TELANGANA STATE COUNCIL OF HIGHER EDUCATION

PERSPECTIVE PLAN OF TECHNICAL EDUCATION – 2018
(PPTE-2018-19)

Office: Opp. Mahavir Hospital, Mahavir Marg, Masab Tank, Hyderabad – 500 028.

PERSPECTIVE PLAN OF TECHNICAL EDUCATION IN TELANGANA STATE
(PPTE – 2018)

1. BACKGROUND OF PERSPECTIVE PLAN (PPTE) FOR AICTE -2018

AICTE Needs a Perspective Plan for the State of Telangana for setting up of New Technical Initiatives based on:

Broad parameters on which the perspective plan is to be worked out are:

1) Studies carried out in respect of various colleges existing in all districts and percentage (%) of admission taking place, future demand etc.,
2) No. of colleges in districts for all AICTE approved programmes vis-à-vis diploma/ under graduate/ Post graduate in Engineering, Pharmacy, Architecture, Management etc.,
3) Scope for graduate's employability, research, startup and skill development, for not setting up of new technical institutes in specific or all districts of states.
4) District-wise perspective plan prepared indicating its decision for not permitting setting up of new institutes in diploma/ under graduate/ post graduate level(s), Engineering, Pharmacy, Architecture, Management etc.

Based on the above, following is a brief outline of the Status of Technical Education in State of Telangana.

2. SOCIO ECONOMIC AND INDUSTRIAL PROFILE OF TELANGANA

Government of Telangana has taken many initiatives for the development of manufacturing industries in the region. These initiatives are designed to cater to the requirements of various industries from large industrial projects to MSME sector. The spectrum of initiatives include investment facilitation, providing support for implementation through TS-iPASS, nurturing new start-up eco system through RICH and T-Hub and revival of existing MSME units through establishment of Telangana Industrial Health Clinic. In addition to the policy measures, incentives and initiatives provided by the state, Telangana has advantages that make the state as potential manufacturing hub in India.

Telangana is home to several major manufacturing industries such as bulk drugs, pharmaceuticals, agro-processing, cement & mineral-based industries, high precision engineering, textiles, automobiles and auto components industry, spices, horticulture, poultry farming, biotechnology, defence equipment, etc

   2.1 Factories: The number of factories in Telangana has increased from 7,357 in 2008-09 to 11,068 in 2013-14 posting 50 per cent growth. The total gross value added by factories in 2013-14 is INR 35,985 Cr. Telangana accounts for about 6 per cent of the total number of factories in All India

   2.2 Micro Small and Medium Enterprises: Micro, Small and Medium Enterprises (MSME) sector plays an important role in the economic and social development of the state and provide direct employment opportunities to 7,82,406 people, with a vast network of around 69,120 units

   2.3 Handloom and power loom Sector: The handloom industry is the largest cottage industry in the country with a position next only to agriculture in providing massive rural employment. There are 627 Handloom Weaver Cooperative Societies in the state. About 82,438 handloom weavers in the State are in the fold of Cooperatives and about 38,002 handloom weavers are outside cooperatives. There are about 49,112 power looms in Telangana.

3. TECHNICAL EDUCATION IN TELANGANA – AN OVERVIEW

3.1. Technical Education broadly covers

- ➢ Diploma
- ➢ B. Tech./B.E.
- ➢ B. Architecture
- ➢ B. Pharmacy
- ➢ M. Tech.
- ➢ M. Pharm.
- ➢ MBA
- ➢ MCA

3.2. Number of Colleges/institutions

3.2.a. NUMBER OF PROFESSIONAL COLLEGES AND SEATS AVAILABLE DURING THE ACADEMIC YEAR 2016-17 AND 2017-18 IN TELANGANA - DISTRICT WISE

Sl. No	District	ENGINEERING COLLEGES					
		2016-17			2017-18		
		No. of Coll.	No. of Seats	Enrol Ment	No. of Coll.	No. of Seats	Enrol Ment
1	Adilabad	0	0	-	0	0	0
2	Badradri	6	1905	-	4	1185	672
3	Hyderabad	17	7910	-	19	9210	5800
4	Jagitial	1	300	-	1	300	278
5	Jangaon	3	840	-	2	660	227
6	Jayashankar	0	0	-	0	0	0
7	Jogulamba	0	0	-	0	0	0
8	Kamareddy	0	0	-	1	20	18
9	Karimnagar	9	4215	-	9	3435	1649
10	Khammam	10	4080	-	10	3210	1242
11	Komaram Bheem	0	0	-	0	0	0
12	Mahabubabad	0	0	-	0	0	0
13	Mahabubnagar	2	900	-	2	780	238
14	Mancherial	1	75	-	1	45	0
15	Medak	1	1170	-	1	1110	761
16	Medchal	50	29010	-	47	29808	18378
17	Nagarkurnool	0	0	-	0	0	0
18	Nalgonda	6	1680	-	5	1200	394
19	Nirmal	0	0	-	0	0	0
20	Nizamabad	4	1470	-	4	1183	482
21	Peddapalli	5	1350	-	5	1170	493
22	Rajanna	0	0	-	0	0	0
23	Ranga Reddy	60	29815	-	54	27093	13339
24	Sanga Reddy	7	2200	-	8	1532	547
25	Siddipet	3	840	-	1	420	188
26	Suryapet	7	2910	-	6	2340	888
27	Vikarabad	0	0	-	0	0	0
28	Wanaparthy	0	0	-	0	0	0
29	Warangal Rural	3	1740	-	3	1500	613
30	Warangal Urban	13	6540	-	12	5760	3330
31	Yadadri	12	5808	-	6	2280	721
	TOTAL	**220**	**104758**	**73686**	**201**	**94241**	**50258**

Source: TSEAMCET-17 Convener SW-I (2017-18)

3.2.b. NUMBER OF PROFESSIONAL COLLEGES AND SEATS AVAILABLE DURING THE ACADEMIC YEAR 2016-17 AND 2017-18 IN TELANGANA - DISTRICT WISE

Sl. No	District	B. PHARMACY COLLEGES					
		2016-17			2017-18		
		No. of Coll.	No. of Seats	Enrol ment	No. of Coll.	No. of Seats	Enrol ment
1	Adilabad	0	0	-	0	0	0
2	Badradri	1	60	-	3	220	121
3	Hyderabad	9	748	-	12	988	639
4	Jagitial	0	0	-	0	0	0
5	Jangaon	3	180	-	2	120	79
6	Jayashankar	0	0	-	0	0	0
7	Jogulamba	0	0	-	0	0	0
8	Kamareddy	0	0	-	0	0	0
9	Karimnagar	6	390	-	7	540	296
10	Khammam	8	480	-	6	400	242
11	Komaram Bheem	0	0	-	0	0	0
12	Mahabubabad	0	0	-	0	0	0
13	Mahabubnagar	4	280	-	4	240	118
14	Mancherial	0	0	-	0	0	0
15	Medak	2	200	-	2	200	119
16	Medchal	20	1760	-	20	1790	1103
17	Nagarkurnool	0	0	-	0	0	0
18	Nalgonda	3	220	-	3	260	134
19	Nirmal	0	0	-	0	0	0
20	Nizamabad	3	170	-	3	220	134
21	Peddapalli	1	100	-	1	100	51
22	Rajanna	0	0	-	0	0	0
23	Ranga Reddy	24	1868	-	26	2125	1269
24	Sanga Reddy	3	260	-	2	160	112
25	Siddipet	2	160	-	2	160	108
26	Suryapet	7	580	-	6	520	311
27	Vikarabad	0	0	-	0	0	0
28	Wanaparthy	0	0	-	0	0	0
29	Warangal Rural	7	420	-	4	240	124
30	Warangal Urban	14	960	-	18	1190	666
31	Yadadri	6	390	-	4	230	126
	TOTAL	**123**	**9226**	**7994**	**125**	**9703**	**5742**

Source: TSEAMCET-17 Convener SW-I (2017-18)

3.2.c. NUMBER OF PROFESSIONAL COLLEGES AND SEATS AVAILABLE DURING THE ACADEMIC YEAR 2016-17 AND 2017-18 IN TELANGANA - DISTRICT WISE

Sl. No	District	M.PHARM. COLLEGES						Sl. No	District	M.PHARM. COLLEGES					
		2016-17			2017-18					2016-17			2017-18		
		No. of Coll.	No. of Seats	Enrol ment	No. of Coll.	No. of Seats	Enrol ment			No. of Coll.	No. of Seats	Enrol ment	No. of Coll.	No. of Seats	Enrol ment
1	Adilabad	0	0	-	0	0	-	17	Nagarkurnool	0	0	-	0	0	-
2	Badradri	1	36	-	0	0	-	18	Nalgonda	3	123	-	2	75	-
3	Hyderabad	9	428	-	9	354	-	19	Nirmal	0	0	-	0	0	-
4	Jagitial	0	0	-	0	0	-	20	Nizamabad	2	51	-	1	15	-
5	Jangaon	3	102	-	2	60	-	21	Peddapalli	1	90	-	1	45	-
6	Jayashankar	0	0	-	0	0	-	22	Rajanna	0	0	-	0	0	-
7	Jogulamba	0	0	-	0	0	-	23	Ranga Reddy	20	1071	-	21	501	-
8	Kamareddy	0	0	-	0	0	-	24	Sanga Reddy	3	156	-	3	69	-
9	Karimnagar	3	108	-	4	135	-	25	Siddipet	2	54	-	1	30	-
10	Khammam	8	249	-	6	165	-	26	Suryapet	5	312	-	4	150	-
11	Komaram Bheem	0	0	-	0	0	-	27	Vikarabad	0	0	-	0	0	-
12	Mahabubabad	0	0	-	0	0	-	28	Wanaparthy	0	0	-	0	0	-
13	Mahabubnagar	2	139	-	2	45	-	29	Warangal Rural	7	225	-	6	165	-
14	Mancherial	0	0	-	0	0	-	30	Warangal Urban	14	563	-	13	411	-
15	Medak	2	48	-	1	15	-	31	Yadadri	5	144	-	3	45	-
16	Medchal	17	795		16	510			**TOTAL**	**107**	**4694**	**3396**	**95**	**2790**	**2533**

3.2.d. NUMBER OF PROFESSIONAL COLLEGES AND SEATS AVAILABLE DURING THE ACADEMIC YEAR 2016-17 AND 2017-18 IN TELANGANA - DISTRICT WISE

Sl. No	District	M.TECH. COLLEGES						Sl. No	District	M.TECH. COLLEGES					
		2016-17			2017-18					2016-17			2017-18		
		No. of Coll.	No. of Seats	Enrol ment	No. of Coll.	No. of Seats	Enrol ment			No. of Coll.	No. of Seats	Enrol ment	No. of Coll.	No. of Seats	Enrol ment
1	Adilabad	0	0	-	0	0	-	17	Nagarkurnool	0	0	-	0	0	-
2	Badradri	3	150	-	1	18	-	18	Nalgonda	1	48	-	0	0	-
3	Hyderabad	13	1041	-	11	966	-	19	Nirmal	0	0	-	0	0	-
4	Jagitial	0	0	-	1	90	-	20	Nizamabad	1	48	-	0	0	-
5	Jangaon	1	42	-	0	0	-	21	Peddapalli	1	72	-	0	0	-
6	Jayashankar	0	0	-	0	0	-	22	Rajanna	0	0	-	0	0	-
7	Jogulamba	0	0	-	0	0	-	23	Ranga Reddy	41	3050	-	21	1244	-
8	Kamareddy	0	0	-	0	0	-	24	Sanga Reddy	2	102	-	1	54	-
9	Karimnagar	6	288	-	1	18	-	25	Siddipet	0	0	-	0	0	-
10	Khammam	6	270	-	0	0	-	26	Suryapet	6	420	-	3	258	-
11	Komaram Bheem	0	0	-	0	0	-	27	Vikarabad	0	0	-	0	0	-
12	Mahabubabad	0	0	-	0	0	-	28	Wanaparthy	0	0	-	0	0	-
13	Mahabubnagar	2	162	-	2	36	-	29	Warangal Rural	3	204	-	2	138	-
14	Mancherial	0	0	-	0	0	-	30	Warangal Urban	10	859	-	6	438	-
15	Medak	1	144	-	1	144	-	31	Yadadri	4	229	-	1	24	-
16	Medchal	42	3869		31	2568			**TOTAL**	**143**	**10998**	**6001**	**82**	**5996**	**4736**

3.2.e. NUMBER OF PROFESSIONAL COLLEGES AND SEATS AVAILABLE DURING THE ACADEMIC YEAR 2016-17 AND 2017-18 IN TELANGANA - DISTRICT WISE

Sl. No	District	MBA COLLEGES 2016-17 No. of Coll.	No. of Seats	Enrol ment	2017-18 No. of Coll.	No. of Seats	Enrol Ment
1	Adilabad	0	0	-	0	0	0
2	Bhadradri	4	240	-	4	240	146
3	Hyderabad	55	6920	-	54	6465	4438
4	Jagitial	1	180	-	0	0	0
5	Jangaon	0	0	-	0	0	0
6	Jayashankar	0	0	-	0	0	0
7	Jogulamba	0	0	-	0	0	0
8	Kamareddy	0	0	-	0	0	0
9	Karimnagar	16	1380	-	15	1740	1078
10	Khammam	14	960	-	14	960	528
11	Komaram Bheem	0	0	-	0	0	0
12	Mahabubabad	0	0	-	0	0	0
13	Mahabubnagar	4	240	-	4	240	149
14	Mancherial	0	0	-	1	60	40
15	Medak	2	120	-	2	120	82
16	Medchal	67	8716	-	66	8590	5691
17	Nagarkurnool	1	60	-	1	60	19
18	Nalgonda	5	288	-	5	420	175
19	Nirmal	0	0	-	0	0	.
20	Nizamabad	6	510	-	6	450	278
21	Peddapalli	4	360	-	5	660	436
22	Rajanna	0	0	-	0	0	0
23	Ranga Reddy	66	7740	-	65	6825	4323
24	Sanga Reddy	4	240	-	3	240	136
25	Siddipet	4	300	-	4	300	207
26	Suryapet	4	360	-	2	240	152
27	Vikarabad	1	60	-	1	60	45
28	Wanaparthy	1	120	-	1	120	50
29	Warangal Rural	7	480	-	6	420	254
30	Warangal Urban	27	2460	-	26	2400	1345
31	Yadadri	12	1200	-	10	960	528
	TOTAL	**305**	**32934**		**295**	**31570**	**20200**

Source: TSICET-17 Convener SW-I (2017-18)

3.2.f. NUMBER OF PROFESSIONAL COLLEGES AND SEATS AVAILABLE DURING THE ACADEMIC YEAR 2016-17 AND 2017-18 IN TELANGANA - DISTRICT WISE

Sl. No	District	MCA COLLEGES 2016-17 No. of Coll.	No. of Seats	Enrol Ment	2017-18 No. of Coll.	No. of Seats	Enrol Ment
1	Adilabad	0	0	-	0	0	0
2	Badradri	0	0	-	0	0	0
3	Hyderabad	15	1000	-	16	1060	636
4	Jagitial	0	0	-	0	0	0
5	Jangaon	0	0	-	0	0	0
6	Jayashankar	0	0	-	0	0	0
7	Jogulamba	0	0	-	0	0	0
8	Kamareddy	0	0	-	0	0	0
9	Karimnagar	2	120	-	2	120	68
10	Khammam	0	0	-	0	0	0
11	Komaram Bheem	0	0	-	0	0	0
12	Mahabubabad	0	0	-	0	0	0
13	Mahabubnagar	0	0	-	0	0	0
14	Mancherial	0	0	-	0	0	0
15	Medak	0	0	-	0	0	0
16	Medchal	7	450	-	10	660	354
17	Nagarkurnool	0	0	-	0	0	0
18	Nalgonda	1	60	-	1	60	40
19	Nirmal	0	0	-	0	0	0
20	Nizamabad	2	100	-	2	100	58
21	Peddapalli	0	0	-	0	0	0
22	Rajanna	0	0	-	0	0	0
23	Ranga Reddy	2	120	-	2	120	66
24	Sanga Reddy	0	0	-	0	0	0
25	Siddipet	1	30	-	1	60	45
26	Suryapet	1	60	-	0	0	0
27	Vikarabad	0	0	-	0	0	0
28	Wanaparthy	0	0	-	0	0	0
29	Warangal Rural	0	0	-	0	0	0
30	Warangal Urban	6	496	-	7	496	316
31	Yadadri	0	0	-	0	0	0
	TOTAL	**37**	**2436**		**41**	**2676**	**1583**

Source: TSICET-17 Convener SW-I (2017-18)

4. CURRENT SCENARIO (SWOT ANALYSIS)

The new state of Telangana was formed in 2014 after separation from erstwhile Andhra Pradesh. The economy of the state (GSDP) is growing continuously from 8.7 % in 2014-15 to 10.1% in the year 2016- 17 (at constant 2011-12 prices). Telangana is one of the few states in India to register the double digit growth in the recent past. The state has achieved its growth by creating robust policy framework, attracting investments in manufacturing sector and building necessary infrastructure facilities for the manufacturing sector to grow.

Technical Education in Telangana: An overview

Technical Education in Telangana is broadly delivered through the courses such as B.E / B Tech, B Pharmacy, MBA, MCA etc.

The following chart shows that there is a general decline in the number of technical institutes and the intake after 2011-12.

Table – II

Approved Professional Colleges with Intakes Year Wise (As per Affiliations of the Universities)						
Course	**Colleges/Intake**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**
Engineering	Colleges	353	353	266	219	212
	Sanctioned intake	172944	172944	115912	104598	97961
Pharmacy	Colleges	168	168	145	123	129
	Sanctioned intake	14840	14840	11490	9226	9943
MBA	Colleges	406	406	347	303	304
	Sanctioned intake	55700	55700	41796	32994	32710
MCA	Colleges	133	133	49	35	42
	Sanctioned intake	8096	8096	2966	2376	2736
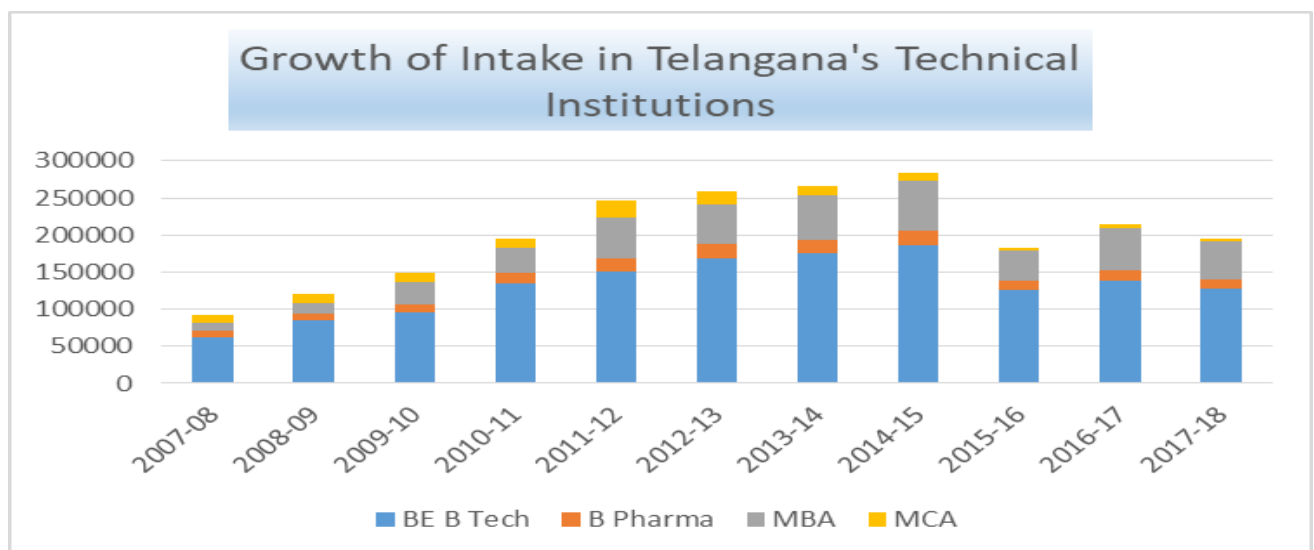
Growth of Telangana's Technical Institutions
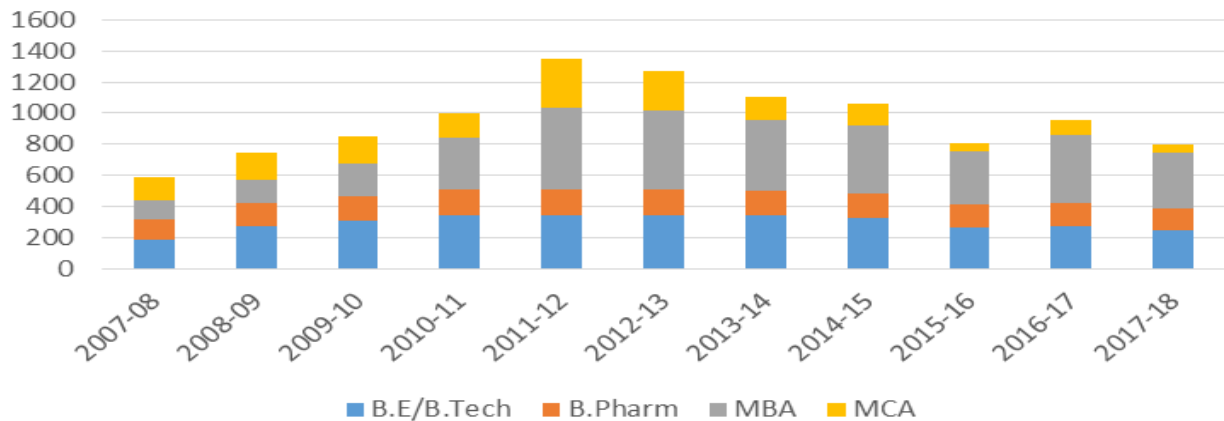
Table – III

Vacancy position in the Engineering, Pharmacy, MBA & MCA Programmes during the Years 2015-16 to 2017-18, as per Intakes of Table-II.

Engineering				
Sl. No.	Year	Sanctioned Intake	Enrollment	Seats Vacant
1	2015-16	115912	70792	45120
2	2016-17	104598	71814	32784
3	2017-18	97961	68594	29367
Pharmacy				
Sl. No.	Course	Sanctioned Intake	Enrollment	Seats Vacant
1	2015-16	11490	7455	4035
2	2016-17	9226	7334	1892
3	2017-18	9943	UNDER PROGRESS	
MBA				
Sl. No.	Course	Sanctioned Intake	Enrollment	Seats Vacant
1	2015-16	40146	31975	8171
2	2016-17	32994	20820	12174
3	2017-18	32710	27714	4996
MCA				
Sl. No.	Course	Sanctioned Intake	Enrollment	Seats Vacant
1	2015-16	2966	632	1484
2	2016-17	2376	1659	717
3	2017-18	2736	2012	724

Table – IV

Co-relation in the figures between those appearing for 10+2 Examination in the State with Mathematics background and the availability of Undergraduate seats in the Technical Education, district-wise:

District wise (as per 10 Districts) intake of Engineering Programme and the Intermediate MPC Pass-Outs

Sl. No.	Erstwhile District	Intake of B.E/ B. Tech	No. of students appeared in Intermediate (MPC) during March 2017	No. of students passed in Intermediate (MPC) during March 2017	% of intermediate students likely to get a seat in B. Tech in the district
1	ADILABAD	120	5452	3487	64
2	HYDERABAD	12260	22422	17367	77
3	KHAMMAM	7200	9337	7244	78
4	KARIMNAGAR	5535	11987	8612	72
5	MAHABOOBNAGAR	1410	6966	4528	65
6	MEDAK	7015	7789	5238	67
7	NALGONDA	12444	10978	7644	70
8	NIZAMABAD	2310	9166	6391	70
9	RANGA REDDY	69381	56863	49956	88
10	WARANGAL	9180	14516	10533	73
	TOTAL	**126855**	**155476**	**121000**	**78**

The Table furnished above gives an indication of the total number of Institutions offering B.E/B.Tech. Programmes district-wise, along with corresponding intake available in these programmes vis-a vis the number of candidates who have appeared and qualified at the 10+2 examination at Intermediate level in the State during March 2017.

A perusal of the figures reveals the fact that during the Academic Year i.e. 2016-17, for every two students who appeared for 10+2 Examination and successfully completed the same, there is one seat available if he intends to pursue a career in Technical Education. Thus, every student successfully completing 10+2 Examination with Mathematics background is almost assured of a seat in B.E/ B.Tech. programme if he intends pursuing a course in Technical Education.

This unbridled growth has resulted in many seats in Degree programmes in Science and Arts being left unfilled. This has an adverse impact on other Technical Courses also. The demand for Polytechnic Courses has reduced in view of more Engineering Colleges and there is a continuation of studies of Polytechnic Diploma students into Engineering courses.

Even those interested in entering the Industry are allured by the easily available Engineering seats. Thus indirectly, a surfeit of Engineering seats is depriving Industry of skilled man power at supervisory level.

Imbalance in the number of seats available in IT related disciplines and conventional disciplines

ABSTRACT OF COURSES AND SEATS IN THE EXISTING ENGINEERING COLLEGES FOR THE ACADEMIC YEAR 2017-18

The Table furnished below gives statistics with regard to the availability of Seats, Course-wise in the State during the Academic Year, 2017-18.

Sl. No	Course	INTAKE	CONVENOR SEATS	ENROLMENT
1	Aeronautical Engineering	420	252	233
2	Agricultural Engineering	180	32	29
3	Automobile Engineering	270	84	84
4	Biomedical Engineering	30	51	41
5	Biotechnology	120	84	58
6	Chemical Engineering	180	246	209
7	Civil Engineering	17406	8389	6240
8	Computer Science & Engineering	30660	17508	14839
9	Electrical and Electronics Engineering	16846	8954	5404
10	Electronics and Communications Engineering	30774	16389	12563
11	Electronics & Instrumentation Engineering	415	322	285
12	Electronics and Computer Engineering	300	168	161
13	Electronics and Telematics Engineering	120	42	42
14	Information Technology	5010	3201	3004
15	Mechanical Engineering	21549	10389	6424
16	Mechatronics	60	42	41
17	Metallurgical and Materials Engineering	60	42	20
18	Mining Engineering	1125	97	82
19	Petroleum Engineering	960	42	6
	Grand Total	**126485**	**66334**	**49765**

Source: Camp-Officer, TSCHE

A perusal of the above Table reveals the fact that the four programmes viz. Information Technology, Computer Science and Engineering, Electronics and Communication Engineering and Electrical and Electronics Engineering together account for 83,290 seats of the total Intake of 1,26,855 seats. This accounts for nearly 66% of the seats and rest account for about 43,565 seats, which is 34% of the total Intake. This lopsided priority will in the long run have adverse effect on the growth of infrastructure in the country with its attendant consequences.

This imbalance needs to be corrected on a priority basis so that the manufacturing and other sectors do not suffer. The courses on demand related to latest Technologies and needs of the Industry such as Mining, Textile, Pharmacy, Automobile, Aviation Civil Engineering, and Construction Technology and hence their enhancement in Intake may be considered in the State, while keeping in view of the 14 Thrust Areas as mentioned in Para 5, Page 14 of this Plan. This is also keeping in view that the Pharma city, Textile hub, Fabcity, ITIR, IT Hubs, etc, are emerging in Telangana State.

Table - VI

Non-uniform distribution of Technical Institutions and Intake among the Districts in the State.

District wise (as per 10 Districts) Institutions & Intake of various Programmes for the Academic Year, 2017-18.

Sl. No.	Erstwhile District	B.E/B.Tech				B.Pharm			
		No. of Instituti ons	AICTE Intake	Sancti oned intake	Enrol- ment	No. of Instituti ons	AICTE Intake	Sancti oned intake	Enrol- ment
1	Adilabad	1	120	45	0	0	0	0	Under progre ss
2	Hyderabad	25	12260	9210	7353	11	1068	988	
3	Khammam	18	7200	4395	2665	10	1045	620	
4	Karimnagar	14	5535	4905	3200	8	790	640	
5	Mahaboobnagar	4	1410	780	378	4	300	240	
6	Medak	14	7015	3062	1971	8	730	520	
7	Nalgonda	30	12444	8160	4451	20	1730	1070	
8	Nizamabad	6	2310	1203	688	3	240	220	
9	Ranga Reddy	122	69381	58281	42400	50	5088	4095	
10	Warangal	17	9180	7920	5488	22	2000	1550	
	TOTAL:	**251**	**126855**	**97961**	**68594**	**136**	**12991**	**9943**	

*Before reorganization into 31 districts.

The above Table gives the distribution of Institutions and Intake in each of the categories of Technical Institutions across the State. It is evident from the above Table that the growth has not been uniform across all the Districts in the State and /or Regions of the State. The District average of Engineering colleges is 25. In Ranga Reddy District and Nalgonda District the number of Engineering Colleges is above District average number of Colleges. For example, the number of Institutions offering B.E/B.Tech. programme in Adilabad district of the State during the academic year 2017-18 is only 1 with an intake of 120 seats, while Ranga Reddy district during the same Academic Year, has 122 Institutions with an intake of 69381 seats. In respect of Warangal district, the figures are 17 Institutions with an Intake of 9180 seats. The figures are similar in respect of other programmes in all the Districts of the State, revealing the fact that the growth has not been uniform. The shifting of Institutions from Educationally Backward regions to Educationally Developed regions has not been curtailed by AICTE. The above figures have been furnished to highlight the imbalance in the growth of Technical Institutions and to reveal the fact that development has not been uniform across the State.

SOME RELEVANT ISSUES PERTAINING TO TECHNICAL EDUCATION IN TELANGANA.

(i). As stated supra there are 1,26,855 seats on offer in the State during the Academic Year, 2017-18 on B.Tech programme. As per AICTE norms, for every 15 students there must be one qualified teaching staff member. AICTE also stipulates the cadre ratio between Asst. /Associate/Professor as 6:2:1, with the entry qualification level for a post of Asst. Professor level in Engineering/Pharmacy programmes being a Post Graduate degree in the appropriate programme i.e. M.Tech./M. Pharmacy

as per its latest norms while for the post of Associate Professor/Professor a Ph.D is essential. It has often been the criticism from the stakeholders that many of the Institutions are not in a position to offer Education of good Quality as they are unable to provide experienced and Qualified Teaching faculty as per the above norms at their Institutions. This is resulting in substandard or poor quality Graduates being churned out from Institutions every year.

Assuming that the present intake could be pegged at the same level and would remain static for the next three consecutive Academic years, the total number of students who would be pursuing their Undergraduate Degree Programme in Engineering would be as follows:-

1.	Intake during academic year 2017-18	1.27 Lakhs
2.	Intake during academic year 2018-19	1.27 Lakhs
3.	Intake during academic year 2019-20	1.27 Lakhs
4.	Intake during academic year 2020-21	1.27 Lakhs
	TOTAL	**5.08 Lakhs**

As per AICTE norms there should be one Teaching staff member available for every 15 students. Thus by the Year, 2020-21, the State would be requiring about 33,866 faculty who are qualified as per norms. Further, as per norms a cadre ratio of 1:2:6 between Professors, Associate Professors and Assistant Professors is required to be maintained. This would mean that of the total 34,000 faculty required approximately 22,667 would be required at the level of Assistant Professors with M. Tech. as their qualification while the remaining 11,333 would be required at the level of Associate Professor and Professor with Ph.D as their qualification (3,778 Professors and 7,555 Associate Professors).

While the growth in the Intake has been exponential in nature, the corresponding increase in the availability of qualified Teaching staff has not kept pace at the same rate.

The number of faculty available with Ph.D. qualification is very few in number across the several Engineering Colleges in the State and it would not be surprising if hardly 1500 such staff members could be found across 275 Colleges in the State while the number required would be in the order of 12,333 of such Faculty, assuming that there would not be any further increase in the Intake in the Undergraduate Programme in the Engineering in the State during the next four or five years.

Issue of Conditional Sanction by AICTE in respect of New Technical Institutions and /or sanction of new Programmes or variation in Intake in the Existing Programmes in the Existing Technical Institutions in the State:

It has often been noticed that AICTE has been according Conditional Approval for Establishment of New Technical Institutions in the State and at the same time calling upon the Managements to rectify the deficiencies stated in the approval letter within a specified period of time. The Managements of Societies/Trusts are found not to be much concerned about these deficiencies pointed out and hardly pay any attention to set them right. With the AICTE according approvals based on mandatory disclosure provided by the Institutions and without inspecting the existing Colleges, the Managements

are not serious in rectifying the deficiencies pointed out and then continue to exist in several Technical Institutions in the State. Therefore conditional sanctions may not be given henceforth.

(ii) Permitting Second Shift of Engineering Colleges.

If a Second Shift of Engineering College in existing Engineering College is permitted, the unfilled capacity may increase and may also call into question the viability of the Colleges located in rural and interior areas where already the unfilled seats are considerable. If the Intake in available Colleges is permitted to be increased by according approval for Second Shift of Engineering College in the existing Institution it would aggravate and further compound the unfilled seats in the State and the percentage of unfilled seats would consequently rise. In addition, more Qualified faculty would be required to be provided by the Institutions and as explained supra, there is already an acute and severe shortage of experienced and Qualified staff. This would further add to the problem. Further, it would widen the gap in the distribution of available number of Institutions and Intake, district and region-wise besides contributing to the mismatch in the available seats between IT related branches and non IT related branches. Therefore, approval for a Second Shift of Engineering Colleges in existing Engineering Colleges in the State is a matter of serious concern. AICTE should consider disbanding totally this Policy of permitting Second Shift of Engineering Colleges.

(iii) Approvals for Establishment of New Polytechnics

The statistics shows that there is a sanctioned intake of 126855 in BE/B.Tech and intake in diploma level institutions is 53285. The skewed Ratio of intake of engineering to diploma in the state is 2.38 as against the industry requirement of 2.38: 1. Hence there is a need for sanction of more Polytechnics:

Sl. No.	Erstwhile District	DIPLOMA			
		No. of Institutions	AICTE Intake	Sanctioned intake	Enrolment
1	Adilabad	07	1380	1140	1255
2	Hyderabad	13	3750	3187	2999
3	Khammam	18	5340	5100	2905
4	Karimnagar	16	3345	2940	2521
5	Mahaboobnagar	11	2460	2340	1898
6	Medak	22	4980	4695	3209
7	Nalgonda	35	10560	7245	3156
8	Nizamabad	10	2020	1720	1523
9	Ranga Reddy	54	14830	11704	8296
10	Warangal	19	4620	4380	3731
	TOTAL:	**205**	**53285**	**44451**	**31493**

District wise Enrolment of SSC pass outs in intermediate / ITI/ Diploma

Sl. No.	Dist Name	SSC		Admitted into			Total Admitted	Not joined in inter/ ITI/ Diploma
		Appeared	Passed	Inter-mediate	ITI	Diploma		
1	2	3	4	5	6	7	8	9
1	Adilabad	12176	8915	9014	465	323	9802	-887
2	Bhadradri Kothagudem	17109	12610	10257	2115	1136	13508	-898
3	Hyderabad	90079	62613	53729	1952	2999	58680	3933
4	Jagitial	14746	14158	9269	244	120	9633	4525
5	Jangaon	8589	7704	5241	1022	437	6700	1004
6	Jayashankar Bhoopalpally	9261	7826	3981	128	118	4227	3599
7	Jogulamba Gadwal	8113	5885	2848	598	209	3655	2230
8	Kamareddy	14469	12313	9722	317	0	10039	2274
9	Karimnagar	16865	15374	17523	1065	1541	20129	-4755
10	Khammam	21588	18435	17992	832	1769	20593	-2158
11	Komaram Bheem Asifabad	7591	5143	4239	35	0	4274	869
12	Mahabubabad	11928	9129	5136	627	0	5763	3366
13	Mahabubnagar	24242	18594	13912	1294	1197	16403	2191
14	Mancherial	13413	10585	8106	609	812	9527	1058
15	Medak	11759	10204	8103	744	596	9443	761
16	Medchal	47925	40203	37699	1609	3113	42421	-2218
17	Nagarkurnool	12458	9469	6816	654	0	7470	1999
18	Nalgonda	22665	20744	16045	1584	770	18399	2345
19	Nirmal	10230	9111	7550	271	120	7941	1170
20	Nizamabad	25942	23609	19726	1491	1523	22740	869
21	Peddapalli	11910	9918	6962	936	0	7898	2020
22	Rajanna Sircilla	8454	7158	4994	287	407	5688	1470
23	Ranga Reddy	49936	41690	38420	1552	5050	45022	-3332
24	Sangareddy	22523	19670	12205	2232	1672	16109	3561
25	Siddipet	16898	14730	11390	668	941	12999	1731
26	Suryapet	18363	10644	8910	258	1597	10765	-121
27	Vikarabad	16322	11605	8656	256	133	9045	2560
28	Wanaparthy	10381	7114	6997	313	492	7802	-688
29	Warangal (Rural)	10343	8964	6113	214	485	6812	2152
30	Warangal (Urban)	18518	16911	21179	1332	2691	25202	-8291
31	Yadadri Bhuvanagiri	12268	9803	6643	890	789	8322	1481
	TOTAL	**597064**	**480831**	**399377**	**26594**	**31040**	**457011**	**23820**

(iv) Demand / supply analysis:

According to NSDC -Accenture District wise Skill gap study, during the period 2017-2022 in the organized sectors buildings and construction, tourism, hospitality and travel trade, banking and financial services, mining and quarrying and manufacturing products such as chemicals and pharmaceuticals, metals and metal products, textile and leather and transportation and logistics are expected to drive incremental requirement of skilled manpower.

Sl No	Sector	Districts
1	Tourism	Rangareddy, Nalagonda, Karminagar, Warangal
2	Banking & Finance	Hyderabad, Rangareddy
3	Information Technology	Hyderabad
4	Transport	Rangareddy, Hyderabad
5	Chemical, Pharmacy	Rangareddy, Medak, Nalgonda
6	Automobile	Rangareddy
7	Food Processing	Nizamabad
8	Construction	Hyderabad, Rangareddy, Medak
9	Textile	Karimnagar, Warangal
10	Infrastructure	Across the State

There is a need to look into the existing supply matrix, which is hypothesized to be in excess of what the market demand is. However, there are few new and niche areas that would need focus to fill the demand-supply gaps such as Robotics, Artificial Intelligence etc.

5. TECHNICAL EDUCATION IN TELANGANA – ROAD MAP

Government of Telangana identified 14 Thrust Areas on which lot of attention is given. It is important for perspective planning to be in tune with these thrust areas and ensure that the manpower requirement for these thrust areas must be made available in the medium and long run.

➢ Life Sciences—including Bulk Drugs, Formulations, Vaccines, Nutraceuticals, Biologicals, Incubation Centres, R&D facilities, and Medical Equipment.

➢ IT Hardware including Bio-Medical devices, Electronics, Cellular Communications, and FAB

➢ Precision Engineering, including Aviation, Aerospace, and Defence

➢ Food Processing and Nutrition Products including Dairy, Poultry, Meat, and Fisheries

➢ Automobiles, Transport Vehicles, Auto-Components, Tractors, and Farm Equipment

➢ Textiles and Apparel, Leather and Leather value-added products like Shoes, Purses.

➢ Plastics and Polymers, Chemicals and Petro-chemicals, Glass and Ceramics.

➢ FMCG and Domestic Appliances:

➢ Engineering and Capital Goods.

➢ Gems and Jewellery.

➢ Waste Management and Green Technologies

➢ Renewable Energy and Solar Parks

➢ Mineral-based and Wood-based Industries.

➢ Transportation/ Logistic Hub/Inland Port/ Container Depot

BALANCING THE NEED & NICHE THROUGH INSTITUTIONAL DEVELOPMENT IN TELANGANA

In view of the above thrust areas, the Technical Education in Telangana has to be synchronised to suit the needs of the region and beyond. The broad observations which have been mooted based on the above are as follows:

a) ENGINEERING

2016-2017			2017-2018		
Colleges	Seats	Vacant	Colleges	Seats	Vacant
215	71066	17002	201	66889	16631

A closer look at the number of engineering colleges reveals that almost 29000 number of seats are vacant in the State of Telangana and many requests for closure of colleges are being received from college managements. This can be attributed to the fact that the industry demand for the engineering programmes is continuing to be sluggish and is expected to be on similar lines and hence, there is an urgent need for revamping all the courses. There is a need to introduce courses which cater into the industry needs and prepare students for engineering careers for the future sceneries.

b) ARCHITECTURE

➢ The courses in this area viz., Architecture / Fine Arts have also shown a general decrease in enrolment, since already 10 colleges in the State of Telangana are offering such courses.

➢ It is further, noticed that there is a gradual demand shift towards emerging areas like gaming and simulation which are being offered by many private institutions as diploma/certificate courses. Hence, more institutions in this area are not required.

c) PHARMACY

Sl. No.	Courses	2016-2017			2017-2018		
		Colleges	Seats	Vacant	Colleges	Seats	Vacant
01.	Pharma.D & B.Pharmacy	121	7162	1420	125	7977	1218
03.	M.Pharmacy	107	4694	1298	95	2790	257

The above table clearly illustrates that while enrolment in the M.Pharm. courses drastically reduced, student enrolment in the B.Pharm. and Pharma.D courses have registered a marginal increase in the enrolment. Since the existing colleges are able to cater to the requirements, it is proposed not to sanction any new institutions in the next 2-3 years. (Add seats enrolment/Vacant & 2015-16 figures)

d) M.TECH COURSES

2016-2017			2017-2018		
Colleges	Seats	Vacant	Colleges	Seats	Vacant
143	10998	4997	82	5996	1260

There is all most 40% reduction in enrolment into M.Tech. Courses. Further, around 60 colleges have got low enrolment. Keeping this in view it is proposed that no more colleges may be permitted in the next 2 to 3 years.

e) M.B.A. COURSE

2016-2017			2017-2018		
Colleges	Seats	Vacant	Colleges	Seats	Vacant
305	32934	12174	295	31570	11370

The number of MBA colleges declined from 305 to 296 between 2016-17 and 2017-18. Further, the enrolment also is around 30,000 per year in the State of Telangana excluding PGDM course.

Many industry associations like CII, FICCI, NASSCOM and others have often expressed the view that the MBA programmes should be more sector specific like retail, health and hospitality, real estate and infrastructure etc. and that there is a need to revamp the entire course structure to suit the requirements of industry needs. Hence, that there is no need for further enhancement of MBA colleges / seats, since the existing colleges would be enough to cater to demand for the next three years.

f) M.C.A. COURSE

2016-2017			2017-2018		
Colleges	Seats	Vacant	Colleges	Seats	Vacant
37	2436	424	41	2676	1093

The enrolment in MCA programmes reveals that the program is unable to attract students which indicates that the demand for the program is declining over the last few years.

6. CONCLUSIONS & RECOMMENDATIONS

Thus, the various concerns that arise from all the above data are summarized below for the consideration of the All India Council of Technical Education:-

Issue	Recommendation
• The AICTE has been sanctioning the Colleges routinely every year without actually assessing the 'Need' of the State. With a massive number of such Colleges established in the State, there is severe shortage of qualified Teaching faculty, which is seriously affecting the Quality of Education offered by many of these Institutions. Moreover, it is observed that a large number of seats are falling vacant every year as the total number of seats available is far more than the takers. During the year	• The AICTE may thus declare a holiday on establishment of New Technical Institutions from the Academic Year, 2018-19. The holiday applies not only with regard to establishment of New Engineering Colleges in the State but may also be extended to B.Pharmacy, MBA/MCA Institutions.

2016-17 for instance, there are about 32784 seats and during 2017-18, there are 29367 seats that remained vacant in the Engineering course.(based on the affiliations). With poor admissions, the 'financial viability' in running several Colleges is becoming a problem and thus making Colleges to offer poor Quality of Education, which is totally undesirable. In fact, in several Colleges, the admissions during last year and this year in Engineering and MCA programmes are just single digits. This situation has led to an unhealthy competition among the Colleges for admissions by wooing the students with all sorts of false promises. This is highly harmful to the Professional Educational System in the State

---

- As seen from in the Tables mentioned above, it reveals that there has been an unprecedented growth in technical education in the State during the past 10 years. While the emphasis during the above period has been on capacity expansion, no serious thought has been given to the other qualitative issues such as availability of qualified and experienced staff members; retraining the available staff members in emerging areas of technology, training the faculty on innovative and new techniques and equipments available in a global scenario and industry. All these consequently have contributed to the lack of standards of the Graduates coming out from the portals of these Technical Institutions. In fact many captains of the industry at various forums have always been highlighting on the lack of employability among these Graduates and in particular their communication and soft skills. A view has been expressed in various forums that only about 20% of these Graduates are employable and the remaining are required to be trained at a considerable cost by the industry employing them. This is a matter of serious concern.

- The AICTE may not sanction any Intake in excess of 60 per Section and 120 per Branch at UG level and 24 at PG level in any of the Programmes i.e. new or in the existing Colleges in the State and reduction of Intake from the current level in CSE, ECE, EEE & IT UG Programmes where vacancy position is seemingly high.

- In view of the adequate availability of Technical Institutions and intake in the State, in the interest of student's welfare, AICTE may not consider according approval for a Second Shift of Engineering Colleges in the existing Colleges in the State.

- In respect of B.Pharmacy colleges, AICTE should accord its approval by taking into consideration whether PCI has also accorded approval for the same or not. Such approval from PCI should also be earlier to 15th June of the respective Academic Year, so that the Academic Year and the admission schedule of the University /Government are not disturbed.

• Some districts does not have adequate number of colleges. Ex: Adilabad has only one Engineering college where as Rangareddy District has 122 engineering colleges.	• AICTE may give exception for Educationally Backward Regions • Establishment of New Government Technical Institutions in newly formed Districts to promote Quality Education to encourage the socio economically backward community of Telangana State, by not insisting for the infrastructure, like permanent building at the initial stage. The State may be permitted to make admissions and commence class work in the temporary locations, till the department takes all measures for providing sufficient infrastructure as per the norms of AICTE on the similar lines of concessions existing for the establishment of a Polytechnic in an Educationally Backward district.

OTHER RECOMMENDATIONS

In view of all the above and to improve the Quality of Education in Private, Unaided Colleges in the State of Telangana, it is recommended that:

- New Programmes may be sanctioned such as Mining, Granite, Textile, Pharmacy, Automobile, Civil Eng, Construction Technology based on New Technologies and needs of the Industry keeping in view the 14 Thrust Areas mentioned at Para 5 of Page 14 of this Plan.

- The students studying in Technical Institutions in Telangana are mostly from poor Socio Economic rural back ground. To support their family they need to work, as soon as they complete their course of study. To upgrade their qualification while working, there is need for Part -Time Education opportunity, as is offered at PG level. Hence, the AICTE may re-introduce the Part -Time Courses in Technical Institutions.

- Our UG/PG Courses to focus on manufacturing Technologies, particularly the emerging Technologies like 3D Manufacturing Technology, etc. Post Graduates have to definitely undertake higher level of research. There is lot of mismatch between the doctoral researches what we required and what is taking place.

- There is an absolute need to have a B.Ed. type course for Engineering Teachers to impart teaching skills to teach Engineering students.

- There is need to have multi-disciplinary Master's programmes with a scope for Doctoral Research.

- Introduction of flexible courses is the need of the hour. Courses which have a strong science content need to be introduced with an exposure to the Social Science field also.

- Skill Development – It is already introduced in Polytechnics and there is a need to introduce this in the Engineering College also.

- Further views on the procedural aspects of the Affiliations by the Universities vis-a-vis the AICTE Approvals are furnished below:

- New Institution/Course: New Institutions seeking approval, existing Institutions seeking Extension of Approval and Increase/Reduction of Courses submit application through online. Before grant of approval to any new Institution/Course or increase Intake to any particular College by AICTE, submission of NOC from the respective Affiliating University may be made as Mandatory. No conditional sanction may be given.

- Colleges not applying for Affiliation but obtaining Extension of Approvals from AICTE leads to the problem for the existing Students for validity of their Certificates. For instance, during the Academic Year 2016-17, there are around 60 Colleges, which have not applied for Affiliation to JNTUH, but some of the Colleges have got the Approvals from AICTE.

- The data submitted by the College to AICTE for approval may be accessible to the affiliating Universities in order to corroborate the data during the Affiliation Inspections by the University. This will be helpful for the Universities to verify Faculty norms as per AICTE.

- Some Colleges are running in leased accommodation showing rentals as expenditure of the College. The Telangana Admission and Fee Regulatory Committee have sought for clarification whether this can be allowed.

- Colleges are not producing "Occupancy Certificate", issued by the competent authorities. The University is receiving complaints from the stakeholders on this. Recently, AICTE has asked all the Technical Institutions to upload these Certificates in the portal. As it is made compulsory to submit Occupancy Certificate by all the existing AICTE Approved Institutions for getting extension of approval for the Academic Year 2017-18. As per the State Municipal Act 1994, Section 259, the State Government shall not be required to obtain any permission as provided by or under this Act in respect of erection, re-erection, construction, alteration or maintenance of buildings used or required for public service or for any public purpose which is the property or in the occupation of the Government concerned. Therefore, the AICTE may accord extension of approval to the existing Governments Polytechnics in the State without insisting for the Occupancy Certificate.

- Colleges having more than one section in a particular branch are not showing proportionate requirement of staff, laboratories and infrastructural facilities. Also, the Lateral Entry students and PIO students admitted strength is not taken into account by the Colleges in the calculation of the above facilities. This requires to be regulated.

- For increased strength of students in a particular discipline, in some cases more than four divisions are there but no proper facilities are there for doing Project Works, which hampers

the professional course content. AICTE must incorporate this in their verifications before giving approvals.

- Colleges having approved strength for two or more divisions per branch even when strength of actual admitted students is not sufficient for one division, results in the calculation of faculty requirement based on the approved strength being far above the realistic requirement. This needs to be addressed by the AICTE.

- As per the AICTE norms, for the appointment of Principal, the candidate must be a Professor or have 13 years of Teaching experience with Doctorate. There is no clarity whether the Principal is required to meet the API score of a Professor or not. AICTE needs to clarify this.

CONCLUSIONS

To conclude it is to be noted that, with the current manpower requirement of the State, primarily in the technical and knowledge sphere, the number of institutions are in excess and the demand for many conventional technical streams is declining. Hence, there is a need to maintain status-quo on approvals for new technical colleges by AICTE and relevant agencies for the year 2018-19. At the same time, it is important to focus on the quality of existing institutions by investing in teacher trainings, testing and experimentation infrastructure besides others. It is also to be noted that as we are moving towards knowledge economy, more thrust is to be given to new areas of research and development that are interdisciplinary in nature. Hence, there is a need to encourage such areas of knowledge by creating an ecosystem which fosters innovations, in teaching – learning processes, and also encourages entrepreneurship.

REFERENCES:

- NSDC Accenture Report
- CII reports
- Human Development Report 2017, April 2017
- AISHE report, MHRD 2016.

31.10.2017/14.00 hrs/final/PPTE-2018