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The Current Scenario of Engineering Education & Employment Prospects in Andhra Pradesh & Telangana: an Analytical Study

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Abstract:

The proposed study evaluates and demonstrates the recent scenario of engineering education and job prospects in Andhra and Telangana. It also briefs about the latest trends, prevalent practices, and changing paradigms to enhance employability, thereby reducing the skill gap among technical learners. According to NIRF Rankings 2024, the University of Hyderabad, CBIT, IARE, Vardhaman, MLRIT, BVRIT, Guru Nanak, K.G. Reddy College of Engineering & Technology and Matrusri are some of the top Engineering colleges in Hyderabad through the university of Hyderabad blames new rules for NIRF ranking slide from top 5 to the 17th position in recent years. One of the main reasons for this steep drop is the introduction of the new Common Entrance Test (CUET) in 2022. Of late, there has been a considerable decline in engineering courses in Telangana due to a lack of job opportunities in the industry. For instance, the final phase of seat allotment in the web counseling highlights a grim picture of the state of engineering education in Telangana: 12,264 seats are left vacant in 201 engineering colleges out of the 66,847 available in a convener quota. In addition, students are more inclined to take other courses, says Goutham Rao, the president of the Engineering College Association. He further states that they are looking for courses like law, management, and BSc agriculture, as they also have agricultural engineering courses. To make matters worse, a dramatic increase in the dropout graph not only exposes the quality of engineering education but also draws attention to socio-economic factors like unemployment, inflation, as well as the global unemployment rate. After bifurcation from Andhra Pradesh, around 1.5 lakh students pass out every year, but only 30% of candidates get employed, emphasizes Dr K. Ramdas, vice-president for Telangana Professional Colleges Managements Association. In short, Telangana presents a grim picture of unemployment among technical learners. On the other hand, Andhra Pradesh spawns half a million graduates from its colleges and universities every year, but only 10% of general graduates and 25% of engineering graduates are employed in various sectors of industry. Interestingly, Andhra Pradesh is one of the prominent states that boast the largest number of technical and vocational institutions: 310 engineering colleges, 1400 degree

colleges, 267 polytechnics, and 516 ITSes. Around 4.4 lakh youth pass out of these institutions every year. Sadly, the lack of sufficient job opportunities compels technical graduates to migrate to other states in search of better career prospects. With the change of governments in both the states in 2023 (Telangana) and 2024 (Andhra Pradesh), it is imperative that unemployment and skill gaps are reduced to a considerable extent, as the heads of the respective states are visionaries and great statesmen.

Introduction:

Engineering has been one of the professions of choice since time immemorial as it has withstood the test of time. Of late, major concerns have been raised about the efficacy of engineering education in India. According to India Skills Report 2024, the overall young employability has shown improvement, reaching 51.25%. Interestingly, states like Haryana, Maharastra, Andhra Pradesh, Uttar Pradesh, Kerala, and Telangana have demonstrated a high concentration of employable youth. Surprisingly, India occupies a prominent global position in Artificial Intelligence penetration as well as talent concentration, thereby exhibiting a strong base of AI professionals, but India has a 60%-73% demand gap in key roles such as ML engineer, data scientist, DevOps engineer, and data architect. The current engineering education system has to be blamed to some extent as it couldn't keep up with the changing demands of the industry. Several issues plague the current engineering education system that hinders students' employability. Some of them that are prevailing in most technical institutions are outdated curricula, inept methodology of teaching, lack of internships or no internships, negligence of soft skills, and inability to keep pace with emerging technologies and industry expectations.

Education Budgets in Andhra Pradesh and Telangana:

A cursory glance at the comparison of education budgets between the two Telugu states reveals that Telangana lags behind, spending only 11.5% on education in 2025-'25, though it is considered to be the highest in modern times, while the neighboring Andhra fares slightly better by allocating 12.6% on education in 2023-'24 which is lower than the average allocation by other states (14.8%) in 2022-'23. Academic experts and educationists opine that the two states should mobilize substantial funds to enhance the quality of higher and secondary education as put forth by various commissions and policies. The above factors raise some pertinent questions regarding the complexities relating to quality education and employability in engineering education: What are the difficulties of being an Engineering student? Why do problems continue to rattle the engineering education system? Why are employability statistics so alarming? What are the practical

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solutions to be offered to counter unemployment and the skill gap? It goes without saying that one of the primary concerns is a widening gap between academic curriculum and industry prerequisites that leads to a lack of Employment. While unemployment and skill gap continues to be major pain points for any economy, the new government in Telangana has taken an initiative to announce schemes to generate more Employment and enhance the skill sets of an estimated 4.1 crore youth. With regard to the skilling program, 20 lakh youth will be skilled in a time frame of five years. In addition, 1000 industrial training institutes will be upgraded. Even the course content and design will be aligned with the skill needs of the industry. Another factor that haunts technical learners is that in spite of successfully graduating from various institutions, many of them struggle to transmit their knowledge and exhibit soft skills in real-world scenarios. This issue is compounded by the high competition for jobs from many engineering colleges and the oversupply of graduates. In a major development, one crore youth in Telangana will become industry-ready by interning with 500 top companies in a span of five years (2028). At the same time, they will receive a monthly allowance of Rs. 5000 from the center and another Rs. 6,000 from the company. On the other hand, since the new government was formed recently in the neighboring state of Andhra, one has to wait and watch for transformative initiatives on education and employment.

The current scenario of Engineering Education in India:

The current scenario of engineering is quite demanding due to numerous factors. One of them is a widening gap between academia and industry. According to Emertxe Information Technologies, an EdTech Company in Bengaluru, there are five ways to bridge the gap between academia and the industry. They are student motivation, a balanced syllabus, workplace exposure, leveraging technology and government, and policy embedment. Firstly, motivating students is crucial to discovering their strengths and identifying their weaknesses. Moreover, adopting a hands-on approach to learning significantly equips them to be aware of the opportunities and avoid threats, thereby boosting their motivation. Secondly, incorporating the latest and most relevant curriculum is the need of the hour. For instance, engineering subjects can be categorized into foundational subjects (ex: Digital Electronics) and advanced subjects (ex: Artificial Intelligence). Advanced topics can't be built without giving enough focus on foundations. Also, foundational learning should be made hands-on. Once students build strong fundamentals, it becomes relatively easy to master advanced topics. Even e-learning should be explored to learn the latest technologies and other modes of learning. For instance, Coursera, NPTEL, Udemy, Edx, and Academicearth will come in handy. Collaborating with EdTech companies like Emertxe will provide avenues of opportunities to get hands-on learning experiences and internships. This collaborative synergy would fill the gap between theoretical knowledge and real-

world application. Thirdly, a lack of awareness of workplace expectations will lead to a significant career gap. Internships certainly cement the gap b**etween academia and industry**, thereby facilitating career growth and honing essential skill sets. In this regard, AICTE, the governing body of engineering education in India, has made a one-month internship mandatory for pre-final learners. Fourthly, leveraging technologies has fostered the creation of learner groups across colleges and universities. For instance, top professors from Cornell University, Adhyayan, Hundred, and so on have been conducting live sessions, thereby providing exposure to cross-cultural learning. Finally, Government and policy embedment play a pivotal role in shaping the foundation of a stable and progressive society. For instance, The National Education Policy (NEP) is a comprehensive framework that outlines the vision and roadmap for transforming the education system in a country.

Skill India is a national initiative launched by the government with the goal of empowering the country's vast population with essential skill sets for employability and entrepreneurship. Recently, the Leadership Conclave Allyship ++ was organized by Siksha 'O' Anusandhan (SOA), a deemed-to-be university in Odisha. Its purpose is to bridge the gap between academia and the corporate world. Over 60 leaders and HR professionals have participated and discussed the significance of leadership, collaboration, and allyship in personal and professional contexts. The leadership conclave has provided an excellent platform for academic and corporate leaders to share their experiences, network, and collaborate on future initiatives. Thus, the above five strategies will equip learners to meet the growing demands of the digital world. On the other hand, the Leadership Conclave Ally ship would not only reduce unemployment but also hinder the gap between academia and industry.

Measures & Reforms taken by the government of Andhra Pradesh to enhance Tech Education and Employment:

Andhra Pradesh is indeed one of the prominent hubs for engineering education. The state is distinguished for some of the country's leading engineering institutions that boast high academic standards and impressive placement records. Recently, the state also witnessed a significant political swing, with Chandra Babu Naidu becoming the Chief Minister for the third time. One of the prominent decisions he made after assuming office in June 2024 was to conduct a skill census. He instructed officers to go ahead with the skill development census only after holding discussions with industrialists as well. The outcome will give a comprehensive idea about the distinction between skill gap and employability among technical learners. He is also keen to increase the rankings of state universities as well as upgrading the curriculum. On the other hand, his son, N. Lokesh, HRD Minister, is determined to enhance the academic standards. He has gone to the extent of probing the existing fee structure of private engineering colleges and instructed officials to offer coaching to technical students to make

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them industry-ready.

The government has gone the extra mile to bring reforms in education by signing an MOU with edX, a world-leading e-learning platform that offers courses from 170+ top-ranking institutions across the globe. This initiative will get exposure to renowned universities the world over. The Andhra Pradesh State Skill Development Corporation (APSSDC) has collaborated with Hindustan Coco Cola Beverages (HCCB) to train and empower 5,000 youth in sales and marketing across seven districts. This significant move will not only impact and enhance skill development but also generate Employment in the state. Since the government came to power 2 months ago, there will be more changes and reforms in education as the state has immense potential to transform the educational landscape in the near future.

Telangana set to enhance Tech Education and Employment:

Chief Minister A. Revanth Reddy has interacted with managements of private engineering colleges at JNTU-Hyderabad campus on "Quality Engineering Education in Telangana." He expressed concern over technical institutions for overlooking core courses like civil, mechanical, and electrical streams and replacing them with courses on emerging technologies like computer science, artificial intelligence, data mining, and machine learning. He is of the view that this imbalance could prove detrimental in the course of time for a developing country like India and has exhorted to preserve core engineering branches. He believes that this shift could adversely impact India's developmental trajectory in critical sectors. Moreover, he remarked, "India's progress hinges on these fundamental branches of engineering." He lamented the current trend where many engineering colleges prioritize courses that lead to temporary job opportunities over those that nurture professionals who are vital for long-term national growth. Painting a stark picture of the consequences, Reddy pointed out that the current system has transformed many engineering institutions into factories that churn out thousands of unemployed graduates annually. He urged colleges to reassess their strategies and collaborate with the government to identify and rectify systemic flaws. Acknowledging the challenges faced by private colleges in maintaining these traditional branches amidst a changing educational backdrop, the Chief Minister assured them of governmental support and necessary assistance for the continuity of civil, mechanical, and electrical engineering programs.

The chief minister declared that Telangana certainly deserves the sobriquet of Future State with game-changing projects such as the AI City, Net Zero Future City, and the massive reimagining of Hyderabad. While addressing CEOs of tech unicorns at an AI business roundtable hosted by the Indian Consulate General, he said, "New York State's motto is "Out of many, one." Texas is known as the 'Lone Star'. Unfortunately, the states of India don't have a motto. Therefore, he would

like to give a motto to Telangana as 'The Future State.' Moreover, he has a vision of transforming the state into a $1 trillion economy in a decade.

Aurum and Amgen to Impact Technology and Boost Employment:

Aurum Equity Partners has decided to invest $400 million in phases to build the next generation of AI-powered green data centers in Hyderabad. Its initial plan is to invest $50 million to establish a 100 MW cutting-edge Artificial Intelligence-powered data center. The next-generation data center is designed to bridge the digital divide between rural and urban India. For instance, government services such as e-seva, e-payment, and e-education will be accessible to people across the county. In addition, it will pave the way for more Employment. Amgen, a pharmaceutical major, plans to open a technology and innovation site in the city. It will be operational in Hitec City in the third quarter of the 2024 financial year. The convergence of biotechnology and technology equips the company to accelerate at great speed, thereby gaining confidence and efficiency among its employees.

Skill Varsity in Telangana:

The chief minister of Telangana has taken inspiration from Jawaharlal Nehru's emphasis on education. He categorically stated that the new skill varsity would eventually offer skill development training to thousands of youth and guaranteed job placements. It is interesting to note that several companies have already expressed interest in partnering with the university. The skill varsity will initially start with 6 of the scheduled 15 courses. Around 2,000 youth will receive training this year. In a major development, the chief minister of Telangana, A. Revanth Reddy, has secured over Rs 31,500 crores in investment plans for the state that would create 30,750 new jobs from 19 investment deals. He pitched Telangana as the Future State and Hyderabad 4.0. The deals come from across sectors such as IT, GCC, Life sciences, pharma, data centers, AI, cloud and data centers, electric vehicles and batteries, green energy, FMCG, and manufacturing. Thus, these investment deals certainly boost Employment and transform the lives of the people.

Empowering 200 Underprivileged Learners through Pioneer Eapcet/NEET:

The initiative, 'Pioneer Eapcet/NEET, ' is designed to empower learners from economically disadvantaged backgrounds who are pursuing studies in government junior colleges. It is funded by a local MLA, Yennam Srinivas, who urged them to set ambitious goals and work tirelessly towards them. He acknowledged the generous support of the local community, particularly the contributions from Rishi Junior College and Pratibha Junior College, which provided teachers and materials. Such initiatives would encourage politicians and educationists to equip and uplift learners from poor backgrounds for the welfare of society.

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Conclusion:

Thus the vision and dynamism of both leaders at the helm in Telugu states, will revolutionize tech education boost employability. The respective states have not only chipped in with various measures, schemes and reforms that will transform academy as well as industry but also equip themselves to compete with the top leading states in India for a better tomorrow.

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