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BALANCING QUALITY AND QUANTITY IN HIGHER TECHNICAL EDUCATION: COMPARATIVE STUDY AND ANALYSIS OF FACTS*

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Abstract:

India although appears to be a developed country in term of GDP and its growth rate, yet it is far behind in education scenario. In last decades, in pace with globalization, India has opened the door of private investment in higher education. In such a state, there is a need for proper analysis and measure to lead India in educationally developed state. The article suggests how to proceed in that direction after careful analysis of world's related facts.

Key words: World ranking of universities, GDP, Private investment.

1. Introduction:

Compared to other socio-economic sectors, education particularly higher technical education involves huge complex and multidimensional issues that include demand & supply ratio, comparison of volume of production & quality of production, state versus private investment, affordability versus circumstantial forced for affordability etc. It is commonly believed particularly in the developing & under developed countries that their governments can not afford the higher cost of technical education. This observation is the major motivation for approving private investment in technical higher education. Thereby a step has been evolved to meet the growing demand for technical higher education mainly arisen out of i) brighter job opportunity after completion of job oriented technical courses and ii) increasingly higher population that has some bearing on the increased intake in tertiary education (The enrolment in tertiary education in 1970, 1985 and 1995 was 4.9, 6.0 and 6.5. Total numbers of graduate engineers produced in India were 41464, 44141 and 60749 respectively in 1990, 1992 and 1996.). Apparently there is nothing wrong with allowing private investment in higher technical education in the developing

countries so long the private education systems have meet the aspiration of the incumbents in terms of quality, efficiency, transparency and flexibility. Meeting the needs of learners is the important index of any education policy. But in the social context, context of education and in the context of individual countries' need; there are many issues that need to be carefully studied before any adopted policy is allowed to continue. The contexts referring to in the Indian scenario are: 1) is the private investment in technical education balanced geographically? 2) has it taken some if not equal but at least 80:20 ratio the consideration of all subjects of technical education? 3) has it applied at least 10% measure to guarantee "merit is not lost to money(huge cost in private system)" like that of quite transparent free or half free studentship of USA Universities? iv) is there really any measure to judge quality of private institute on global standard like that of Council of higher education of USA (the accreditation system in India at least to my mind has no way improved quality in private institute of technical education in general. I am not considering exceptional one or two institutes that are isolated in nature like Vellore Institute of Technology, Birla Institute of Technology, ICFAI University, Haldia Institute of Technology etc)?

2. Analysis on World's facts

In last few decades, India has taken part in huge private investments in higher technical education. A huge analysis of the private higher technical education

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in context of the questions raised above was made by this author in[1-3]. The studies based on facts and figures show that the answers to the questions are gracefully negative. It is clear that in USA the backbone of technical education system is the network of private Institutes and universities. But the pattern of those private institutes and universities comply with positive answers to the questions being raised. Therefore there is a need for finding the missing link of the two axis of Negative and Positive. Based on the findings there is a need to suggest measures so that Indian policy may change accordingly to make

its technical education system at par with USA. This is very imperative in context of quality education in broad context, as the measure of quality by few persons' and few subjects' and few regions' great achievements out of thousand aspirants in all sectors is surely a wrong approach that may be counter productive I would substantiate this problem with two pictures: Economy (GDP growth rate) Versus Education quality in broad aspect (position in world ranking of universities) as shown in table 1[4]. While china has got place in both column, India has no place in educational ranking.

Table-1:
GDP versus Educational standings of the countries

Table1: GDP versus Educational standings of the countries

GDP growth rate in world in 2006			Number of universities ranked in top 200 in world in 2005		
Rank	Country	Growth rate in %	Rank	Country	Number of universities in 200 rank
1	China	43.7	1	USA	54
2	India	6.4	2	UK	24
3	Russia	5.5	3	Australia	17
4	S Korea	5.2	4	China , Japan, Netherlands	10 (for each country)
5	Taiwan	4.3	5	France, Germany	9 (for each country)
6	Hong Kong	4.0	6	Canada	8
7	USA	3.6	7	Switzerland	7
Remarks: On GDP India is promising, On higher education India is diminishing					

In table 2, a list of best 500 universities/ institutes in 2004 and 2005 is given. A full account is given in fig 1 for 2004. It is seen that India degraded in quality compared to others in 2005 compared to 2004. This

signifies that India's progress in higher education is not impressive. This hard fact all positive minded and education loving people are to accept. At the same time, appropriate analysis and measure be taken to correct it.

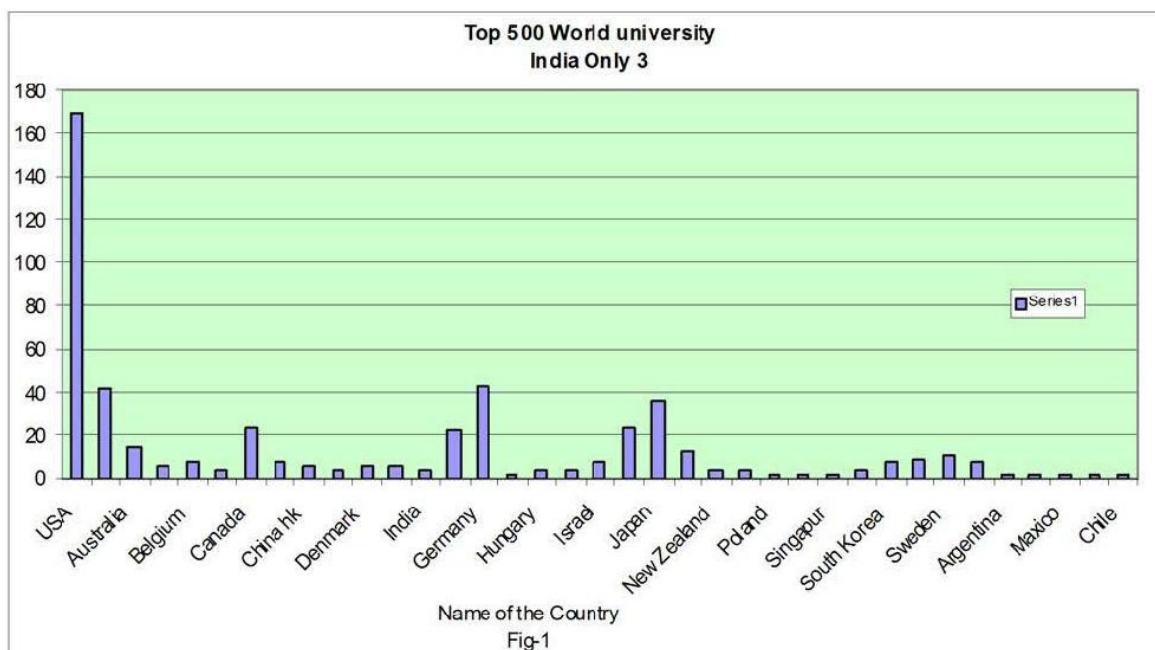


Table 2:
Academic Ranking of World Universities Statistics by Country

Co untry	In 2004			In 2005		
	Top 300	Top 400	Top 500	Top 300	Top 400	Top 500
U S A	119	139	170	119	140	168
U K	29	35	42	30	36	40
Japan	13	26	36	13	24	34
Germ any	27	37	43	23	33	40
C an ada	16	19	23	17	19	23
France	13	20	22	13	19	21
Sweden	9	9	10	9	11	11
Switzerland	6	7	8	6	7	8
N ether lands	10	11	12	9	11	12
A ustralia	8	11	14	9	10	14
I taly	10	16	23	9	18	23
I srael	4	6	7	4	6	7
D enmark	4	5	5	4	4	5
A ustr ia	3	4	5	2	4	6
F in land	2	4	5	2	2	5
N orway	1	3	4	2	3	4
R ussia	1	2	2	1	2	2
B elgium	6	7	7	6	6	7
C hina	6	13	16	6	15	18
S outh K orea	2	5	8	2	5	8
S pain	2	4	9	3	4	9
B razil	1	3	4	2	3	4

Country	In 2004			In 2005		
	Top 300	Top 400	Top 500	Top 300	Top 400	Top 500
Singapore	1	2	2	1	2	2
Mexico	1	1	1	1	1	1
New Zealand	2	2	3	1	2	5
South Africa	1	2	4	1	2	4
Hungary	1	1	3	1	2	2
Ireland	1	1	3	1	1	3
India	1	1	3		1	3
Argentina	1	1	1	1	1	1
Greece		2	2	1	2	2
Poland		2	2		2	3
Czech		1	1	1	1	1
Chile		1	1		1	1
Portugal			1			1
Turkey						2
Total	301	403	502	300	400	500

It is now established that in the age of competitive advantages, the improve human resources generation is the only sound strategy for the poor nations. In table 3, we have shown the people per universities of top 500 in respective countries. It is

found that India badly needs to increase its number in top 500 even to be at par with South Africa. Another very pertaining figure in table 3 found to be is India low public investment in education compared with other countries in the table

Table3:

Country	No. of Universities/ Institute in top 500 (A)	Population per top 500 Universities / Institutes in respective country	GDP (Current US\$) X 100000	Total Public expenditure on education as % GDP
USA	168	57330	97648000	5.6
UK	40	1515229	14393480	5.3
Japan	34	3748930	47460680	3.6
Germany	40	2060557	18702780	4.8
Canada	23	1439084	7137957	
France	21	2898864	13084010	5.8
Finland	5	1046274	1199051	6.4
China	18	72998873	10807410	
South Africa	4	11046909	1328776	

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Another striking figure that requires immediate attention of planners is as below:

Total numbers of foreign students coming to India were 12665 and 9027 in 1992 and 1996 respectively. Decreasing over years: What does it signify?

In this context and in the context of the present education scenario of India, thus there is emergent need

- to study how the USA is maintaining highest credential in education even though the major education is on private investment.
- to study the difference of technical education system in policies, implementation, motive and aspiration in India with that in USA.
- to study the imbalances in different forms if existing in technical education in USA and if not how the imbalances are avoided and its pattern matching with that of India if any and the reasons there of to test a few hypotheses: (i) the private technical education in India has negatively twisted because of : $NF = \alpha \cdot C_1 + \beta \cdot C_2 + \gamma \cdot C_3$ where c_1 , c_2 and c_3 are respectively each a measure of the profit only making motives of sponsors, the wide rich-poor gap & region wise development disparity and the faulty government control in terms of “how many you have for getting accreditation rather than what quality you have”, (ii) NF will be considerably reduces if USA policies are selectively

employed, (iii) NF will be considerably reduced in India if people’s investing in education has a minimum educational quality as this is supposedly to be clear after this study in USA.

- developing a model for balancing quality with quantity in technical education without as far as possible any imbalances & disparity over region, subjects and students’ affordability.

Based on suggested studies and findings thereon, India needs to take corrective and appropriate measures to be in front run of education system. Being a developed in economic scale only is really not a sustainable and real development.

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