

# **Government Funding for Technical Education in Orissa: How Effective is Orissa State Government?**

Compiled by Purna C. Mishra from various published reports

## **1. Quality Technical Education is key to Growth**

"The technical education system has played a significant role in the economic and technical development of India by producing quality and high-tech manpower. The role of the Government has been the most dominant in providing the basic thrust for creation of high quality technical manpower." – Planning Commission, India.

"Technical education in India contributes a major share to the overall education system and plays a vital role in the social and economic development of our nation." – All India Council of technical Education.

"A knowledge super power can only be built upon a foundation of a civil society that is nearly 100 per cent literate and has a capacity to absorb new and relevant knowledge. People are the capital in a knowledge-driven economy. Therefore a constant development of human capital with thrust on skill upgradation, generation, assimilation, dissemination and use of knowledge needs emphasis. It is essential to first focus on assessing our preparedness in this context. While some initiatives have been taken by the government to encourage development of knowledge industries, an overall strategy to assess and build the intellectual capital that will sustain the knowledge economy has to be evolved." – Indian Knowledge Super Power Task Force Report.

Three of the specific recommendation of the task force:

- Attract better teachers to degree colleges;
- Improve education in basic sciences at the undergraduate level (Physics, Chemistry, Mathematics, Biology etc.); and
- Raise the quality of engineering education.

Following is the recommendation of the Indian Knowledge Super Power Task to improve the Labor Skills and Training and an explanation of why an enhancing labor skill (focus on quality technical education) is essential for higher growth that leads to substantial reduction in poverty.

- 1.1. While faster GDP growth is necessary to generate a demand for labor, it can only be achieved if the labor force is sufficiently skilled. This is especially so if the growth is to come from expansion of more labor using sectors, which would generate a large demand for skills in all sectors. Unfortunately, the skill endowment of India's labor force leaves a great deal to be desired. Almost 44% of the labor force in 1999-2000 was illiterate and only 33% had schooling of secondary education and above. The latter category includes all those who have some secondary school education even if they did not complete secondary school. The percentage of those who completed secondary

school would be significantly lower. The position in relation to vocational skills is even more alarming. Only 5% of labor force in the 20-24 age category has vocational skills compared with 28% in Mexico and as much as 96% for Korea.

- 1.2. Part of the problem is a strong preference among the young for general education over vocational training because general education has traditionally been seen as a route to acquiring highly valued government jobs. This has led to a low demand for vocational training courses. At the same time, supplying vocational training is problematic. The physical capacity of the existing training institutes is limited. The quality of the training provided is also not up to the mark. Training courses in government run institutes often are not reflective of market demand and employers frequently perceive that the skill levels of graduates of these institutes are inadequate.
- 1.3. Correcting these deficiencies calls for action on several fronts. Given the continuing low levels of enrollment and high drop out rates in middle and secondary school, there can be no doubt that a major expansion in general education is necessary. However, at the same time efforts should be made to increase the vocational content of education. More generally, the education system must evolve in a manner which places greater emphasis on acquiring marketable skills. Additional resources should be provided to upgrade the facilities of **ITIs** in the public sector, and they should be restructured to provide much greater interaction with industry and joint management with private sector.
- 1.4. At the upper end of the educational spectrum, the capacity for producing trained engineers needs to be expanded. Given the heavy demand for graduates of IITs abroad and the likelihood that many future graduates will continue to migrate, the capacity of the existing institutes should be expanded in order to meet the internal demand for high skills. There is a case for substantially expanding the capacity of existing IITs, **as well as increasing** the total number of IITs by creating an IIT in each major state.
- 1.5. The role of the private sector in providing education and training should be aggressively encouraged. Private training institutes have done well in many sectors notwithstanding that there have been problems of assuring quality. Existing policies regarding private sector investment in education and training need to be reviewed to remove impediments which hamper the flow of private resources into this sector. The role of the government must change from being a direct provider of services to include being a facilitator and source of certification.

According to an analysis of Planning Commission, the man power requirement at a 6% (base line), 8% (high), and 9% (rapid) growth, the Indian economy needs an additional trained and skilled man power of 100 million people to sustain the rapid growth. It Close to 8% of Indian population would gain employment in higher paying manufacturing and information technology sectors.

**Employment Projections: Rapid Growth (9.0% growth)**

(million)

Industry	Employment in	Projected Employment	
	1999-2000	2007	2012
Agriculture	237.56	244.77	250.70
Mining & Quarrying	2.27	2.27	2.27
Manufacturing	48.01	56.62	64.49
Electricity, Gas & W.S.	1.28	1.28	1.28
Construction	17.62	25.22	33.45
Trade	37.32	51.61	65.08
Transport, Storage & Comm.	14.69	19.55	24.24
Financial Services	5.05	7.27	9.62
Community Social & Pers. Services	33.20	39.22	44.03
<b>Total Employment</b>	<b>397.00</b>	<b>447.80</b>	<b>495.18</b>
Labour Force A (1.5% growth)	406.05	452.33	487.29
Labour Force B (1.8% growth)	406.05	462.12	505.23
Unemployment Rate(%)			
With Labour Force A	2.23	1.00	-1.62
With Labour Force B	2.23	3.10	1.99

Table1: Employment Projection

## **2. Quality Technical Education As Supported by the Government of Orissa**

“The State of Orissa is one of the very few States in the country where the technical education is under the direct administrative control of the Department of Industries. For rapid industrialization, the role of technical education need not be overemphasized. The Industrial Policy 1996 has stressed the need for development of technical education and also encouraging participation of the private sector in the area so that the existing and upcoming industries do not face shortage of adequately skilled manpower.” – Directorate of technical Education and Training, Orissa.

To facilitate quality technical education at the degree level, the Orissa Government set up the Biju Patnaik University of Technology (BPUT), with its headquarters in Rourkela. The main objective of instituting the University is to ensure a high quality of students coming out of the technical colleges through a common curriculum and uniform evaluation. The Directorate of technical Education Cuttack ensures the quality of the education at the ITI and Polytechnic level. The specific BPUT objectives to enhance the quality of technical education at the degree level are to promote and facilitate quality teaching and research that would ensure a world class brand name in technical man power needed for industry and academia.

In this compilation we will review the state of technical education in Orissa and the commitment of the state government towards supporting a quality technical education. We will be analyzing the data as a series of tables with commentaries to highlight the performance of the state towards meeting the objectives and commitments.

There has been an impressive growth in technical education in terms of capacity expansion in Orissa over the last 10 years both at the degree and ITI level. Though the sector has expanded substantially in terms of increased number of institutions as well as inclusion of new courses, we will analyze if the quality of the education and level of funding is consistent with the other states of India. We will also analyze if the quality of education is available uniformly across the state (both geographically and within a specific region between the rural and urban areas).

Writing to the chief ministers of the 12 large states, Mr. Arjun Singh, the Cabinet Minister in charge of Human Resources, has suggested the following corrective measures to which he felt would improve the state of technical education in the country to meet the expected 9%+ growth rate :

- Establishment of new institutions, especially in backward areas,
- Expansion of intake in existing institutions,
- Opening new branches and courses, especially in emerging areas,
- Grant of incentives for establishment of bona-fide non-government institutions of good quality and non commercial nature,
- Program of quality improvement of technical education, and
- Improvement and expansion of secondary education

The Ministry has also advised the All India Council of Technical Education to take special steps to promote expansion of Technical Education in these 12 large States. To enhance the quality of education, the central government in addition to other programs has started an aggressive TEQIP and STTP programs to upgrade the quality of technical education in both center and state funded technical institutes. We will review the commitment of the Orissa Government towards the TEQIP and STTP programs.

State	Population in Lakh (2001 Census)	Population % by States	Rank
Andhra Pradesh	762.1	7.41%	5
Arunachal Pradesh	10.98	0.11%	27
Assam	266.56	2.59%	14
Bihar	829.99	8.07%	3
Chhatisgarh	208.34	2.03%	17
Goa	13.48	0.13%	26
Gujarat	506.71	4.93%	10
Haryana	211.45	2.06%	16
Himachal Pradesh	60.78	0.59%	21
Jammu & Kashmir	101.44	0.99%	19
Jharkhand	269.46	2.62%	13
Karnataka	528.51	5.14%	9
Kerala	318.41	3.10%	12
Madhya Pradesh	603.48	5.87%	7
Maharastra	968.79	9.42%	2
Manipur	22.94	0.22%	24
Meghalaya	23.19	0.23%	23
Mizoram	8.89	0.09%	30
Nagaland	19.9	0.19%	25
Orissa	368.05	3.58%	11
Punjab	243.59	2.37%	15
Rajasthan	565.07	5.49%	8
Sikkim	5.41	0.05%	31
Tamil Nadu	624.06	6.07%	6
Tripura	31.99	0.31%	22
Uttar Pradesh	1661.98	16.16%	1
Uttaranchal	84.89	0.83%	20
West Bengal	801.76	7.79%	4
Andaman & Nicobar Island	3.56	0.03%	32
Chandigarh	9.01	0.09%	29
Dadra & Nagar Haveli	2.2	0.02%	33
Daman & Diu	1.58	0.02%	34
Delhi	138.51	1.35%	18
Lakshadweep	0.61	0.01%	35
Pondicherry	9.74	0.09%	28
India	10287.41	1.00	

Table 2: Population Distribution

State	10th Plan 2002-07	Annual Plan 2002-03	Annual Plan 2003-04	Annual Plan 2004-05	Annual Plan 2005- 06	Annual Plan 2006- 07	% by States	Rank
Andhra Pradesh	22125.50	647.00	753.50	6600.00	6550.00	7575.00	5.50%	5
Arunachal Pradesh	450.00	0.00	0.00	0.00	0.00	450.00	0.11%	34
Assam	3562.50	955.00	635.00	730.00	530.00	712.50	0.89%	25
Bihar	9167.56	1100.00	1966.11	1716.10	2601.35	1784.00	2.28%	16
Chhatisgarh	9484.38	813.00	1067.00	1676.00	1853.58	4074.80	2.36%	15
Goa	6848.84	1227.00	1214.82	1252.12	1500.90	1654.00	1.70%	20
Gujarat	38770.28	5840.00	5326.28	5104.00	12500.00	10000.00	9.64%	2
Haryana	19220.00	2920.00	2400.00	2900.00	5000.00	6000.00	4.78%	9
Himachal Pradesh	4913.63	794.00	325.23	634.91	1443.49	1716.00	1.22%	24
Jammu & Kashmir	14260.68	2477.60	2887.70	3499.96	4312.26	1083.16	3.55%	12
Jharkhand	10850.00	0.00	0.00		4000.00	6850.00	2.70%	14
Karnataka	21673.90	510.00	611.70	3499.48	8452.72	8600.00	5.39%	6
Kerala	23642.20	3700.00	3238.00	3921.50	6716.70	6066.00	5.88%	4
Madhya Pradesh	19010.69	2638.00	3242.60	3295.56	4742.50	5092.03	4.73%	10
Maharashtra	42355.92	4703.00	3173.58	3005.00	14402.99	17071.35	10.53%	1
Manipur	604.00	124.00	130.00	130.00	100.00	120.00	0.15%	33
Meghalaya	5415.00	420.00	1100.00	2260.00	1335.00	300.00	1.35%	21
Mizoram	5106.76	1025.00	1300.00	1429.76	1172.00	180.00	1.27%	22
Nagaland	6911.00	1039.00	1039.00	1790.00	2119.00	924.00	1.72%	18
Orissa	2272.64	38.00	586.42	386.42	610.00	651.80	0.56%	29
Punjab	1769.77	388.00	301.70	337.34	285.40	457.33	0.44%	30
Rajasthan	5066.54	241.00	361.20	546.31	2461.52	1456.51	1.26%	23
Sikkim	11530.50	1042.00	1842.00	2380.00	3006.50	3260.00	2.87%	13
Tamil Nadu	6885.36	88.00	207.20	360.94	4852.15	1377.07	1.71%	19
Tripura	2611.50	465.00	223.53	373.92	619.30	929.75	0.65%	27
Uttar Pradesh	32492.00	765.00	7510.00	5500.00	7654.00	11063.00	8.08%	3
Uttaranchal	17050.83	1613.00	1944.63	2729.37	3894.83	6869.00	4.24%	11
West Bengal	20856.62	1224.00	520.38	1645.34	6782.70	10684.20	5.18%	8
Andaman & Nicobar Island	2705.00	715.00	1000.00		0.00	990.00	0.67%	26
Chandigarh	2503.75	395.00	508.00	603.00	497.00	500.75	0.62%	28
Dadra & Nagar Haveli	994.00	193.00	193.00	204.00	204.00	200.00	0.25%	31
Daman & Diu	893.00	149.00	139.00	149.00	200.00	256.00	0.22%	32
Delhi	21630.00	2788.00	3662.00	3871.00	5019.00	6290.00	5.38%	7
Lakshadweep	0.00	0.00	0.00		0.00	0.00	0.00%	35
Pondicherry	8623.67	1473.79	1474.84	2528.80	1458.48	1687.76	2.14%	17

Table 3: Annual Plan for Technical Education by States in Lakh Rupees (in 10th. Plan)

Highlighted in Yellow: Average as actuals numbers were not available

State	10th Plan 2002-07 in Lakh Rupees	Population in Lakh	Funding for Technical Education per Person (In Rupees)	Rank
Andhra Pradesh	22125.50	762.10	29.03	25
Arunachal Pradesh	450.00	10.98	40.98	22
Assam	3562.50	266.56	13.36	29
Bihar	9167.56	829.99	11.05	30
Chhatisgarh	9484.38	208.34	45.52	19
Goa	6848.84	13.48	508.07	6
Gujarat	38770.28	506.71	76.51	17
Haryana	19220.00	211.45	90.90	14
Himachal Pradesh	4913.63	60.78	80.84	16
Jammu & Kashmir	14260.68	101.44	140.58	13
Jharkhand	10850.00	269.46	40.27	23
Karnataka	21673.90	528.51	41.01	21
Kerala	23642.20	318.41	74.25	18
Madhya Pradesh	19010.69	603.48	31.50	24
Maharashtra	42355.92	968.79	43.72	20
Manipur	604.00	22.94	26.33	26
Meghalaya	5415.00	23.19	233.51	11
Mizoram	5106.76	8.89	574.44	4
Nagaland	6911.00	19.90	347.29	8
Orissa	2272.64	368.05	6.17	34
Punjab	1769.77	243.59	7.27	33
Rajasthan	5066.54	565.07	8.97	32
Sikkim	11530.50	5.41	2131.33	1
Tamil Nadu	6885.36	624.06	11.03	31
Tripura	2611.50	31.99	81.63	15
Uttar Pradesh	32492.00	1661.98	19.55	28
Uttaranchal	17050.83	84.89	200.86	10
West Bengal	20856.62	801.76	26.01	27
Andaman & Nicobar Island	2705.00	3.56	759.83	3
Chandigarh	2503.75	9.01	277.89	9
Dadra & Nagar Haveli	994.00	2.20	451.82	7
Daman & Diu	893.00	1.58	565.19	5
Delhi	21630.00	138.51	156.16	12
Lakshadweep	0.00	0.61	0.00	35
Pondicherry	8623.67	9.74	885.39	2
India	402258.02	10287.41	39.10	

Table 4: Funding for Technical Education per Person in Rupees

State	Government Engineering Colleges (including Aided), Excluding Central Government Funded Institutes (NITs, IITs, and others) as of 2004					
	Total Number	Intake	Intake % by States	Rank by Intake %	Number of Seats per One Lakh People	Rank by Number of Seats per One Lakh People
Andhra Pradesh	7	3065	4.37%	10	4.02	21
Arunachal Pradesh	0	0	0.00%	28	0.00	29
Assam	2	597	0.85%	20	2.24	26
Bihar	4	641	0.91%	19	0.77	28
Chhatisgarh	5	1120	1.60%	14	5.38	15
Goa	1	320	0.46%	23	23.74	5
Gujarat	17	5934	8.46%	3	11.71	11
Haryana	4	996	1.42%	17	4.71	18
Himachal Pradesh	2	180	0.26%	24	2.96	24
Jammu & Kashmir	1	160	0.23%	25	1.58	27
Jharkhand	1	841	1.20%	18	3.12	23
Karnataka	9	9359	13.35%	2	17.71	6
Kerala	38	10215	14.57%	1	32.08	4
Madhya Pradesh	11	4770	6.80%	5	7.90	12
Maharastra	14	4082	5.82%	8	4.21	20
Manipur	1	115	0.16%	27	5.01	16
Meghalaya	0	0	0.00%	28	0.00	29
Mizoram	1	120	0.17%	26	13.50	10
Nagaland	0	0	0.00%	28	0.00	29
Orissa	5	1085	1.55%	16	2.95	25
Punjab	10	3866	5.51%	9	15.87	8
Rajasthan	8	2518	3.59%	11	4.46	19
Sikkim	1	480	0.68%	22	88.72	2
Tamil Nadu	9	4255	6.07%	7	6.82	13
Tripura	0	160	0.23%	25	5.00	17
Uttar Pradesh	23	5232	7.46%	4	3.15	22
Uttaranchal	5	1260	1.80%	13	14.84	9
West Bengal	17	4719	6.73%	6	5.89	14
Andaman & Nicobar Island	0	0	0.00%	28	0.00	29
Chandigarh	5	1089	1.55%	15	120.87	1
Dadra & Nagar Haveli	0	0	0.00%	28	0.00	29
Daman & Diu	0	0	0.00%	28	0.00	29
Delhi	6	2385	3.40%	12	17.22	7
Lakshadweep	0	0	0.00%	28	0.00	29
Pondicherry	1	539	0.77%	21	55.34	3
India	208	70103	1		6.81	

Table 5: Government Engineering Colleges by States



State	Government ITIs as of July 24, 2003					
	Total Number	Intake	Intake % by States	Rank by Intake %	Number of Seats per One Lakh People	Rank by Number of Seats per One Lakh People
Andhra Pradesh	91	23679	6.08%	5	31.07	23
Arunachal Pradesh	2	368	0.09%	30	33.52	20
Assam	24	4536	1.17%	19	17.02	30
Bihar	28	10256	2.63%	12	12.36	34
Chhatisgarh	77	8456	2.17%	15	40.59	17
Goa	11	2652	0.68%	22	196.74	2
Gujarat	135	69140	17.76%	1	136.45	4
Haryana	80	13301	3.42%	10	62.90	12
Himachal Pradesh	55	5361	1.38%	18	88.20	8
Jammu & Kashmir	38	4332	1.11%	20	42.71	16
Jharkhand	14	2664	0.68%	21	9.89	35
Karnataka	114	19596	5.03%	6	37.08	19
Kerala	82	15136	3.89%	8	47.54	15
Madhya Pradesh	136	19538	5.02%	7	32.38	22
Maharastra	347	65582	16.85%	2	67.69	10
Manipur	7	540	0.14%	26	23.54	26
Meghalaya	5	622	0.16%	25	26.82	24
Mizoram	1	294	0.08%	31	33.07	21
Nagaland	3	404	0.10%	27	20.30	28
Orissa	27	6644	1.71%	16	18.05	29
Punjab	108	14095	3.62%	9	57.86	14
Rajasthan	90	9008	2.31%	14	15.94	31
Sikkim	1	140	0.04%	34	25.88	25
Tamil Nadu	67	23756	6.10%	4	38.07	18
Tripura	4	400	0.10%	28	12.50	33
Uttar Pradesh	184	38468	9.88%	3	23.15	27
Uttaranchal	55	5912	1.52%	17	69.64	9
West Bengal	48	11924	3.06%	11	14.87	32
Andaman & Nicobar Island	1	220	0.06%	33	61.80	13
Chandigarh	2	1016	0.26%	24	112.76	6
Dadra & Nagar Haveli	1	228	0.06%	32	103.64	7
Daman & Diu	2	388	0.10%	29	245.57	1
Delhi	14	9252	2.38%	13	66.80	11
Lakshadweep	1	96	0.02%	35	157.38	3
Pondicherry	7	1256	0.32%	23	128.95	5
India	1862	389260	1		37.84	

Table 6: Government ITIs by States

Comparison Matrix							
State	Population	Funding for Technical Education	Funding for Technical Education per Person	Intake for Engineering Degree	Number of Seats in Engineering per One Lakh People	Intake for ITI	Number of Seats in ITI per One Lakh People
Andhra Pradesh	5	5	25	10	21	5	23
Arunachal Pradesh	27	34	22	28	29	30	20
Assam	14	25	29	20	26	19	30
Bihar	3	16	30	19	28	12	34
Chhatisgarh	17	15	19	14	15	15	17
Goa	26	20	6	23	5	22	2
Gujarat	10	2	17	3	11	1	4
Haryana	16	9	14	17	18	10	12
Himachal Pradesh	21	24	16	24	24	18	8
Jammu & Kashmir	19	12	13	25	27	20	16
Jharkhand	13	14	23	18	23	21	35
Karnataka	9	6	21	2	6	6	19
Kerala	12	4	18	1	4	8	15
Madhya Pradesh	7	10	24	5	12	7	22
Maharastra	2	1	20	8	20	2	10
Manipur	24	33	26	27	16	26	26
Meghalaya	23	21	11	28	29	25	24
Mizoram	30	22	4	26	10	31	21
Nagaland	25	18	8	28	29	27	28
Orissa	11	29	34	16	25	16	29
Punjab	15	30	33	9	8	9	14
Rajasthan	8	23	32	11	19	14	31
Sikkim	31	13	1	22	2	34	25
Tamil Nadu	6	19	31	7	13	4	18
Tripura	22	27	15	25	17	28	33
Uttar Pradesh	1	3	28	4	22	3	27
Uttaranchal	20	11	10	13	9	17	9
West Bengal	4	8	27	6	14	11	32
Andaman & Nicobar Island	32	26	3	28	29	33	13
Chandigarh	29	28	9	15	1	24	6
Dadra & Nagar Haveli	33	31	7	28	29	32	7
Daman & Diu	34	32	5	28	29	29	1
Delhi	18	7	12	12	7	13	11
Lakshadweep	35	35	35	28	29	35	3
Pondicherry	28	17	2	21	3	23	5

Table 7: Ranking by States

State	2005-06 Revised Plan Outlay			2006-07 General Plan Outlay		
	per Person in Rs.	Rank	% to Average	per Person in Rs.	Rank	% to Average
Andhra Pradesh	93.52	13	83.15%	98.32	15	73.92%
Assam	129.36	10	115.01%	129.37	10	97.27%
Bihar	59.20	17	52.64%	92.29	16	69.39%
Chhatisgarh	399.18	1	354.92%	460.55	2	346.25%
Gujarat	133.99	9	119.13%	145.98	9	109.75%
Haryana	137.46	8	122.22%	171.55	8	128.97%
Himachal Pradesh	287.42	4	255.55%	427.91	3	321.72%
Jammu & Kashmir	390.91	2	347.56%	290.60	4	218.48%
Jharkhand	188.90	7	167.95%	224.34	5	168.66%
Karnataka	205.00	5	182.27%	214.63	6	161.36%
Kerala	50.51	20	44.91%	60.13	19	45.20%
Madhya Pradesh	195.49	6	173.82%	198.89	7	149.53%
Maharashtra	55.74	18	49.56%	81.84	17	61.53%
Orissa	78.93	15	70.18%	59.91	20	45.04%
Punjab	83.35	14	74.11%	107.07	13	80.50%
Rajasthan	108.75	11	96.70%	126.89	11	95.40%
Tamil Nadu	53.64	19	47.70%	70.97	18	53.36%
Uttar Pradesh	93.82	12	83.42%	112.63	12	84.68%
Uttaranchal	329.24	3	292.74%	659.06	1	495.50%
West Bengal	69.15	16	61.48%	100.88	14	75.84%
Average for the larger states	112.47			133.01		

Table 8: Expenditure in Education - Comparison Matrix among the larger states of India

After analyzing Tables 2-8, it can be concluded that Orissa has ranked consistently at the bottom in almost all measurements. The state is ranked

- 11<sup>th</sup>. Most populous in the country with 3.58% of the population
- Spent 0.56% of the total investment in technical education by all the states and union territories in 10<sup>th</sup> plan during 2002-07 and ranked 29<sup>th</sup> among the states and union territories in spending for technical education
- Spent Rs. 6.17 a year per person for technical education during the 10<sup>th</sup> plan and spent the least among all states and union territories where the states and territories spent in average Rs. 39.10 (634% more) a year per person on technical education
- Orissa provides 1.55% of the intake capacity for all government degree colleges for technical education in the country and ranks 16<sup>th</sup> in the country

- Orissa provides 2.95 seats for 1 Lakh people in government degree colleges for technical education while the all India average is 6.81 seats for 1 Lakh people and ranks near the bottom
- Orissa provides 1.71% of the intake capacity for all government ITIs for technical education in the country and ranks 16<sup>th</sup> in the country
- Orissa provides 18.05 seats for 1 Lakh people in government ITIs for technical education while the all India average is 37.84 seats for 1 Lakh people and ranks near the bottom

We reviewed the statistics to evaluate if the trend is changing in recent years as the government of Orissa is signing MOUs and claims of investment of \$60 Billions in US Dollars in the state. Our findings based on the numbers for 2005-06 and 2006-07:

- Orissa ranked 15<sup>th</sup> (spending Rs. 78.93) among the 20 largest states, which averaged Rs. 112.47 spent a year per person in education (including technical) during 2005-06,
- Orissa's 2006 - 2007 education (including technical) spending will decrease 24.1% (to Rs. 59.91 a year per person) from the previous 2005-2006 year , while the 20 larger states will on average increase spending 18.26% (to Rs. 133.01) , and Orissa will rank at the very bottom among the large 20 states.
- During 2006-07, Orissa will be spending less than 17 paise per person per day on education while the larger 20 states will be spending on average close to 37 paise per person per day (200%+)
- While the state claims an investment inflow of \$60 Billions in US Dollars to Orissa, it cannot raise \$375 millions in US Dollars a year in revenue during the next 5 years (as per Planning Commission internal memo in December 2006)

The leaders and people must question the probability of success for bringing \$60 Billions in US Dollars when the state cannot even raise \$375 Millions in US Dollars in revenue. Based on the sorry state of investment in technical education and infrastructure, the citizens of the state will not benefit from what investments there may be as most of the higher paying technical jobs will be taken by people from outside with better education and skills.

We also reviewed the central government funded TEQIP and STTP programs and evaluated how proactively the state, the BPUT technical university, Directorate of Technical Education, and various government and non government institutions took advantages or planned to take advantage of these two programs.

#### Highlights of the TEQIP Program:

- Central Government Funding: The program is funded by the Central Government.

- Centers of Excellence: In view of the large number of Institutions and the constraints on human, physical and financial resources, 17 to 20 well-performing institutions will be selected as Lead Institutions for achievement of the quality enhancement objectives and to diffuse benefits of their excellence throughout the system by developing synergistic networks between them and 50 to 60 neighboring Network Institutions. Some examples of sharing expertise and resources through networking are; Academic Sharing, Credit Transfer and Carry-over of Credits, Staff Development, Human Resources, Learning Resources and Library and Managerial Expertise, Joint Ventures, etc.
- Bottom- up Approach: The Project is designed in Program Mode with full freedom to institutions to prepare their own proposals.
- Merit-based Selection: Only the well-conceived proposals (as decided by a National Selection Committee) will be supported through the Project.
- Upgrading Existing Institutions: No new institutes are proposed to be set up under the Project. Only existing well-performing institutions meeting the pre-announced eligibility criteria would be able to participate.
- To be implemented in phases as a centrally coordinated multi-state, long-term program in overlapping phases. Under each phase, there will be 2 to 3 cycles of selection of well performing institutions.

Six states were selected to participate in the First Cycle of the First Phase of the Program based on their commitment and preparedness for the Project. The states were Haryana, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, and Uttar Pradesh. In the Second Cycle of the First Phase, seven additional states were selected to participate. The states were Andhra Pradesh, Gujarat, Jharkhand, Karnataka, Tamil Nadu, Uttaranchal, and West Bengal.

Based on the data on Table 9, it can be concluded that

- NIT Rourkela did not participate during the first cycle, and received the least funding among all the NITs in the country. NIT Rourkela lost funding of more than Rs. 10 Crores which could have been avoided by being as proactive as other leading NITs.
- The BPUT University and Directorate of Technical Education did not proactively submit proposals to be included in the program during the first two cycles. When the institutions in Orissa suffer from poor funding and infrastructure, losing opportunities like TEQIP questions the ability of the institutions in general in Orissa to compete effectively among their peers.

PROGRAM LIFE ALLOCATION OF CENTRALLY FUNDED INSTITUTIONS (Rs. in Crores)												
Category of Expenditure	NIT, Kurukshetra	NIT, Calicut	MANIT, Bhopal	MNNIT, Allahabad	VNIT, Nagpur	NIT, Hamirpur	NIT, Trichy	BRANIT, Jalandhar	NIT, Warrangal			
Investment Cost	18.040	20.070	16.037	16.700	17.644	15.578	16.877	19.330	17.290			
Incremental Operating Cost	1.800	0.470	2.855	1.885	2.464	2.727	2.541	1.233	2.910			
Networking	0.900	0.360	1.000	2.300	0.310	0.785	0.488	0.300	0.500			
Services to Community	0.190	0.040	1.000	0.115	0.230	0.460	0.994	0.040	0.300			
Grand Total	20.930	20.940	20.892	21.000	20.648	19.550	20.900	20.903	21.000			
Category of Expenditure	NIT, Surathkal	NIT, Jamshedpur	NIT, Srinagar	NIT, Durgapur	NIFFT, Ranchi	SVNIT, Surat	MNIT, Jaipur	NIT, Silchar	NIT, Rourkela			
Investment Cost	17.540	17.046	16.990	20.338	14.190	17.118	16.560	8.180	8.180			
Incremental Operating Cost	2.500	2.244	1.000	0.761	0.190	3.021	2.680	0.752	1.320			
Networking	0.600	0.500	2.450	0.100	0.140	0.400	0.560	0.860	0.300			
Services to Community	0.300	0.500	0.500	0.170	0.040	0.400	0.200	0.460	0.200			
Grand Total	20.940	20.290	20.940	21.369	14.560	20.939	20.000	10.252	10.000			
PROGRAM LIFE ALLOCATION OF STATE INSTITUTIONS FUNDED BY CENTRAL GOVERNMENT												
State	Number of Institutes	Investment in Rs. Crores	State	Number of Institutes	Investment in Rs. Crores							
Andhra Pradesh	12	151.35	Gujarat	6	85.7							
Haryana	5	32.94	Himachal Pradesh	3	7.94							
Jharkhand	4	34.37	Karnataka	14	186.31							
Kerala	6	61.51	Madhya Pradesh	7	50.45							
Maharashtra	17	298.81	Tamil Nadu	5	94.66							
Uttar Pradesh	13	201.9	Uttaranchal	5	41.48							
West Bengal	5	153.3										

Table 9: Central Government Funding under TEQIP Program

Highlights of the STTP Program: This program is to help institutions to receive grants from All India Council of technical Education ("AICTE") for staff development and seminars. Based on the data in tables 10 and 11 and other internal reports, it is believed that the number of proposed STTPs, for degree colleges and polytechnic institutions, is highest in the discipline of Computer Science, Engineering, and Information Technology. The Eastern region was least active. The analysis of data by state indicates that, in the year 2004-05, Orissa was one of the least active states. Maximum numbers of STTPs were from Tamil Nadu, Maharastra, and Karnataka. . It is quite surprising that Orissa, with its supposed focus on mining, metallurgy, and information technology, remained unrepresented. We must ask why a state like Orissa to would not take advantage of the STTP program. We wonder why BPUT and Directorate of Technical Education completely missed the opportunity to improve the quality of their faculties through better training. BPUT must take the leadership role in organizing several STTP sessions so that the faculties from government and private engineering colleges and polytechnics can learn state-of-the-art innovations and technology and stay current with the progress in their discipline.

State/Region	Arch	Civil	Elect	Eltx	Comp	Mech	Interdisc	Total
Arunachal Pradesh	-	-	-	-	-	-	1	1
Assam	-	1	-	-	-	1	2	4
Jharkhand	1	-	1	-	1	1	1	5
Orissa	-	-	-	-	-	1	1	2
Sikkim	-	-	-	-	-	-	1	1
West Bengal	-	-	1	-	1	1	-	3
<b>Eastern Region</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>16</b>
Andhra Pradesh	-	1	2	4	1	4	3	15
Karnataka	-	4	2	2	4	3	14	29
Kerala	1	2	1	2	2	1	7	16
Tamil Nadu	-	9	5	11	17	12	36	90
<b>Southern Region</b>	<b>1</b>	<b>16</b>	<b>10</b>	<b>19</b>	<b>24</b>	<b>20</b>	<b>60</b>	<b>150</b>
Gujarat	-	1	1	1	1	1	2	7
Madhya Pradesh	-	1	-	-	-	1	4	6
Maharashtra	1	4	3	4	4	5	8	29
<b>Western Region</b>	<b>1</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>14</b>	<b>42</b>
Delhi	-	-	2	-	1	-	1	4
Haryana	-	-	-	-	-	-	3	3
Himachal Pradesh	-	-	-	-	-	1	-	1
Punjab	-	-	1	1	1	-	5	8
Rajasthan	-	-	1	1	-	-	3	5
Uttar Pradesh	-	-	-	1	-	-	2	3
Uttranchal	-	1	-	-	-	-	1	2
<b>Northern Region</b>	<b>-</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>15</b>	<b>26</b>
<b>All India</b>	<b>3</b>	<b>24</b>	<b>20</b>	<b>27</b>	<b>33</b>	<b>32</b>	<b>95</b>	<b>234</b>

Arch: Architecture, Elect: Electrical, Eltx: Electronics, Comp: Computer, Mech: Mechanical, and Interdisc: Interdisciplinary.

Table 10: State-wise STTPs for Engineering College Faculties during 2004-05

State/Region	Arch	Civil	Elect	Eltx	Comp	Mech	Interdisc	Total
Bihar	-	-	-	-	1	-	1	2
West Bengal	-	-	-	-	-	1	-	1
<b>Eastern Region</b>	-	-	-	-	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>
Karnataka	1	1	-	2	1	1	2	8
Tamil Nadu	-	2	1	3	5	1	5	17
<b>Southern Region</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>2</b>	<b>7</b>	<b>25</b>
Gujarat	-	1	1	-	1	1	-	4
Maharashtra	-	1	1	1	-	1	5	9
<b>Western Region</b>	-	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>13</b>
Delhi	-	-	-	-	2	-	-	2
Punjab	-	-	-	-	1	1	1	3
Uttar Pradesh	-	-	-	1	-	-	-	1
<b>Northern Region</b>	-	-	-	<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>6</b>
<b>All India</b>	<b>1</b>	<b>5</b>	<b>3</b>	<b>7</b>	<b>11</b>	<b>6</b>	<b>14</b>	<b>47</b>

Arch: Architecture, Elect: Electrical, Eltx: Electronics, Comp: Computer, Mech: Mechanical, and Interdisc: Interdisciplinary.

Table 11: State-wise STTPs

It can be argued that the state neither invested to upgrade the quality of technical education nor took advantages of the programs offered by the center to upgrade facility and teachers training.

We also reviewed the statistics on the existing engineering degree colleges and concluded that the government has mostly failed to meet the mandate of the central government to improve technical education in the state and the country. None of the following six measures proposed by the HRD ministry has been either followed or employed; progress has been made in the right direction.

- Establishment of new institutions, especially in backward areas

The 19 backward districts have the bulk of the government engineering colleges and seats. If we include NIT Rourkela in the statistics, the backward districts have most of the government engineering colleges and seats. The newest government engineering college is planned in Keonjhar (one of the backward districts).

Only 2 private engineering colleges are located in the backward districts where the bulk of the industrial activities are concentrated, notably Angul, Jharsuguda, and Sundargarh. In fact, both Angul and Jharsuguda have no engineering colleges and this imbalance needs to be addressed.

Fifteen out of the thirty districts (50%) of Orissa do not have any engineering colleges either from government or private sources.

- Expansion of intake in existing institutions

The Government has not added additional intake capacity at the government engineering colleges. In fact, NIT Rourkela has one of the smallest intakes among the NITs. Since 50% of the intake is assigned to the home state, the government must strive to increase the intake capacity at NIT and other government engineering colleges.



- Opening new branches and courses, especially in emerging areas

Orissa has the smallest number of government engineering colleges and intake capacity (number of seats per 1 Lakh people). The government has just announced opening up of at least one ITI per block. The government must make the similar stand and open at least one government degree engineering colleges (preferably) in each and every district.

The Central Government must take a similar stand as she has taken in case of the North Eastern resource strapped states where she is helping setting up of national universities in those states. The core population of the backward districts of Orissa is mostly OBCs, SCs, and STs. The state is unable to invest in education and very few private institutions have incentives to open a quality university in these districts. The Central Government must establish a Central University in the KBK or Phulbani districts of Orissa to bring advanced education to these backward districts.

- Grant of incentives for establishment of bona-fide non-government institutions of good quality and non commercial nature

Reputed engineering colleges from the state must be given incentives to open additional campuses in districts where no engineering colleges exist today. Like Andhra Pradesh, Orissa must follow and give incentive to open facilities to teach communication and presentation to emerging technical professionals.

- Program of quality improvement of technical education

Strong emphasis must be given to stay proactive to compete under TEQIP, STTP, and other schemes. The BPUT University and Directorate of Technical Education must take a lead to improve the quality of teachers' training in the state. The administration must convince the HRD ministry to open a National Institute of Technical Teachers Training & Research (NITTTTR) inside the BPUT University campus or collaborate with the BPUT University to establish a campus in a geographically centered area to facilitate hassle free travel and communication (preferably close to Angul).

- Improvement and expansion of secondary education

Orissa spends less than 17 paisa per person per day to impart education. This is 50% of the average spent by the 20 larger states. The state audit bureau has given poor report to the performance of the implementation of the "Sarva Sikshya Avijan" program in the state. Unless the state and administration address this core issue, Orissa will stay the most backward state in the country.

District	Number of Government Engineering Colleges	Approved Intake in Government Engineering Colleges	Number of Private Engineering Colleges	Approved Intake in Private Engineering Colleges	Total Number of Engineering Colleges	Total Approved Intake
Angul	0	0	0	0	0	0
Balasore	0	0	1	240	1	240
Baragarh	0	0	1	218	1	218
Bhadrak	0	0	1	390	1	390
Bhubaneswar	1	300	11	4412	12	4712
Bolangir	0	0	0	0	0	0
Boudh	0	0	0	0	0	0
Cuttack	1	70	4	1210	5	1280
Deogarh	0	0	0	0	0	0
Dhenkanal	1	180	1	420	2	600
Gajapati	0	0	1	420	1	420
Ganjam	0	0	3	930	3	930
Jagatsinghpur	0	0	0	0	0	0
Jajpur	0	0	0	0	0	0
Jharsuguda	0	0	0	0	0	0
Kalahandi	0	0	0	0	0	0
Kendrapara	0	0	0	0	0	0
Keonjhar	1	90	0	0	1	90
Khurdha	0	0	2	570	2	570
Koraput	0	0	2	420	2	420
Malkanagiri	0	0	0	0	0	0
Mayurbhanj	0	0	1	450	1	450
Nabarangpur	0	0	0	0	0	0
Nayagarh	0	0	0	0	0	0
Nuapada	0	0	0	0	0	0
Phulbani	0	0	0	0	0	0
Puri	0	0	1	300	1	300
Rayagada	0	0	3	1280	3	1280
Sambalpur	1	280	0	0	1	280
Sonepur	0	0	0	0	0	0
Sundargarh	0	0	2	480	2	480
Total	5	920	34	11740	39	12660

Table 12: District-wise Distribution of Degree Engineering Colleges (highlighted districts have no engineering colleges)

Highlighted districts have no engineering colleges (50% of the total districts)

District	Number of Government Engineering Colleges	Approved Intake in Government Engineering Colleges	Number of Private Engineering Colleges	Approved Intake in Private Engineering Colleges	Total Number of Engineering Colleges	Total Approved Intake
Backward Districts	3	550	13	4400	16	4950
Other Districts (Including Bhubaneswar)	2	370	21	7340	23	7710
Total	5	920	34	11740	39	12660

Table 13: Degree Engineering Colleges

District	Number of Government Engineering Colleges	Approved Intake in Government Engineering Colleges	Number of Private Engineering Colleges	Approved Intake in Private Engineering Colleges	Total Number of Engineering Colleges	Total Approved Intake
Backward Districts	3	550	13	4400	16	4950
Other Districts (Excluding Bhubaneswar)	1	70	9	2628	10	2698
Bhubaneswar	1	300	11	4412	12	4712
Total	5	920	33	11440	38	12360

Table 14: Degree Engineering Colleges

### 3. Summary and Recommendation

The future of Orissa may be bleak. For the last 60 years, it has been at the bottom of every progress measurement chart. The state and administration must improve program implementation and enhance revenue collection to fund additional resources in education. Because the Central Government decides on royalty on mines and metals, Orissa has been losing additional revenues from mining and minerals. The Planning Commission has agreed to assign an additional amount in the 11<sup>th</sup> plan to compensate the state. The state administration must ask that this additional amount be spent on education, with a large portion devoted to technical and vocational education to prepare the citizens of the state to take advantage of the opportunities associated with the rapid growth in India.

It is most unfortunate that the typical "Chalta Hai" attitude has become the working motto of the administration, politicians, and the citizens. We must break loose of this attitude if we want to see strong or rapid growth in Orissa with a technology base and people to take advantage of the rapid growth. Signing MOUs and making loud claims of \$60 Billions in US dollars to build a bubble economy benefits neither the state nor the people in short or mid to long term. Execution of the already signed MOUs should be the priority and the administration must cease signing additional MOUs until they review and address why 90% of the signed MOUs have made very little progress and not seen the light of the day.