QUALITY IN HIGHER EDUCATION: CHALLENGES FOR RESEARCH AND SCIENCE & TECHNOLOGY IN INDIA

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ABSTRACT

The challenge of higher education in India is not merely to improve Gross Enrolment Ratio (GER) but to foster quality research and S&T inorder to ensure higher employability for Indians in the global space. India after liberalization has witnessed several pioneering initiatives in improving accessibility through Sarva Sikshya Abhiyan (SSA) and massive involvement of the private sector in technical education. However infrastructural deficit of State universities and quality shortfall in terms of research and publication has led to constitution of several commissions. The Planning Commission has played a stellar role in terms of allocation in pushing the agendas of Equity and Excellence. The paper traces evolution of policy concerns towards research, science & technology and major recommendations lately to foster this process. While bringing out the dismal position in regard to quality of research papers, the paper fervently argues for reorientation in policy initiatives like Corporate Social Responsibility (CSR), a more pragmatic Foreign Direct Investment (FDI) policy & Public Private Partnership (PPP) model, as the way forward to foster quality in higher education and improve Human Development Index (HDI).

Keywords: CSR, FDI, GER, HDI, PPP

I INTRODUCTION

Higher inclusive growth through major social sector programmes like MNREGA, Mid Day Meal Scheme, Sarva Sikshya Abhiyan have highlighted India's concern for improving Human Development Index. The centrality of education in the wake of liberalization has been reinforced by Right to Primary Education (2001) and substantial increase in Gross Enrolment Ratio in the higher education sector from 9.7% (2000) to 16.7% (2013). There have been several committees like Kothari Commission, Sam Pitroda's Knowledge Commission (2009) and Narayan Murthy Committee (2012) who have emphasized the role of Science and Technology, global partnership, industry-academia partnership to prop-up research in science and technology and establish world class universities and knowledge clusters in India. Planning commission has been a major player in allocating substantial funding to technical institutions like IITs, ISCs and IIMs who are at the front of quality. The recent decision to windup this behemoth without putting place a credible alternative is causing serious concern.

The Paper Examines

- Evolution of Policy Concerns in Science and Technology & Research in Higher Education

- Major Recommendations by Committees/Commission: 200-2012
- The Road Ahead after Dismantling of the Planning Commission

II EVOLUTION OF POLICY CONCERNS IN SCIENCE AND TECHNOLOGY & RESEARCH IN HIGHER EDUCATION

The Kothari Commission (1966) put the foot prints for a cogent higher education policy for India and had highlighted the centrality of science & technology and research & education as the fulcrum of higher education policy. Its thrust was to improve productivity; treat science as a basic component in education and improve research in Science &Technology. This was endorsed by the then education minister, the eminent legal luminary Shri M.C. Chagla. This gave birth to a number of quality education institutions like Indian Institute of Science, mentored by Nobel Laureate Dr. C.V. Raman, IITs and IIMs which were predominantly funded by the planning commission. The BARC headed by Dr. Homi Bhaba also had a significant connect to the International Atomic Energy Commission, Vienna for state of art research in the field of atomic energy. The ISRO under Dr. Vikram Sarabhai also had significant interaction with Space Research Centres in the erstwhile USSR. Dr. M.S. Swaminathan collaborated with Dr. Norman Borlaug, the Nobel Prize winner, for fostering high quality research in wheat and rice ushering in food sufficiency through the green revolution. The PUSA institute in Delhi and the Rice Research Institute at Cuttack set global standards in research for high yielding varieties.

The allocational policy of Government of India has consistently supported such top quality research in the government sector. However the private sector, unlike the western countries, hardly invested in research and development nor did they support educational institutions in a substantial manner as has been done by business magnets like Ford & Rockefeller for world class universities like Harvard and MIT in USA. Be that as it may higher education witnessed substantial increase in enrolment only after entry of the private sector in a big way after 2000 in the field of engineering and management discipline. This has witnessed increase in Gross Enrolment Ratio (GER) from 9.7% (2000) to 16.7% (2013). The Planning Commission has been at the vanguard of central allocation to higher education with the objective of bolstering Access, Equity and Excellence (12th Plan).

The trend of allocation by the planning commission during the last three years and is given as under-

Table-1
Overview of Plan & Non Plan Allocation-Higher Education (Rs. Crore)

Agency	2012-2013			2013-2014			2014-2015		
Major Programme	**Plan**	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**
1. UGC	4990	4686	9677	5147 (4720)	5066 (4808)	10213 (9528)	3520	5457	8977
2. IGNOU	105.2	52	157	100 (73.5)	1 (0.3)	101 (73.8)	112.5	1	113.5
3. ICT	191.8	-	191.8	339 (106.2)	-	339.9 (106.3)	180	-	180
4. Technical Education	5390	2582	8513	65181 (5636)	2872 (2805)	9390 (8441)	6385	3078	9463
Plan Outlay									

(a) General	6800	-	6800	8115 (7642)	-	8115 (7642)	7059	-	7059
(b) Technical	5910	-	5910	6518 (5635)	-	6518 (5635)	6385	-	6385
(c) NE Areas	-	-	-	1576 (1424)	-	1576 (1424)	1255	-	1255
5. Total Budget Allocation	-	-	25275 (20423)	-	-	26750 (24485)	-	-	27656

Source: http://finmin.nic.in : India Budget
Figures in bracket shown actual utilization

III COMPETITIVENESS IN TERMS OF RESEARCH, PATENTS & PUBLICATIONS

The share of services in India's GDP has increased for 33% in (1950-51) to 56.5% (2012-2013). Innovation and quality play an important role in ensuring significant global imprint. However, India ranks 64th in Global Innovation Index. India's capacity for innovation has been lower that of other BRICS countries as scores in the following table would show:

Table-2
Trends of Research & Patents Globally

Country	Quality of Research Institutions	Industry Collaboration	PCT Patents Granted/(Million)
USA	5.8	5.6	137.9
Brazil	4.1	4.1	2.8
South Korea	4.9	4.7	161.1
China	4.2	4.4	6.5
India	4.4	3.8	1.2

In particular, what's disconcerting is the number of patents granted per million (1.2) in India against around 140/161 in USA and South Korea. While in terms of availability of no. of engineers and scientists India is well placed, the lack of quality in higher education and low percolation of research for commercial usage remains a major challenge.

Table-3
Education Sector: Publication Trends

Year	India		China		USA	
	Public	Highly Cited Article	Public	Highly Cited Article	Public	Highly Cited Article
2001	15522	103	25730	174	150817	2894
2011	36456	191	122672	980	184253	3137

Source: YuXie Chunni Zhang et al at National Academy of Sciences, 2014

IV MAJOR RECOMMENDATIONS BY COMMITTEES/COMMISSION: 2000-2012

4.1 Ambani Birla Report (2000)

Ambani-Birla envisioned the creation of a knowledge based economic and society, induce competitiveness yet foster cooperation. The report championed the principle of use pay policy supported by loan schemes and financial grants for economically backward section. Government should support and partially fund centres of higher learning, provide financial guarantee to student loan, ensure uniformity in content and quality and

education development planning. While proposing to legislate private universities bill to encourage establishment of new private universities in the field of science and technology, management and finance area. The report also propounded foreign direct investment but limited to science and technology and research should start from the under graduate level with a independent rating agency for universities which is linked to funding. Moreover excessive regulations discourage private spending, encourage freedom in operation and flexibility to innovate, with the report emphasizing that the government should play the role of a facilitator.

4.2 Sam Pitroda Knowledge Commission (2009)

Some of the striking features of the Knowledge Commission are growth of private and foreign universities and reduced role of the state. The commission also recommends expansion of the number of universities to 1500 in the country. The assumption is based on the fact that there are about 350 universities with enrolment of 10 million students so four times increase in enrolment will need four times increase in number of universities. The commission also recommends the establishment of 50 national universities by government or by private sponsoring bodies to be set up by society or trust or section 25 companies. The commission preference seems to be of private universities. The commission also strongly put forward reduced role of the UGC and recommended the establishment of an independent regulatory authority for higher education as independent regulatory authority for higher education (IRAHE). The commission also recommended addition 1.5% of GDP to to be allocated to higher education and that students fees should meet 20% of the total expenditure of the university. The commission further recommends autonomy for the universities to set student fee levels, and commercial use of university facilities, the government providing land and private sector finance to attract not for profit private investment.

4.3 Narayan Murthy Report (2012)

The areas identified by the Narayan Murthy report are quality deficiency, quantity mismatch and funding gaps. The NMR argues that many challenges faced by the government remain unsolved because of the scarcity of resources which is the biggest factor for alluring corporate sector to invest in higher education through direct ownership, collaboration through research, faculty development, infrastructure creation, student scholarship and governance. The report argues for Autonomy in finance, regulatory, academic and administrative aspects, Resources-ensuring availability of land, infrastructure and connectivity, Fiscal incentives-to encourage investment and attracting funding, Enabling environment-for free movement of faculty and students to promote collaboration with world class institutions abroad, Freedom to accredit- with global accreditation agencies to put Indian institutions on par with the best, Access to funds- through scholarships to enable students, Enhancing research focused-through dedicated funding for research sponsored doctoral programs, part time master's and Ph.D. programs, Faculty development-visit of expert faculties, increasing the talent pool from corporate, faculty development program, Setting up centre of excellences or in the form of technology parks, Setting up new universities, Developing new knowledge clusters, The most significant recommendation by the committee Is the up gradation of 75 top of the class universities, with investment ranging from □175 to □200 crore per university, In addition the committee has recommended creation of 20 world class universities typical investment of □ 500crore per university and the third targeted outcome is the creation of 20 new national

knowledge clusters through the public private partnership, The estimated investment for the 5 year plan is of 40000 crore with government corporate partnership, NYC report also recommended creation of council for industry and higher education collaboration as a nodal agency.

The Knowledge Commission and the Narayan Murthy committee report show a distinct bias for industry attraction for FDI in technical education and for promoting cause elite institutions. Thomas Josephs (2013) has observed that the concepts of Centres of Excellences by Knowledge Commission will be at the expense of a large number of institutions run by the states and private sectors. He observes that the Knowledge Commission draws experience of global trends which **favor privatization of higher education, prioritization of skill development over intellectual training**. While UGC emphasizes expansion and inclusion, the Knowledge Commission completely overlooks these concerns. Pathak (2013) has observed **that "NMC presents blossomed trees whose saplings were planted by Ambani-Birla report and watered by Knowledge Commission".**

V THE ROAD AHEAD AFTER DISMANTLING OF THE PLANNING COMMISSION

(i) Corporate Social Responsibility

The Corporate Social Responsibility provision has been incorporated as Section 135 of Companies Act 2013 as per which the companies with annual turnover of Rs.1000crores and above are expected to contribute 2% of their net profit to CSR schemes. It would be worthwhile to mention that UK has been a pioneer in this regard where many of the retail companies are actively engaged in providing health care to about 9.8 million people.

While all the committees look for government support for land at very concessional rate and infrastructural support and recommend replication of the US model for privatization in higher education, none of the reports draw any reference to corporate philanthropy in US. Mathew brings out how close to 400 billion dollar has been contributed by around 59000 private grants by the private corporate sector which has seen growth of universities like Cornell and Chicago.

(ii) PPP Model

For the PPP model to succeed there is a need for harmonious state corporate sector partnership, promotion of private sector philanthropy on lines of USA with strong handholding by government. It would be worthwhile to draw experience of other countries like Sweden, Germany, Singapore & China where the PPP model has worked wonders. The key success factors have been agreement on shared objectives from the beginning of the partnership and political will for participation of the private sector, transparency and accountability within the PPP. Sweden has regarded higher education as a 'merit good' and has a long tradition of substantial public spending. It has substantive relationship with the private sector which includes sharing of roles, responsibility, risks and rewards. In Germany, public commitment to take most risks has encouraged many small private enterprises to participate in the PPP model. Such models have important lessons for India.

(iii) Public Spending in Higher Education including Research and Development

Table-4
GER, Quality & Public Spending Globally

Country	GER (Higher Education)	Public Spending as % GDP
Norway	73.8	9.7
USA	94.8	16.2
Korea	97.0	6.5
China	25.9	4.6
India	16.2	3.3

Source: HDR-2013

It would be seen from the above that compared to the developed countries public spending in education is abysmally low. Higher education accounts for only 1.7% of India's GDP. The Kothari Commission that atleast 6% of the GDP should be spent on education and 1% on research and development. However these sensible recommendations have been put in the backburner resulting in brain drain and the best of Indian mind pursing frontline research in US and European countries. In a recently concluded VC conference at KIIT University the unequivocal recommendation was to earmark at least 1% of India's GDP to research and development so that quality research papers and industry relevance of the universities is ensured.

(iv) FDI in Higher Education

It has been brought out by Suhag and Rani (2013) that FDI in higher education will bring in quality programmes from foreign universities of repute and will improve market orientation. As per DIPP, higher education accounts for only 0.7% of India's total FDI inflow so far with 75% from Mauritius to Manipal University. There is therefore a need to encourage inflow of FDI and setting up viable Joint Venture enterprises & MoU with these companies. The position of FDI inflow over the years is as under.

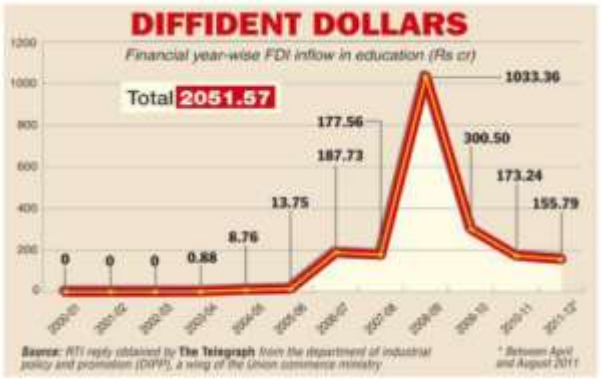

Figure 1: Trend of FDI inflow into education
Source: RTI reply obtained by The Telegraph from the department of industrial policy and promotion (DIPP), a wing of the Union Commerce Ministey-April-Aug-11

VI CONCLUSION

It was Martin Luther King Jr. who had said that "Human progress is neither automatic nor inevitable". The remarkable contribution of science and technology in the 20th century and the hyper connectivity of recent times are testimony to the substantial investment made by government and private sector in higher education in USA

and European Countries, Japan, Korea and China. Prof. Amartya Sen has been constantly clamoring for substantially higher public allocation to education 6% of GDP as against around 3% on a historical basis in India. Japan which is a manufacturing power house was investing handsomely (around 43% of their budget) even during MEJI Era (1868-1902). Similar has been the approach of South Korea and China who has become global manufacturing power house in the 1990s. There is a clear elitist approach in the various reports submitted to the government on higher education. Development has to be dispersed instead of getting confined to a few elite universities/institutions only. Since State Universities constitute nearly 50% of the total number and critically deficient of allocation, infrastructure and quality, there is a need for Big Push. The proposed setting up world class universities should provide the requisite handholding support and synergy to State and Private Universities in the matter of exchange of faculty, research, quality academic material and training. As Jeffery Sachs observes in the context of USA, **"Our greatest national illusion is that a healthy society can be organized around the mindless pursuit of wealth"**. The Planning Commission was set-up to ensure a healthy society through balanced economic growth. **The dismantling of this behemoth and elitist recommendation of Knowledge Commission and Narayan Murthy Report should not bid adieu to concerns of equity and research and development in the pursuit of crony capitalism.**

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