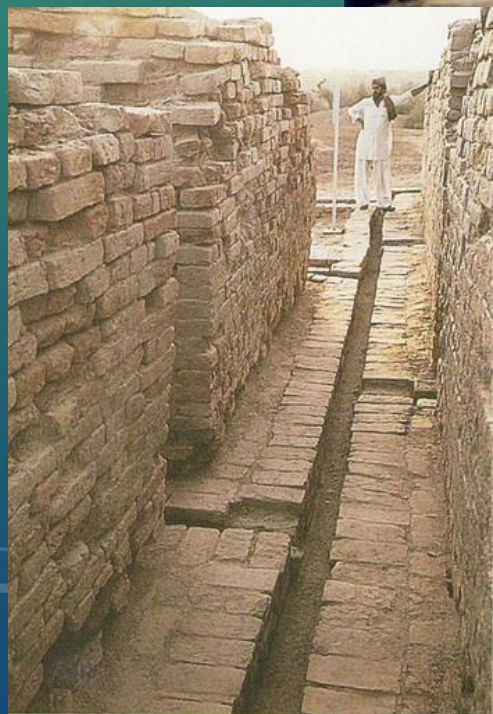
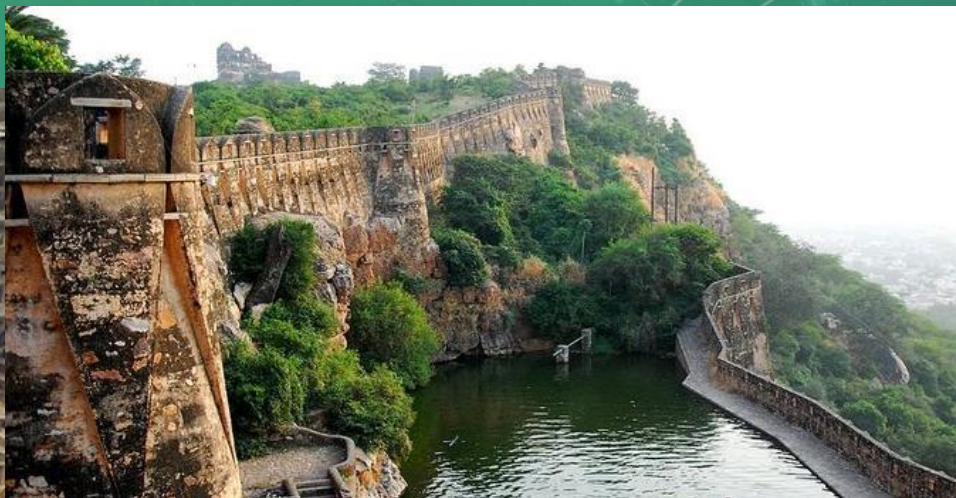




# **PLUMBING** **TRAINING** **IN INDIA**





**A NATION WITH OVER  
YEARS OF PLUMBING**



## Report says that 66% plumbers are unskilled. Can on-demand home services startups change the trend?

YS PRESS TRUST OF INDIA 10 SEPTEMBER 2015 3 shares f t in

Pointing to a yawning gap between skills training and the final output in the plumbing industry, a report said that up to 66 per cent of plumbers are not fit enough to handle real world challenges. A total of 55-66 per cent are unable to handle real world plumbing situations where they need to observe, identify and solve a problem by application of plumbing knowledge combined with analytical reasoning, according to the Skills Plumbers 2015 report by assessment firm Aspiring Minds.



# TODAY

## India requires 12 lakh plumbers by 2020

APRIL 05, 2014 00:00 IST  
UPDATED: MAY 21, 2016 08:41 IST

SHARE ARTICLE f 5 t e m PRINT A | A | A

- |                               |                              |
|-------------------------------|------------------------------|
| 1. Hybrid Cloud Storage >     | 3. Car Insurance Estimates > |
| 2. Car Insurance Calculator > | 4. Best Health Insurances >  |



The Plumbing Industry faces the mammoth challenge of huge gap between the supply of skilled labour and the demand of skilled labour.

A very small percentage of the plumbing workforce is actually skilled in India. And it becomes our duty as plumbing professionals, members of the plumbing industry and other various plumbing related organizations and associations to ensure that skilled and certified manpower in adequate numbers is provided across industries using plumbing skills to raise plumbing standards in India to global levels.



# FACT



THE TIMES OF INDIA  
CITY

Qsee  
Life in Focus

SMART SECURITY SYSTEM  
MADE FOR YOU

City ▾ Madurai Crime Civic Issues Politics Schools & Colleges Events

News Home » City » Madurai

## 'By 2020, India will have the largest young workforce'

TMH Mar 12, 2016, 10:03 AM IST

THE HINDU

JUST IN

02mins Dera violence: Haryana Police releases

022mins Five killed near Faridabad over election-

053mins On third night, St. Louis protest against police

054mins Infosys Senior VP Sanjay Rajagopalan quits

MENU

HOME

NEWS

OPINION

BUSINESS

SPORT

ENTERTAINMENT

LIFE & STYLE

SOCIETY

THE HINDU EXPLAINS

THREAD

NEWS

NATIONAL

INTERNATIONAL

STATES

CITIES

NEWS > NATIONAL

NATIONAL

### India is set to become the youngest country by 2020



Girija Shivakumar

NEW DELHI, APRIL 17, 2013 02:58 IST  
UPDATED: APRIL 17, 2013 19:07 IST

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Madurai: India will have the largest young workforce by 2020, one of the youngest in the world. The population of Indians in 2020 will be 1.2 billion, compared with 1 billion in 2011. Dr Harsh Kumar Bhanwala, Chairman of National Bank for Agriculture and Rural Development (NABARD), Dr Harsh Kumar Bhanwala.

India is experiencing a youth bulge. Nearly two-thirds of Indians are under 35; half are under 25. By 2020, India will be the youngest country in the world, with a median age of 29 years, compared with a median age of 37 years in China at that point. India's large youth population, often called a "demographic dividend," could potentially make India the biggest consumer market and the biggest labor force in the world.



# THE CHALLENGES

## AGE, TABOO, EXPERTISE







TRAINING TO SAVE LIVES

~~FREE~~



TRAINING TO SAVE LIVES

? ! ?



TRAINING TO SAVE LIVES

~~COSTLY~~



# THE CHALLENGES LACK OF GLOBAL SKILL



**The PLUMBER protects the  
HEALTH of the NATION**





# THE CHALLENGES LANGUAGE DIVERSITY

2 Official  
23 Recognized  
37 Local Languages  
Hundreds of Variations



India now claims to be the world's second-largest English-speaking country. The most reliable estimate is around 10% of its population or **125 million people**, second only to the US and expected to quadruple in the next decade. Nov 27, 2012



English or Hinglish - which will India choose? - BBC News  
[www.bbc.com/news/magazine-20500312](http://www.bbc.com/news/magazine-20500312)





# THE CHALLENGES

## TRADE REGULATION



सत्यमेव जयते

Ministry of Urban Development  
Government of India

The MoUD via Central Public Health & Environmental Engineering Organization directs over 3255 Urban Local Bodies as Municipal Corporation and Municipalities.





# THE CHALLENGES

## TRADE REGULATION



सत्यमेव जयते

Ministry of Urban Development  
Government of India

The Municipal Corporations and Municipalities in turn have their own set of rules, regulations and bye-laws derived from CPHEEO Manuals in case of Plumbing, Water Supply, Sanitation and Sewage Disposal.





# THE CHALLENGES NON-STD STANDARDS

Local Bye-Laws take precedence over National Codes. Since the National Codes are not mandated by the Central Regulating Authority they are just considered “Guidelines.”

A sincere lack of uniformity in Standards is very evident.





# THE CHALLENGES LICENSING PLUMBERS

Few Municipal Corporations of Cities like Delhi, Mumbai, Thane, Nasik, Pune, Bengaluru, Shimla, etc. issue a Plumbing License. This does not mean all Urban Local Bodies Comply.

Though the parameters and eligibility for the individual applying for a plumbing license vary, they are no where near the global licensing system. The words “Apprentice”, “Journeyman” or “Master” are conspicuously missed.

For example, the city of Mumbai issues a Plumbing License to any Diploma or Degree Holder in Civil, Mechanical and Electrical Engineering, Diploma Architect or even a Diploma in Construction Technology.

**The applicants do not have to appear for any test, practical or even prove any experience in the field of Plumbing.**





# THE INITIATIVES

## CODES & CONTENT





# THE INITIATIVES TRAINING INSTITUTES



## 1950: Craftsman Training Scheme

A few years after India gained its independence in 1947, the **Craftsman Training Scheme (CTS)** was introduced by the government of India in 1950 to ensure a steady flow of skill workers in different trades for the domestic Industries, to raise quantitatively and qualitatively the industrial production by systematic training, to reduce unemployment among the educated youth by providing them employable training, to cultivate and nurture a technical and industrial attitude in the minds of younger generation. The scheme, most important in the field of vocational training, has been shaping craftsmen to meet the existing as well as future manpower need, through the vast network of ITIs' the day-to-day administration of ITIs' under the craftsman Training Scheme was transferred to State Governments with effect from the year 1956.

Thus forming Industrial Training Institutes (ITIs) throughout the country under the umbrella of “Directorate of Vocational Education & Training”

Under the CTS, two sub-categories exist for plumbing works:

- a. Engineering courses of 6 months.
  - i. Sanitary hardware fitter.
  - ii. Building maintenance.
- b. Engineering course of 1-year duration to be an ITI-certified Plumber.



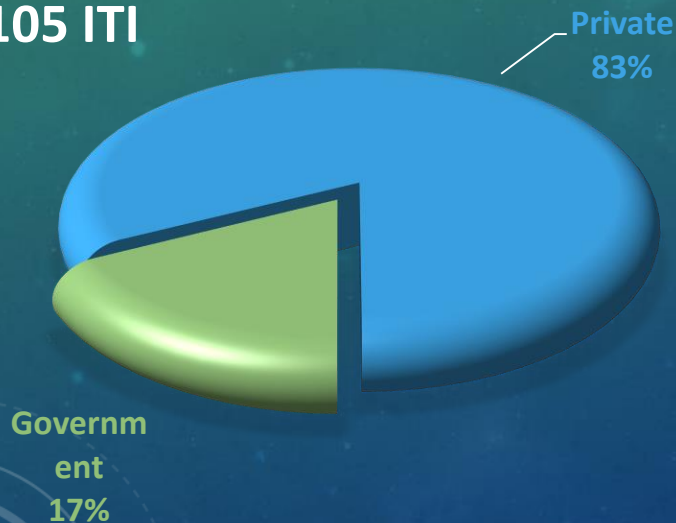


# THE INITIATIVES

## APPRENTICESHIP



13105 ITI



### 1961: Apprenticeship Training Scheme

Acute shortage of manpower in the skilled categories is felt in many Industries in India. With this objective, the Apprentices Act 1961 was enacted in the Parliament in 1961. The Act came into force from 1st March 1962 and is applicable to the whole of India.

Under the Act, it is a statutory obligation on Employers in the specified industries to engage apprentices as per ratio prescribed in the designated trades.

In this case, a certain amount of stipend stipulated by the government is paid by the employer to the apprentice.

For a plumber, this programme lasts for a duration of 3 years.

The efficiency of this program or its effects have not been felt in the Plumbing Industry per se.

As such, there are 13,105 ITIs present in the country. Of Which 17.5% (2293) are government run and the remaining 82.5% (10812) are privately run. Only 264 offer Plumbing Courses.



# THE INITIATIVES

## APPRENTICESHIP



The Apprentices Act has been amended from Dec 22, 2014.

The Government Cabinet meeting on Jul 05, 2016 approved "National Apprenticeship Promotion Scheme"





# THE INITIATIVES

## APPRENTICESHIP

2016 - 2017

• 500,000

2017-2018

• 1 Million

2018-2019

• 1.5 Million

2019-2020

• 2 Million

### Major Thrust:

- Incentivizing Employers.
- Supporting Basic Training.
- Integration with other Skill Development Programs.
- Better Communication & Outreach Strategy.

### Four Routes For Apprenticeship:

1. ITI Passouts.
2. Dual-Learning mode from ITIs.
3. Trainees from PMKVY.
4. Fresh Apprentices without formal Training.

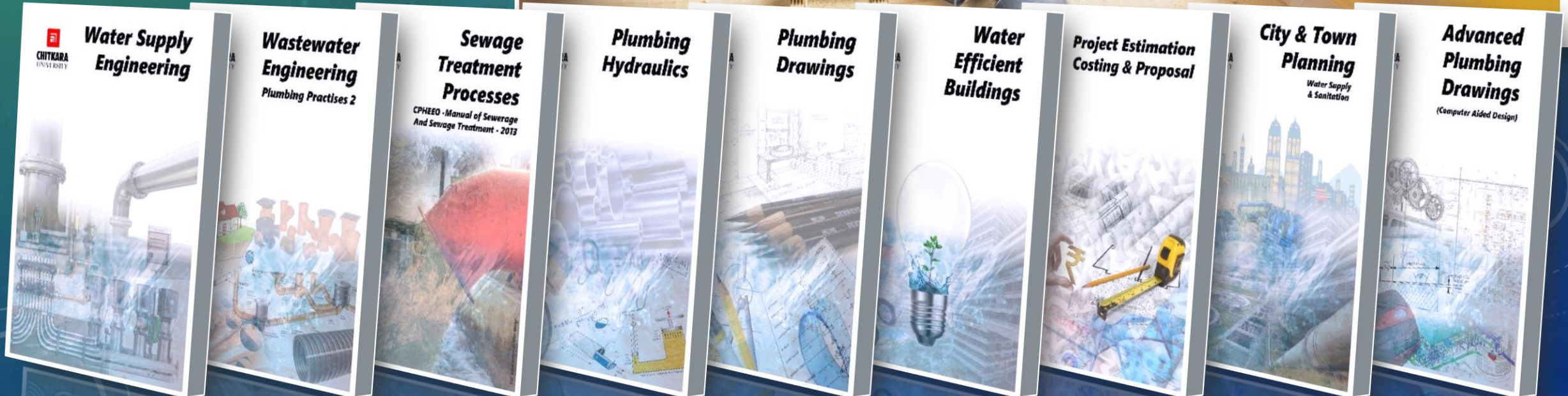


# THE INITIATIVES UNIVERSITY PROGRAMS

## 3-Year Diploma in Civil Engineering with specialization in Plumbing



**FLUID FLOW OF A  
FANTABULOUS CAREER**





# THE INITIATIVES

## SKILL DEVELOPMENT



सत्यमेव जयते

Ministry of  
**Skill Development  
And Entrepreneurship**



**Skill India**

कौशल भारत - कुशल भारत

**PMKVY**

प्रधानमंत्री कौशल विकास योजना



**IPSC**



**N.S.D.C.**

National  
**Skill Development  
Corporation**



# Indian Plumbing Skills Council

*Developing Excellence in Plumbing Skills*

**Indian Plumbing Skills Council (IPSC)** is the apex Sector Skill Council for the Indian Plumbing Industry, Operating under the aegis of National Skills Development Corporation (NSDC), an initiative of the Government of India (Ministry of Skill Development and Entrepreneurship-MSDE) to transform India as a hub for skilled manpower as envisioned by our Prime Minister Shri Narendra Modi.

**IPSC's work** Includes :

- Tracking of the Labour Market Skill Gap (LMIS)
- Framing National Occupational Standards (NOS)
- Facilitating the Development of Quality Theoretical and Practical Training Content
- Ensuring Availability of Trained Faculty (Training of Trainers initiatives)
- Building Accreditation and Certification Mechanism
- Encouraging Capacity Building (Private Sector Participation)





# Creating a Formal & Robust Eco System for Skill Development in Plumbing

## Training Facilities

- Training Partners / Centres
- Centres of Excellence
- Iconic Plumbing Centres
- Pradhan Mantri Kaushal Kendra (PMKK)

## Resources & Standards

- Framing National Occupational Standards (NOS)
- Creating Industry aligned Job Roles
- Developing Curriculum, Content, Handbooks
- Training of Trainers (ToT)

## Quality Assurance Framework

- Accreditation Guidelines
- Affiliation Protocols
- Assessment Methodologies
- Training of Assessors (ToA)
- Certification Mechanisms

## Capacity Building

- Private Sector Participation
- International Collaborations
- Central & State Skills Ministry Schemes
- Demand Aggregation & Placement Linkages

# Our Certification

Every Candidate Certified by IPSC is provided a Certificate with the **Government of India Emblem.**

Aligned to NSQF (National Skill Qualification Framework)

Linked to UID / Aadhar Card

QR Coded

 **PMKVY**  
प्रधानमंत्री कौशल विकास योजना

  
सत्यमेव जयते  
GOVERNMENT OF INDIA  
MINISTRY OF SKILL DEVELOPMENT  
& ENTREPRENEURSHIP

 N.S.D.C.  
National Skill Development Corporation  
Transforming the skill landscape  
www.nsdcindia.org

## Certificate

This is to certify that

Mr. Raju Singh S/O Dharm Singh (AadhaarNo - \_\_\_\_\_ )  
has successfully cleared the assessment for the role of  
Plumber General (QP No. - PSC/Q 0103)  
conforming to National Skill Qualifications Framework Level-3

Date of Issuance 02-07-2016

System Identification Number  
252588803428894688

Issued by.....

Institution Name.....

Signature.....

 IPSC



(253)89070467020920000023694  
www.nsdcindia.org/pbsecure

Dr. Rajendra K Somany  
Chairman  
Indian Plumbing Skills Council





# 25 Qualification Packs / Job Roles

## Contractors

1. Plumber (General) Helper
2. Plumber (General) Assistant
3. Plumber (General)
4. Plumber (Maintenance & Servicing)
5. Plumber (Operations)
6. Plumber (Maintenance & Servicing) Assistant
7. Plumber (Pipeline)
8. Plumber (Fitter)
9. Plumber (Welder)
10. Plumber (Welder) Assistant
11. Plumbing Mason
12. Plumbing Foreman
13. Plumbing Supervisor
14. Plumbing Site Engineer
15. Plumber (Pumps & E/M Mechanic)

## Consultants

1. Public Health Systems Design Engineer
2. Wastewater Systems Design Engineer
3. Fire Protection Systems Design Engineer
4. Groundwater Engineer
5. Plumbing Draftsman
6. Bathroom & Kitchen Designer
7. Municipal Water and Sewage Assessor

## Manufacturers

1. Plumbing Products Sales Officer
2. Plumbing Products Sales Assistant
3. Plumber (After Sales Service)

### *Constitution of Qualification Packs*

- *Technical NOS: Job role related*
- *Generic NOS: Soft Skills, Teamwork Coordination, Health & Safety*

➤ **National Occupational Standards (NOS)** : Specify the standard of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently.

- Each NOS defines one **key function in a Job Role**
- Each NOS is a **Benchmark of Good Practices**
- Each NOS describes **Performance Criterion (PC), Knowledge (K) and Skills (S)**

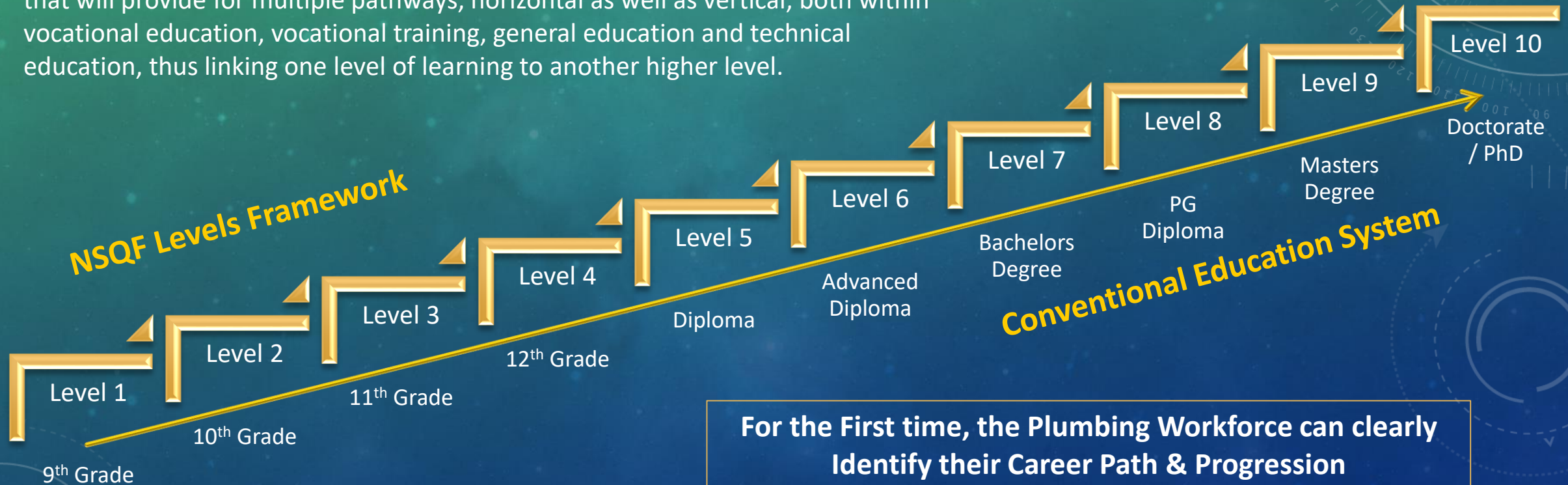




# Career Progression for Candidates

National Skills Qualification Framework (NSQF) organises qualifications according to a series of levels of knowledge, skills and aptitude. These levels are defined in terms of learning outcomes which the learner must possess regardless of whether they were acquired through formal, non-formal or informal learning.

NSQF is a nationally integrated education and competency based skill framework that will provide for multiple pathways, horizontal as well as vertical, both within vocational education, vocational training, general education and technical education, thus linking one level of learning to another higher level.



This will enable a person to acquire desired competency levels, transit to the job market and, at an opportune time, return for acquiring additional skills to further upgrade their competencies

# National Occupational Standards & Qualification Packs

*Development & National Endorsement of the National Occupational Standards & Qualification Packs*



Project Governance

Scoping the Industry

Draft QP / NOS

National Endorsement

*NOS / QPs are Dynamic and Revised Every 3 Years*



# Different Kinds of Trainings

## Short Term Trainings for Youth

Short term training for 576 Hours for General Plumber L3

Classroom & Practical Training (30:70 Ratio)

80 Hours of Practical Training is On-the-Job Training

## Recognition of Prior Learning (RPL)

IPSC launched Recognition of Prior Learning Programme (RPL) named UTTHAN in 2014.

This concept was adopted by IPSC long before it was made mandatory as a Skill Development Model by NSDC and Ministry.

## B Voc. Programs

Designed as per UGC (University Grants Commission) Guidelines

Based on Credit System

Multiple Exit Options → Year 1: Diploma → Year 2: Advanced Diploma → Year 3: Bachelor Degree

## Integrated School Programs

To curb the increased drop out rate from schools

Integrating Vocational Training in school system

NSQF L1 Plumbing Helper (Class 9)

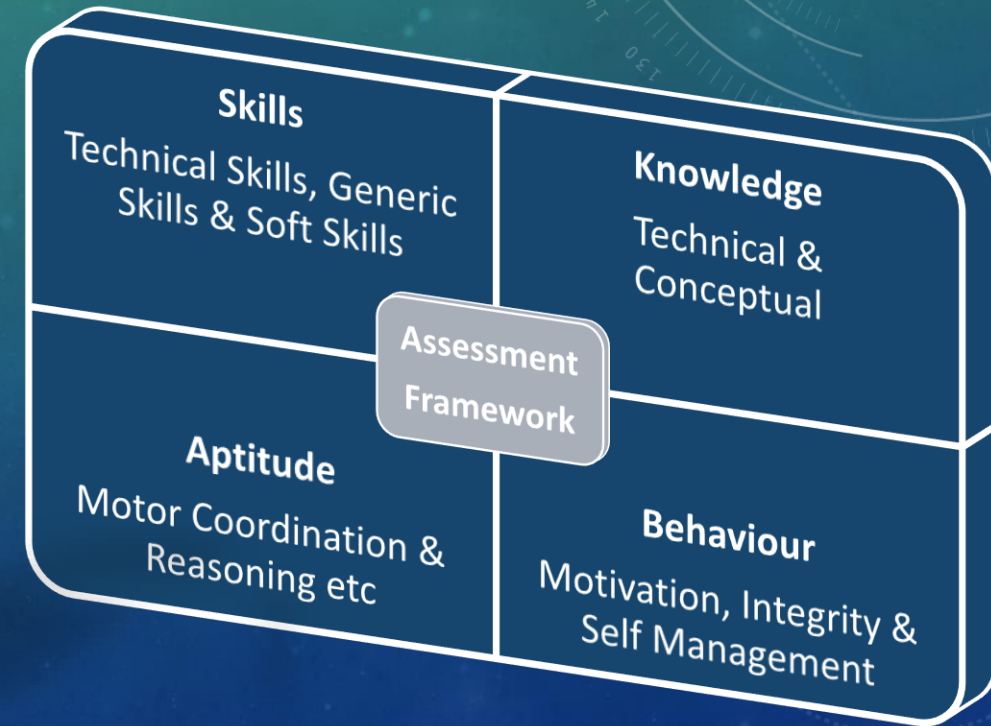
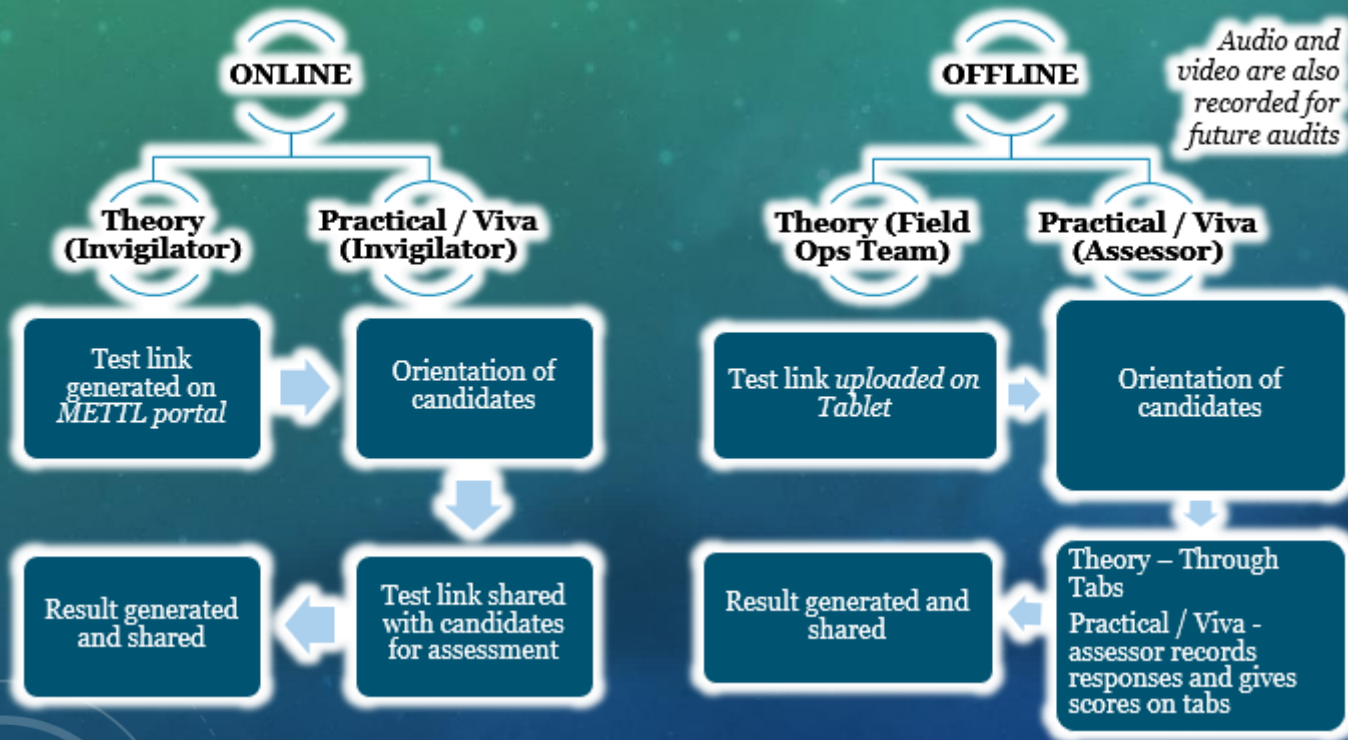
NSQF L2 Plumber Assistant (Class 10)

NSQF L3 Plumber General (Class 11 & 12)

# Assessments

## Leveraging Technology for Conducting Assessments

### Assessment Process





# Developing Pool of Trainers

Job Role	Minimum Educational Qualification	Minimum Experience (In Yrs.)
Plumber General Level 3	12th Pass	4
	ITI (Plumbing)	4
	Diploma (Plumbing/Civil)	3

## Training of Trainers Program:

- 10 Days
- Domain Training (QP Related Domain Skills)
- Platform Training (Teaching Pedagogy)





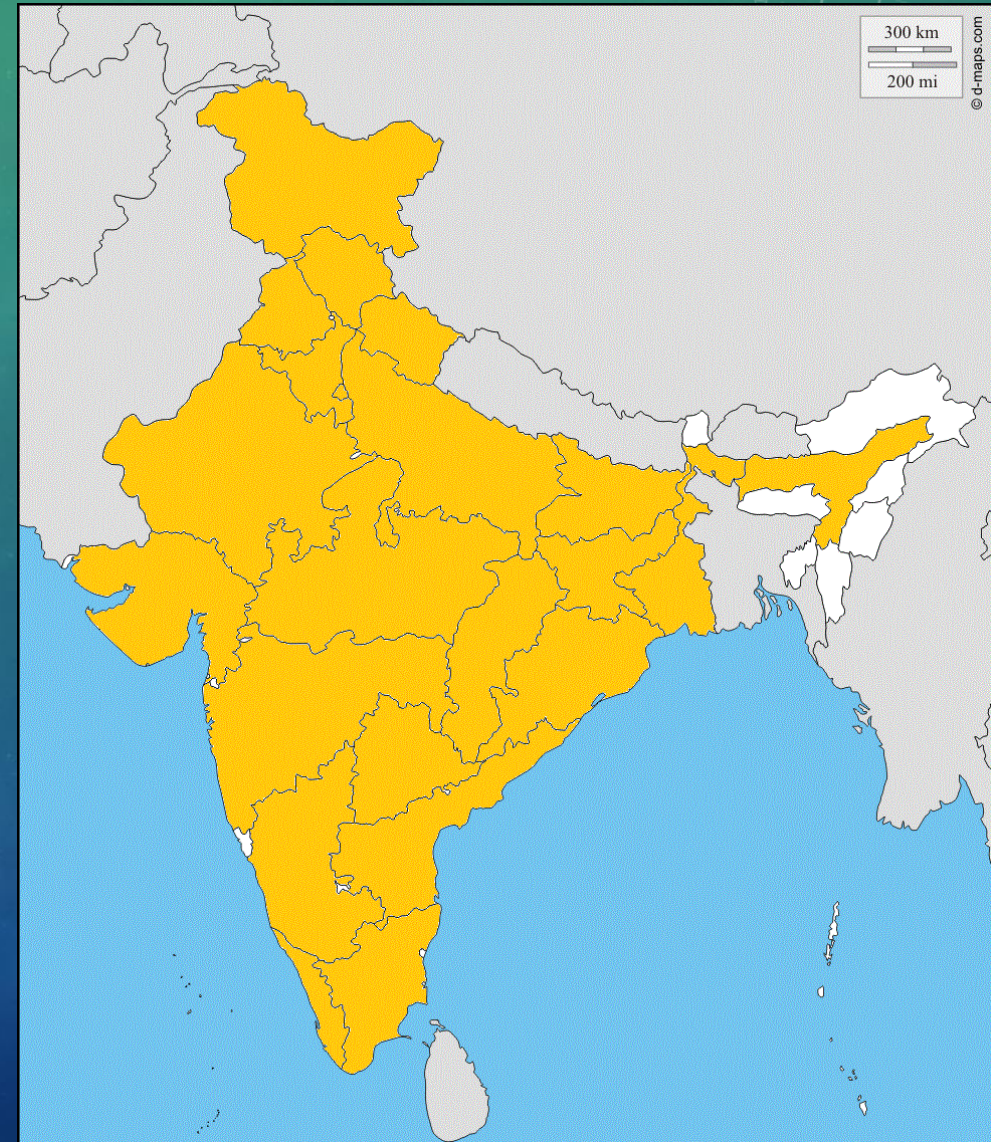
# Training Facilities Coverage

Presence in Almost all States of India:

- 95 Training Partners
- 150 Training Centres

*Including:*

- *Regional Training Centres*
- *Centres of Excellence*
- *Iconic Plumbing Centres*
- *Pradhan Mantri Kaushal Kendra (PMKK)*
- *PMKVY Centres*





# Glimpses of Some Training Facilities

Plumbing Laboratory,  
Chitkara University, Punjab



Regional Centres



Don Bosco - Grohe Jal Academy, New Delhi






# Glimpses of Some Training Facilities

## Plumbing Lab, College of Engineering, Pune







**A JOURNEY OF A THOUSAND MILES  
BEGINS WITH THE FIRST STEP**

**THANK YOU**