of the company. Graduate Apprenticeship is a very effective step for any fresh Engineer. In IPA, I got exposed to cross functions of a manufacturing unit and I gained confidence to handle any process.

सी-डॉट
C-DOT

FEEDBACK FROM CENTRE FOR DEVELOPMENT OF TELEMATICS (C-DOT), BANGALORE TOWARDS PREPARATION OF VISION DOCUMENT

Feedback from Ex-Apprentices (immediate past 5 years) :

1) Name of the Employee : CHANDRA KUMAR G

2) Organisation in which he/she undergone Apprenticeship Training : C-DOT, BANGALORE

3) Period of Training : ONE YEAR (16-01-2013 TO 15-01-2014)

4) Present Position : TELECOM ENGINEER

5) Monthly / Annual salary package : 1.8 LAKHS / ANNUAL

6) A brief feedback of 4-5 lines on how the Apprenticeship Training helped him / her in enhancing skill competencies & confidence level thus paved way to permanent job :

IT WAS QUITE A HANDSOME EXPERIENCE. IT HAS PROVIDED ME WITH AN OPPORTUNITY TO LEARN FROM EXPERT IN THE FIELD. IT WAS A LEARNING EXPERIENCE. IT PROVIDED ENOUGH KNOWLEDGE IN THE FIELD OF TELECOMMUNICATIONS.

FEEDBACK FROM EX-APPRENTICES

1.	Name of the employee	:	**Mrs. Rekhavathy**
2.	Name of the organisation in which undergone the Graduate Apprentice training	:	**IPA Pvt. Ltd.**
3.	Apprenticeship training period	:	**03-02-1997 to 02-02-1998**
4.	Present Position	:	**Deputy Manager.**
5.	Monthly salary package.	:	**Rs. 42,012/- + Perks**
6.	Brief feed back from the employee	:	

I had an opportunity to get complete exposure for practical training during my Apprentice Training. That has helped me to shape up as a good Engineer. Management has been very supportive. I am working as a HOD Quality Control in IPA at present.

Signature of the employee

Date: 16th July 2014

IPA PRIVATE LIMITED BANGALORE-560 059

सी-डॉट
C-DOT

FEEDBACK FROM CENTRE FOR DEVELOPMENT OF TELEMATICS (C-DOT), BANGALORE TOWARDS PREPARATION OF VISION DOCUMENT

Feedback from Ex-Apprentices (immediate past 5 years) :

1) Name of the Employee : SAKET TIWARI

2) Organisation in which he/she undergone Apprenticeship Training : C-DOT, BANGALORE

3) Period of Training : ONE YEAR (16-01-2013 TO 15-01-2014)

4) Present Position : IT ENGINEER

5) Monthly / Annual salary package : 1.8 LAKHS / ANNUAL

6) A brief feedback of 4-5 lines on how the Apprenticeship Training helped him / her in enhancing skill competencies & confidence level thus paved way to permanent job :

THIS ONE YEAR APPRENTICESPHIP TRAINING WAS GOOD. IN THIS ONE YEAR PERIOD I LEARNT SKILLS RELATED TO NETWORKING, LINUX COMMANDS, FIELD WORK AND HOW TO INTERACT WITH PEOPLE. SO I CAN CONCLUDE THAT THIS APPRENTICESHIP TRAINING WAS VERY USEFUL TO BUILD MY CAREER IN A BETTER WAY.

सी-डॉट
C-DOT

FEEDBACK FROM CENTRE FOR DEVELOPMENT OF TELEMATICS (C-DOT), BANGALORE TOWARDS PREPARATION OF VISION DOCUMENT

Feedback from Current Apprentices :

1) Name of the Apprentice : CHINTA JAYA TEJA

2) Name of the College Studied : BVC ENGINEERING COLLEGE, ANDHRA PRADESH

3) Year of Passing +2 (Voc) / Diploma / Degree in Engineering : B.TECH (ECE), 2013

4) Date of Joining Training : 07-08-2013

5) Monthly stipend paid : RS. 10000/-

6) How the training is useful in enhancing Skill, Competency & Confidence level :
THE TRAINING IN C-DOT GIVEN ME GREAT EXPOSURE TO LINUX BASED REAL-TIME SERVERS WHICH ENABLED ME TO ACQUIRE KNOWLEDGE IN LINUX & DATABASE MANAGEMENT SYSTEMS.

7) Department / Unit / Section undergoing training : INSTALLATION & COMMISSIONING GROUP

8) Technology / Skill competencies acquired : LINUX

केन्द्रीय विद्युत अनुसंधान संस्थान
(भारत सरकार की सोसाइटी, विद्युत मंत्रालय)
प्रो सर सी. वी. रामन रोड़, सदाशिवनगर डाक घर, पो. बा. सं. 8066, बेंगलूर - 560 080
CENTRAL POWER RESEARCH INSTITUTE
(A Govt of India Society under Min. of Power)
Prof. Sir C.V. Raman Road, Sadashivanagar P.O., P.B. No. 8066, Bangalore - 560 080, India
वेबसाइट/website : http://www.cpri.in

Annexure - I

EMPLOYER'S FEED BACK

Central Power Research Institute (CPRI) has been engaging both Graduate and Diploma Apprentice Trainees for more than 3 decades at Bangalore and at its various units . CPRI - Bangalore has presently engaged 66 Apprenticeship Trainees from various disciplines like Electronics, Electrical, Mechanical, Computer Science, Civil , Chemical, etc.,

CPRI is paying the Apprentice Trainees a monthly stipend of Rs. 8000/- for Graduate Apprentice Trainees and Rs. 5000/- for Diploma Apprentice Trainees. It is also providing Trainees with a subsidized lunch and with Coffee/Tea free of cost.

CPRI with its state-of-the art infrastructure and expertise has been imparting a high quality training to the trainees to enable them to enhance their technical skills and increase their job potential after their completion of training.

The Apprenticeship Training Board has helped in engaging the apprentice trainees through the Apprentice Fair conducted by the Board. CPRI has an excellent rapport with the Board of Apprenticeship Training for guiding and supporting us in implementing the scheme effectively.

(N.R.Padmanabha)
Chief Administrative Officer
CENTRAL POWER RESEARCH INSTITUTE
P.B. No. 8066, New B.E.L. Road,
Sadashivnagar. S.P.O.
BANGALORE – 560 080. INDIA.

FEEDBACK FROM EX-APPRENTICES

1.	Name of the employee	:	**Mrs. Rashmi S**
2.	Name of the organisation in which undergone the Graduate Apprentice training	:	**IPA Pvt. Ltd.**
3.	Apprenticeship training period	:	**01-06-1998 to 31-05-1999**
4.	Present Position	:	**Assistant Manager.**
5.	Monthly salary package.	:	**Rs. 31,925/- + Perks**
6.	Brief feed back from the employee	:	

Management has helped a lot to develop the technical competence during the Apprentice Training and I got very good exposure to high end technology during the training. I am at present HOD of Transducer Department where strain gauge based load cell of high precision is manufactured as an import substitute product.

S. Rashmi

Signature of the employee

Date: 16th July 2014

IPA PRIVATE LIMITED * BANGALORE-560 058 *

FEEDBACK FROM EX-APPRENTICE

Name : James Melvin P
Name of College: Saranathan College of Engg., Trichy
Year of Passing: 2010
Date of Joining: 31/11/2010
Monthly Stipend: Rs.6000/-
Dept.: Information Technology Solutions & Services

I was posted in Information Technology Solutions & Services Dept. and working in PDMS (Plant Design Management System) Section .This is my first industrial working experience after my graduation. We used to model BHEL Utility Boilers in PDMS in the following three natures:

- As built modelling ; - Concurrent modelling & - Design from 3D

During the training period I learnt the PDMS modelling software on the job which is a very efficient tool for plant modelling and along with it I gained knowledge about the construction of BHEL Power Plants and the components. Having to model the entire Boiler in PDMS, I understood the various systems and their interlinking. That includes Boiler Layouts, Pressure Parts components & routing, Fuel Piping, Instrumentation Tapings, and Duct routing & supporting civil structures. The 3D platform was more advantageous in understanding the complicated routings in various areas of Boiler & also helped in identifying possible clashes between various boiler components.

The training I got during Graduate Apprentice training up to 7th February, 2011 was really a good experience and the knowledge I gained helped me in my job interview for BHEL 'Engineer Trainee' selection in February, 2011 with a Pay Scale of Rs.20600 – 46500.

I am really thankful to Bharat Heavy Electricals Limited, Trichy & Board of Apprenticeship Training for the opportunity.

James Melvin P

सी-डॉट
C-DOT

FEEDBACK FROM CENTRE FOR DEVELOPMENT OF TELEMATICS (C-DOT), BANGALORE TOWARDS PREPARATION OF VISION DOCUMENT

Feedback from Current Apprentices :

1) Name of the Apprentice : JUDE AUGUSTINE JOB

2) Name of the College Studied : HKBK COLLEGE OF EINGEERING BANGALORE

3) Year of Passing +2 (Voc) / Diploma / Degree in Engineering : BE (ECE), 2012

4) Date of Joining Training : AUGUST 2013

5) Monthly stipend paid : RS. 10000/-

6) How the training is useful in enhancing Skill, Competency & Confidence level :
IN C-DOT I HAD AN OPPORTUNITY TO VISIT THE PROJECT SITES & LEARNT ABOUT TESTING, NETWORK CONFIGURATION, & SOFTWARE UPDATION. I LEARNT TO OPERATE ON CISCO ROUTERS, RED HAT 5.5.

7) Department / Unit / Section undergoing training : INSTALLATION & COMMISSIONING GROUP

8) Technology / Skill competencies acquired : LINUX

FEEDBACK FROM TECHNICIAN (VOCATIONAL) APPRENTICE

Name of Apprentice: P.Lavanya

Name of School :Boiler Plant Girls Hr. Sec School, Trichy-14

Year of Pass: Mar 2014

Date Of Joining: 01/07/2014

Monthly Stipend paid : Rs3,000/-

Department: H.R.D.C

நான் பாரத மிகு மின் நிறுவனம், திருச்சியில் 01/07/2014 அன்று வொகேஷ்னல்அப்ரெண்டிசாக சேர்ந்தேன். நான் +2voc (office Secretaryship) பயின்றுள்ளேன்.

பெல் நிறுவனம் மின் உற்பத்தி செய்வதற்கான இயந்திரங்களை தயார் செய்து நிறுவி வருகிறது. நாட்டின் மின் தேவை 70% பெல் நிறுவனத்தால் தாயரித்த இயந்திரங்களின் மூலம் உற்பத்தி செய்யப்படுகிறது.

இப்பயிற்சியின் போது அலுவலக நடவடிக்கைகள், கோப்புகள் பராமரித்தல் மற்றும் கணினி பயிற்சியும் அளிக்கப்படுகிறது. இப்பயிற்சி என்னுடைய எதிர்காலத்திற்கு தேவையான experience பெறுவதற்கு உறுதுணையாக இருக்கும்.

இத்துடன் நான் இந்நிறுவன நூலகத்தில் Library Management Systemமிலும்பயிற்சி எடுக்கின்றேன். பயிற்சி முடியும் தருவாயில் ஒரு நூலகத்தை தனியாக நிர்வகிப்பதற்கான திறமையை பெற்றிருப்பேன். மேலும் Data Entry Work லும் பயிற்சிஎடுத்துக்கொண்டிருக்கிறேன்.

ஒரு மகாரத்னா அந்தஸ்து பெற்ற ஒரு பெரிய பொதுத்துறைநிறுவனத்தில் பயிற்சி எடுப்பது எனக்கு பெருமையாக இருக்கிறது.

இந்த பயிற்சி எதிர்காலத்தில் எனக்கு பெரிய உத்வேகம் மற்றும் வேலை வாய்ப்பு பெறுவதற்கான ஒரு சந்தர்ப்பத்தை ஏற்படுத்தி கொடுக்கும் என்பதில் ஐயமில்லை.

இப்பயிற்சிக்கு வாய்ப்பளித்த பெல் நிறுவனத்துக்கு நன்றி கூறிக்கொள்கிறேன்.

P. Lavanya

(P.Lavanya)

सी-डॉट
C-DOT

FEEDBACK FROM CENTRE FOR DEVELOPMENT OF TELEMATICS (C-DOT), BANGALORE TOWARDS PREPARATION OF VISION DOCUMENT

Feedback from Current Apprentices :

1) Name of the Apprentice : PRAJIL KUMAR T V

2) Name of the College Studied : DR PAUL'S ENGG COLLEGE, CHENNAI

3) Year of Passing +2 (Voc) / Diploma / Degree in Engineering : BE (ECE), 2011

4) Date of Joining Training : 07-08-2013

5) Monthly stipend paid : RS. 10000/-

6) How the training is useful in enhancing Skill, Competency & Confidence level :
IN C-DOT I HAD AN OPPORTUNITY TO VISIT THE PROJECT SITES & LEARNT ABOUT TESTING, NETWORK CONFIGURATION, & SOFTWARE UPDATION. I LEARNT TO OPERATE ON CISCO ROUTERS, RED HAT 5.5.

7) Department / Unit / Section undergoing training : INSTALLATION & COMMISSIONING GROUP

8) Technology / Skill competencies acquired : LINUX

CADSYS (INDIA) LIMITED

Feedback from Ex-Apprentices

Name of the Employee : Satya Sagar Gatti

Period of Apprenticeship Training : 01-11-2012 to 31-10-2013

Present Position : Sr. Production Executive

Salary Package : Rs.9280/- PM

Feedback about Apprentice Training :

I have completed my graduation in the stream of Information Technology.

I joined in this organization in Nov-2012 as an apprentice trainee through apprenticeship training program. I have gone through 1 year training program on different GIS projects. Presently am working as a sr. Production executive. This training helped me to improve my confidence level and to build up my career in GIS stream.

G. S. Sagar

14-July-2014

To,

The Board of Apprenticeship Training.

I Mr. B.Vijay Kumar, worked as an apprentice in Mylan Laboratories Ltd. Bollaram, Hyderabad from 2-May-2013 to 5-May-2014, during my 1 year training period Mylan trained me on different instruments and I got wonderful experience ,which helped me in building the professional carrier.

After completing the training period, Mylan gave an opportunity for attending an interview through my experience as an apprentice, I got selected and joined as an employee with designation as officer with an annual income of 3.1Lakhs.

I am very much thankful to Mylan and Board of Apprenticeship Training for introducing Apprenticeship Training programme through which I could able to enter into the industry ,where I could grow Professionally and personally.

Thanking you,

Yours Sincerely,

B. Vijay Kumar

B.Vijay Kumar 14-07-2014

CADSYS (INDIA) LIMITED

Feedback from Current Apprentices

Name of the Apprentices	: CH. Prakeerthi
Name of the College Studied	: Avanthi Institute of Technology and Science
Year of Passing +2 (Voc) / Diploma/ Degree in Engineering	: 2012
Date of Joining of Training	: 01-11-2013
Monthly Stipend Paid	: Rs.6500/- PM
Department/Unit/Section Undergoing training	: Comcast (Migration)
Technology/Skill Competencies acquired	: Auto CAD, Spatial Net
Feedback on Apprenticeship Training	:

I completed my graduation in 2012 in Information Technology Stream. After completion of my graduation I joined in this company in November 2013 as Apprentice Trainee through Board of Apprenticeship training.

Now I am undergoing training in the areas of AutoCAD & Data Conflation services which is useful to me. In my B.Tech i have learned only theatrical concepts. But during the training period i have gained practical knowledge, which helped me a lot. Now i am confident that i can build my career in this field and I would like to continue in this company. I am thankful to The Board of Apprenticeship Program

FEEDBACK FROM CURRENT APPRENTICES

1.	Name of the Apprentice	:	**Mr. Nidhin George Mathew**
2.	Name of the College studied	:	**Maharaja Prithvi Engineering College.**
3.	Year of passing Degree in Engineering	:	**2013**
4.	Date o Joining of Training	:	**02-09-2013**
5.	Monthly stipend paid	:	**Rs. 6000/-**
6.	How the training is useful in enhancing Skill, Copetency & Confidence level	:	After my Engineering degree the practical on-the-job training as an Apprentice Trainee in IPA Pvt. Ltd. with is guidance of Sr. Executives helping me a lot to enhance my Skill, Competency and Confidence level.
7.	Department/Unit/Section undergoing Training.	:	**Mechanical Design and Quality Control**
8.	Technology/Skill competencies acquired	:	Fabrication, Design, Strength of Material Calculation etc.

NGeorge

Signature of the Apprentice

Date: 16th July 2014

IPA PRIVATE LIMITED BANGALORE-560 058

FEEDBACK FROM GRADUATE APPRENTICE

Name: **SATHIYA SEELAN V**
Graduate Apprentice
Name of College Studied: AVC College of Engineering, Mannampandal
Year of Passing Degree: 2013
Date of Joining: 27/12/2013
Monthly Stipend Paid: Rs. 6000/ -
Dept.: Boiler Production/Tubular Products

I was informed that BOAT is planning to recruit 5,00,000 apprentices before 31st March 2017. I wish BOAT all success in their endeavor.

I wish to state that I am very proud of undergoing Apprenticeship training in BHEL, TRICHY.

World famous BHEL is a giant organization in India; BHEL is one of the pioneer in manufacturing of power generating components. BHEL have 17 manufacturing units in all around India. BHEL is stand behind the brightness.

"Ensure Boiler in Time , Assure Power on Time"

My area of training in Boiler Production/TP department. (50 building) is heart of the BHEL. We fabricate/ manufacturing water walls panels, steam cooled super heater panels, super heater coils, re-heater coils, economizer coils, and loose tubes. Three main processes involved for fabrication is edge preparation, bending and welding. In our shop consist of 11bays and Machine centres, 4 furnaces etc..,
During my training period, collected information about 52 machine centers, welding processes, heat treatment, quality, Non-Destructive Examinations. Various type of welding process is used in 50 building, Like Gas Metal Arc Welding, Shielded Metal Arc Welding. Submerged Arc Welding, Induction Pressure Welding, Flash Butt Welding, Resistance Welding, TIG Welding Processes.
In my department, all weldments is subjected to Non – destructive examination. Standard quality plan is followed for quality sequences. Non – destructive test is used in our shop namely Liquid Penetrating Test (LPI), Ultrasonic Test, Radiography Test, Real Time Radiography Tests.. So various NDT test are used in panel and coil manufacturing operations.

It is widely believed that high quality products leads to longer service. We have worked together for timely delivery of finished products. Customer satisfaction is our main motto.

The Apprentice training provides me lot of technical inputs on the products that I am dealing with and also gives me lot of confidence as part of training. I also interact with the Engineers working in that area. The Apprentice training will definitely facilitate me to take up assignments in any Organization.

V. Sathiya

SATHIYA SEELAN V

FEEDBACK FROM CURRENT APPRENTICES

1.	Name of the Apprentice	:	**Mr. Praveen Pavithran**
2.	Name of the College studied	:	**Vel Tech Engineering College, Chennai**
3.	Year of passing Degree in Engineering	:	**2011**
4.	Date o Joining of Training	:	**07-08-2013**
5.	Monthly stipend paid	:	**Rs. 6000/-**
6.	How the training is useful in enhancing Skill, Copetency & Confidence level	:	By learning various jobs under instructions and guidance of experienced staff and the feedback given by Management is helping me to understand the fundamentals.
7.	Department/Unit/Section undergoing Training.	:	Quality Control
8.	Technology/Skill competencies acquired	:	Basic in Electronic weighing and process control Instrumentation.

Praveen

Signature of the Apprentice.

Date: 16th July 2014

IPA PRIVATE LIMITED * BANGALORE-560 058 *

FEEDBACK FROM CURRENT APPRENTICES

1.	Name of the Apprentice	:	**Miss. Vasudha K**
2.	Name of the College studied	:	**SDM Institute of Technology, Ujire.**
3.	Year of passing Degree in Engineering	:	**2013**
4.	Date o Joining of Training	:	**19-08-2013**
5.	Monthly stipend paid	:	**Rs. 6000/-**
6.	How the training is useful in enhancing Skill, Competency & Confidence level	:	By getting practical knowledge through industrial exposure I could improve the basic knowledge and skill in my trade. Now I understand the cross functions of the manufacturing process in detail.
7.	Department/Unit/Section undergoing Training.	:	**Production**
8.	Technology/Skill competencies acquired	:	Basic in Electronic weighing and process control Instrumentation.

Signature of the Apprentice

Date: 16th July 2014

IPA PRIVATE LIMITED BANGALORE-560058

among its other subsidiary units/auxiliary units, and conducting recruitment drive for NATS trainees.