Integration of Skilling & Education for Student Employability

For Telangana Government

Group I Officers on Training

(23/03/26)

A Backdrop to the Issue

- Unemployment across the range of institutions a characteristic of Indian & Telangana education
- General Degree Colleges, Engineering Colleges (non-premier), Polytechnics & ITIs form the core reference
- Phenomenon is as much urban as rural
- High growth state but not converted into student employment
- Employability the key issue rather than avenues for employment
- Telangana among the fastest growing states in infrastructure, IT, Pharma, Entertainment, Logistics, Aerospace, Defence sectors

An Institution-wise Picture

I. General Degree Colleges

- Of the 44,000 general degree colleges (BA, BSc & BCom) in India, about 1057 in Telangana
- 1 crore students pass out All-India every year with 45% not even employable

Telangana scenario:

- Degree Colleges in State : 1,057
- Degree Colleges in DOST : 987 ; Total Degree Seats : 4.65 lakhs
- Total Admissions : 2.10 lakhs ; Total Vacant Seats : 2. 55 lakhs
- Approximately, 55% of degree admission seats are vacant.
- Roughly 75,000 undergrad students pass out yearly (not even 15% placements)

Issues regarding GDCs

- Outdated curriculum – not industry aligned/job aligned
- Outdated textbook learning dominates
- Industry penetration into curriculum negligible
- Internships & Hands-on work exposure structurally not facilitated
- Faculty ability outdated, No trainers for vocational skills – a culture of indifference
- Poor faculty not amenable to modern learning content
- Labs and learning methods not upgraded

GDCs Issues – contd..

- Students ripe & unemployable with attitude problem
- Easy degrees, absence of basic abilities of literacy
- Semi-urban and rural students further alienated from ground reality
- All outreach exercises reveal poor intake, poor acceptance of jobs
- Unemployment is a mindset ; Mobility is unthinkable

II. Engineering Institutions

Engineering : AY 2025-26-

Total Colleges in State : 171

Total Seats Available : 1.07 lakhs

Total Admissions Seats : ~95,000

Total Vacant Seats : ~12,000

Approximately, 11% of Engineering Admissions seats are vacant.

Issues Regarding Engineering Institutions

- Poor industry connect for curriculum & internships
- Theoretical inputs distanced from industry needs – no skill sets
- Either absence or poor quality of faculty
- Faculty quality hinders modern labs and industry participation
- Process itself is problematic in private engineering colleges
- Low Placements & low salary offers
- Hyderabad's IT sector comprises only 7% out of 5.64 lakh employees from Telangana State

III. Polytechnics

- The most employable students of all – hands-on work exposure
- 59 Govt and 56 Private Polytechnics
- Intake Capacity 27,180 but actual intake 19,470 students
- Good regional spread & student catchment
- Potential for growth immense in line with industry
- Cover all core engineering and IT sectors
- 1:4 ratio with Engineers but ratio worsened now

Issues with Polytechnics

- Lower capacity utilisation (less than 50 %) in several polytechnics
- Skewed student demand favouring IT related courses, disregarding core manufacturing courses
- Obsolete lab equipment and limited exposure to Industry 4.0 technologies
- Shortage of qualified trainers—existing instructors outdated in expertise and nearly 30 per cent of sanctioned instructor posts remain vacant
- Weak linkages with MSMEs and large industries for on-the-job training
- Student preference tilted towards moving on to engineering courses after Diploma rather than seeking placement – industry deprived of hands-on experience of polytechnic students

Polytechnics - contd

- Most institutions still deliver curricula aligned to 2008-10 occupational standards
- Limited updates on automation, robotics, renewable energy, EVs or digital manufacturing
- Recent investment by Tata Technologies to upgrade all polytechnics awaits results
- Industry has a strong preference for Polytechnic students.

Industrial Training Institutes (ITIs)

- 64 Government ITIs in Telangana
- Imparting basic and core skilling in various craftsmen trades, fitters, welders, computer operator, electrical trades etc.
- Avenues for ITI pass outs lie in lower-level industrial employment plus self-employment
- ITIs under Department of Employment & Training and Government programmes like the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and National Apprenticeship Scheme (NAPS) implemented through them owing to interior spread and proximity to beneficiary base
- An ITI can be a strong medium for imparting superior vocational education based on industry clusters
- Coupled with private ITIs there are more than 300 institutions across Telangana providing vocational training to more than 1.5 lakh youth.

Issues with ITIs

- Outdated curriculum despite high skill component (80:20) in instruction
- Instructor competence and knowledge not on par with modern industrial technology
- Industry-connect not established systematically despite presence of MSME clusters
- Student preference for ITI education dwindling in the face of access to degree education which psychologically carries higher social dignity
- Jobs being lost to other states due to absence of curriculum tuning and student non-preference
- Several government schemes simultaneously operating on ITIs upgradation, viz., Government of India PPP assistance, World Bank project assistance and Tata Technologies project. Synergy and convergence to be established.

Summary of Issues

State faces a **multi-layered skills & perception gap**:

- General academic graduates lacking curriculum relevance to employability
- Vocational institutions disconnected from industry-led curriculum
- Trainers, instructors, and teachers not up to date with current technology and practices
- Insufficient entrepreneurial orientation among youth
- Insufficient awareness among parents and students about changing trends in employability & need to shift from classroom pedagogy to competence- based skill education
- Institutional inability to improvise and transform into employability-oriented learning framework

Imperatives & Approach - I

- Immediate and rapid skill integration to reduce mismatch between education supply and labour-market demand to enhance employment rates, industrial competitiveness and quality of life parameters
- Approach to a Skill-Integrated Education Policy to establish a unified, outcome-oriented framework connecting **schools, colleges, ITIs, polytechnics and industry** under a single, coordinated vision
- Telangana economy diversified and service sector-dominated.
- A multi-sectoral landscape encompassing IT sector, Pharma, Airport & Aviation, Logistics, Healthcare, Hospitality, Life Sciences etc.
- **Services Sector** contributes about **61 per cent** of GSVA, followed by **Industry (22%)** and **Agriculture (15.8 %)**
- The Entertainment industry and construction sectors have a huge ongoing demand for skilled manpower at all levels

Imperatives & Approach - II

- EY-Government study , 2023, estimates possibility of **1.6 million new jobs** in Telangana by 2030

  The percentage-wise sectoral distribution :

- IT / ITeS: 25 %
- Manufacturing & Engineering: 22 %
- Services (BFSI, Hospitality, Logistics): 28 %
- Agriculture Allied / Renewable / Green Tech: 15 %
- Other Entrepreneurial Activities: 10 %

Future Skill Trends

- Higher education & vocational system of today necessarily to contain the following skill sets for generating employable students:
- Digitalisation – AI, data analytics, cloud computing, cybersecurity.
- Green Skills – sustainable energy, waste management, EV maintenance.
- Advanced Manufacturing – additive manufacturing, robotics, IoT.
- Soft Skills – communication, teamwork, problem-solving, 21st century skills /transferable skills
- Entrepreneurship – innovation, business management, digital marketing.

Implications for Education Policy

The evolving industrial & service sector base demands curricula that:

- Are dynamic, modular, co-created by industry with master trainer support
- Promote multidisciplinary learning with a significant component of soft skills
- Integrate practical training through modern labs, internships & apprenticeships
- Support self-employment and enterprise creation
- Inevitable for education system to move from degree-centric to competency-centric, from teaching to training, from employment-seeking to entrepreneurship-driven learning
- A constant self-driven approach to future proofing.

INSTITUTION-WISE SUMMARY OF MEASURES REQUIRED

Degree Colleges – final stage of engagement

Centre around the 6 pillars of:

- Industry-led curriculum
- Apprenticeship & internship integrated degree programmes (AEDPs)
- Massive soft skills upgrade
- Comprehensive training of teachers/trainers for the revised curricula
- Modern labs in colleges for hands-on learning
- ‘’Course-affiliation” of all apprenticeship-embedded degree programmes by colleges with the Skills University
- Target 100 colleges in Year 1 to commence

Quintessential Measures

- Training of Teachers & Trainers – Govt's biggest job and GOI's only job
- BEd. equivalent of Higher Education System to be created
- Teacher Apprenticeships ???
- 21st century skills/ soft skills critical component of education
- **Curriculum** of AEDP /Diploma courses to have curriculum prepared with relevant industry participation designed as per UGC guidelines
- Short-term courses led by industry attractive for employment/ Electives
- Aptitude testing or skill-mapping a necessary element for assigning skill courses
- Industry sponsorship of labs in HEIs

Measures for Polytechnics

- Complete modernisation of labs in government polytechnics, especially in core manufacturing sectors with industry participation. Introduction of smart manufacturing labs, robotics labs, and AI-driven processes in manufacturing
- May revive interest of students in manufacturing disciplines, as the IT profession is unlikely to see the same job absorption levels ahead
- To arrest movement of polytechnic students into mediocre engineering colleges after 3 years of hands-on work, Government to consider introduction of one Engineering Degree course per Government polytechnic
- Huge Training of Trainers of Polytechnics in modern technology – Immediate
- Interactive sessions between the faculty of Polytechnics and premier institutions such as IITs, NITs, Deemed Universities, BITS. Facilitate regular updates on emerging engineering domains and evolving technical education for continuous professional development
- Industry adoption of Polytechnics & flexible staffing solutions

Measures for ITIs

- ITIs already addressed by many funding initiatives from various agencies. But their qualitative upgradation needs to be carried out in relation to
- the requirements of industrial clusters in the region
- their potential to be upgraded into polytechnics and
- their physical and administrative restructuring to be amenable to latest skill courses with modern industry intervention
- (a) and (b) above would be automatically covered if (c) is attempted
- **Innovative Measure – 15 ITIs to be merged into others to generate space for modern industry to set up labs – essential to mitigate infrastructure creation each round of expansion**
- **Enable ITIs to grow into Polytechnics and Polytechnics into Engineering Colleges**

Role of YISU

- Will be described verbally as it encompasses all points

Namskaram

Wish you all the Very Best in your Careers