

Higher Education Challenges: Financing Access, Equity, Efficiency, Quality and Relevance in Pakistan

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Abstract

Financing higher education is a complex subject as it addresses the philosophic as well as the practical aspects that span from the state's thinking and willingness to the student's own interest and potential, capacity and willingness of the family, businesses inclination to fund higher education in various forms, a university's own capacity as well as their reliance on government grants, state's tax structure, philosophies, mechanisms and structuring of student loan schemes - all intertwined in a complex web of decisions. Education is a public good and higher education is no exception. Pakistan spends meager 2.1% of GDP on education; the expense on higher education is a fraction of this. Of 43 million cohorts between the ages of 15-24 only 7% have access to higher education. More than 40 million youthful aspirants, despite having mental faculties, are deprived as 1/3rd of the population is below poverty line and another 1/3rd at the borderline. The concentration of 158 Universities and 2,318 Colleges in urban centers across the country is a classic example of uneven distribution, under/oversupply of facilities, students and faculty and exorbitantly inefficient facility use. More than money, The Higher Education dilemma is an issue of system design and efficient execution, research revealed. We have proposed a redesigned higher education system based on population density, market concentration, and industry needs, like mobile cell sites with certain degree of overlap to serve communities within 50-mile radius. The case for Pakistan is characteristic quandary of contemporary developing world and has lessons to learn, we hope.

Keywords: Higher Education, Access, Equity, Efficiency, Quality, Relevance

Introduction

There is an established relationship between investment in education and economic development (Aziz, Khan, & Aziz, 2008) and higher education is no exception. It is a key element in national economic performance and as such, requires special attention (Glenda, et al, 2015). Although, Pakistan has made some progress in higher education, it still is far from the acceptable and away from the international norms. The value of Human Development Indicators (HDI) for Pakistan stands at .515 for 2012 which is extremely low and puts the country at 146 in the list of 187 countries and territories (Human Development Report, 2013). Pakistan has one of the lowest investments in terms of education, it spends a meager 1.8% on education and the spending on higher education is further diluted. The country needs to increase this investment in people's capabilities – as this investment is not an addition of the growth process but an integral part of it. The countries which have made significant achievements in human development could be characterized into “strong, proactive and responsible states” as per Human Development Report 2013. The following four features are common to such States (i) Commitment to long-term development and reform, (ii) prioritizing job creation, (iii) enhancing public investment in education and health and (iv) nurturing selected industries. The report gives example of China which pursued a long term vision to build the necessary institutions and capacities for transforming its economy (UNDP, 2013).

Developing the individual young person, both men and women, into a globally beneficial citizen allowing them to pursue the knowledge stream for the advancement of the societies where they dwell is of paramount importance. This can only be done by advancing the state of human knowledge through research, scholarship and transforming Universities into self-governing institutions. Special attention is needed to provide equitable access, improve efficiency, and enhance quality and relevance of the higher education to the national economic development agenda. The state of affairs warrants proactive development agenda for the strategic engagement with national, regional and world economy. It also warrants determined implementation of social policy innovations.

Higher Education in Pakistan

Higher education is fundamental to the economic development of any nation and making this available to all those who can genuinely pursue it is the responsibility of the state. Analytical studies have shown positive co-relation of spending on higher education and research with an increase in GDP. The World Bank Task Force has done pioneering work on Challenges of Higher Education in Developing Countries and analysis equally applicable to Pakistan (The Task Force on Higher Education and Society, 2000). Oliver (Oliver, 2004) while discussing the higher education challenges for Vietnam has also reported that access to higher education is a major problem in almost all developing countries. Peter (2000) has looked at higher education challenges from the globalization perspective. The higher education system in Pakistan is inherently underfunded, continues to be so and this phenomenon has perpetuated into further decreasing the access which already was very low i.e. approximately 7% of the 17-23-year age group cohorts attending the Universities.

Pakistan's Millennium Development Goals, established in 2006, aspired that by 2015 Pakistan would provide access to 15 % of the 17-23-year age group cohorts to University which was missed by a wide margin as we are already in 2017 and access is still around 8 percent. Currently, there are approximately a million plus students in the higher education system of Pakistan in 153 public and private universities combined and almost 40% of the enrollment is in

2 distance learning universities AIOU (450,000) and VU (100,000) and all other combined have 638,000 as per Higher Education Commission statistics. For the nation to provide access to only 10 % of the 17-23-year age group cohorts by 2015, approximately 1.5 million new slots were needed, which did not happen. If the Higher Education Commission continues to work on traditional university model to create new Universities or their sub-campuses, the requirements to accommodate 15% of 17-23-year age group will remain unreachable. The need is to evolve a model that re-organize the whole education system by making each district headquarter locus of higher education provision by creating a general University at every district headquarters and integrating the existing College system into the newly created general University. These challenges are quite different than the higher education challenges faced by western societies (Ryan, 2017). This difference of challenges between Western world and developing countries is further clear and has been further emphasized by Ebersole (John, 2014). This paper presents the analytical thoughts to re-organize higher education with minimum additional resources required.

Problem Statement

Pakistan's higher education system faces 5 major challenges: access, equity, efficiency, quality and relevance. Pakistan has 2351 higher education institutions that include 153 universities, 87 sub campuses, 118 constituent colleges and 1993 affiliate colleges. More detail is presented in table 1. There is serious uneven geographical spread in these institutions as more than 75% of the main university campuses are in 9 major cities. There is a serious progression disconnect. There is a significant drop in student body from high schools to inter and degree colleges and further drop from inter and degree colleges to universities. Majority of the institutions are in urban classification while a majority of the population resides in rural areas. As such, a variety of economic, social barriers and physical limitations prohibit the university age cohorts to actually attend the higher education institutions. How then to address this rural-urban higher education supply disconnect? The economic profile of the population creates an equity issue in the provision of higher education. One-third of the population earns PKR 3030 per month or US\$350/annum. Another third of the population is very near to the poverty line. How then would 2/3 of the population pay for even average education expenses for higher education which is around US\$ 1000/child/year without the intervention of the State?

Seemingly, large numbers of institutions are unable to cater for the demand for higher education because of efficiency of these institutions to dispense the education. Average number of students per inter college is 308, per degree college 812 and per university is 3932. Further, the subject offering in degree colleges is rather limited. While having lesser facilities, the schools accommodate thousands of students why then, are colleges and universities, having much bigger and better physical facilities, are unable to serve large student populations? How to address this efficiency disconnect? While a PhD is a requirement for the teacher in higher education systems (HEIs) in developed parts of the world, only less than 30% of the faculty in HEIs holds PhD in Pakistan, a serious quality concern. In addition to this very limited interaction exist between HEIs and the relevant employers. Courses delivery is mostly theoretical, internships limited and only towards tail end of the terminal degrees and lacking practical orientation.

Methodology

We have generally relied on public domain data available in federal government's publications, Education Management Information System (EMIS), provincial Higher Education Departments, federal and provincial Higher Education Commissions and University websites. We also approached selected Degree Colleges/Postgraduate Degree Colleges in Punjab for acquiring real time data on the enrollments, faculty statistics and subjects offered. We also acquired enrollment and faculty data of Degree Colleges/Postgraduate Degree Colleges from all 24 districts of Khyber Pakhtunka province. The information gathered was synthesized, limitations identified and conclusions drawn, discussed and documented. Some of the summarized data is presented in analysis and discussion section.

Analysis and Discussion

Access

Researchers have looked at access to higher education from many perspectives. Reisberg and Watson (2011) have explored access and equity principles in detailed philosophical themes. Gallagher, Osborne, & Postle (1996) have compared access policies of Scotland and Australia and consequent impact on economic environment. Access to higher education and consequent low participation rates is one major issue in Pakistan. The enrollment progression in Pakistani Universities is presented in figure 1. Only 7-8% cohorts of 15-23-year age group have access to higher education. The Government of Pakistan had planned in 2005-6 that the access to higher education will be increased from then 7% to 15 % by 2015. The Higher Education Commission (HEC), the apex government regulator of higher education, revised this estimate to 10% by 2015 and 15% by 2020 as shown in the table 2. To meet this requirement, the system was required to create over 1.2 million additional slots. However, the system was not able to create additional placement slots despite very liberal grant of Charters to private institutions, establishment of many new universities, upgrading many degree colleges to universities and liberal creation of sub-campuses of public sector Universities. As shown in table 1 bellow, the HEC's aspiration of reaching 15% access by 2020 will require the creation of over 3 million additional slots in remaining 3 years which is certainly an impossible task.

Area	Main Campus	Sub Campus	Constituent College	Affiliated College	Total
Federal	29	8	6	47	90
Punjab	41	45	45	1054*	1185
Sindh	42	16	35	319	412
K-Pakhtunkhwa	28	11	28	380	447
Balochistan	6	4	-	65-105**	75
Gilgit –Baltistan	1	-	-	1	2
FATA	-	-	4	30	34
AJK	6	-	-	97	103
UAE*	-	3	-	-	3
Total	153	87	118	1993	2351

Table 1: Higher Education Institutions in Pakistan * 770 affiliated with Punjab University, ** All affiliated with University of Balochistan, Source: Compiled from EMIS & University Websites

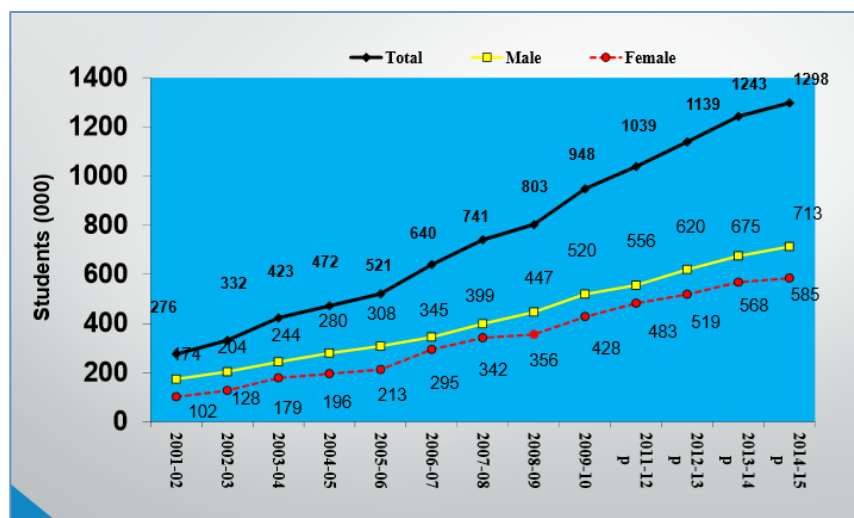


Figure 1: Pakistan University Enrollment by Gender including 457,602 DL Students
Source: Higher Education Commission

Year	Population (mill) Age-group 17-23	Do Nothing	Actual	Required Placement Slots
2011	23.1	7.8 %	7.8 %	1.8 m
2015	25.2	7.1 %	10%	2.52m*
2020	27.7	6.5 %	15%	4.15

Table 2: HEC Vision for Access to Higher Education
*2015 target was missed by wide margin

Theoretically, even if all the public and private sector Universities and Degree Awarding Institutes (DAI) double their enrollment in remaining three years, the system will still be short of over 2 million slots to meet the target. Traditionally, the Degree Colleges, and Postgraduate Degree Colleges, although affiliated with major Universities, has not been categorized as higher education institutions because they are out of the ambit of HECs. The enrollment data for Khyber Pakhtunkha province is presented in table 3.

S.No.	District Name	No. of Colleges	Enrolment at Inter/BA/BSc.	Enrolment MA/MSc	Total Enrollment	Teaching Staff	S:Teachers Ratio
1	Abbottabad	12	9933	1052	10985	429	26
2	Bannu	12	10693	No	10693	323	33
3	Battagram	2	792	No	792	31	26
4	Bunner	5	4897	No	4897	109	45
5	Charsadda	8	7223	19	7242	253	29
6	Chitral	4	4441	No	4441	92	48
7	D.I.Khan	11	10667	No	10667	248	43
8	Dir Lower	7	8583	124	8707	184	47
9	Dir Upper	3	4049	Yes	4049	60	67
10	Hangu	4	1833	No	1833	60	31
11	Haripur	11	8512	143	8655	296	29
12	Karak	8	2338	No	2338	177	13
13	Kohat	6	2806	No	2806	191	15
14	Kohistan	1	593	No	593	11	54
15	Lakki Marwat	7	7178	25	7203	168	43
16	Malakand	10	7440	No	7440	245	30
17	Mansehra	8	5409	No	5409	214	25
18	Mardan	18	17512	No	17512	480	36
19	Nowshera	9	6348	No	6348	255	25
20	Peshawar	17	17583	No	17583	660	27
21	Shangla	3	1712	No	1712	42	41
22	Swabi	15	10049	No	10049	299	34
23	Swat	10	9937	436	10373	343	30
24	Tank	3	1814	No	1814	53	34

Table 3: Enrolment and Faculty Statistics in Degree and Postgraduate Degrees Colleges of KP

The meager access is concentrated in urban areas and particularly in large metropolitan centers which requires the students to travel to these urban centers if they are fortunate to get admission, Because of limited vacancies and tight competition, few also can afford the cost of limited availability university hostels or private accommodations. In Punjab 34 of 49 Universities are located in one city, Lahore. As shown in figure 3, the literacy rates are shown and clearly concentrate in one side of the province. The districts having a University/HEIs or in their close proximity have higher literacy while the districts not having DAI/HEI show much lower literacy. This trend is not limited to literacy but through-out the education matrix, school, college, and university. Further this trend is not limited to Punjab; it is prevalent in all provinces and throughout the country. In Sindh 40 of 54 Universities are located in one city – Karachi, in KP out of 34 universities 14 are concentrated in one city – Peshawar, in Balochistan 4 of 8 universities in one city – Quetta. This geographical disconnect aggravates the access, has cost repercussions, participation rates and perpetuates the underdevelopment cycle. Of 150 universities 26 have less than a thousand students another 23 have between 1001-2000 students, 50 have student body between 2001-5000 while 26 universities have student body between 5001-

10000. Only 17 universities have student body between 10001 and 20,000 while only 8 universities have more than 20,000 students.

Equity

Equity refers to the universal availability of higher education opportunity to every citizen of relevant age group who aspires, is willing and capable, to pursue without any distinction of gender, race, creed, color, and religion, and without consideration to his/her social and economic circumstance or geographical origin. This further refers to merit based blind admissions and determination and/or adjustment of fees, scholarships, freeware, loans and other financial decisions keeping in view of his/her financial circumstances and capacity to pay within the established fee structure of the academic institution. A student admitted on merit to a relevant program must not be denied access to higher education because he/she cannot pay.

According to Ministry of Planning and Development, a third of the population is below official poverty line while an additional third is close to poverty line, Dawn reports (Khan, 2016). Analysis of the fee structure of public universities reveals that average fee charged to students hovers around PKR 100,000/year. The cost of books, supplies, hostel, transport and maintenance is in addition to that. Keeping in view of the geographical spread and dispersion of universities and HEIs and the population close to poverty line, it is reasonable to conclude that achieving 15-20% access to higher education would require a major state intervention in shape of university funding, scholarship scheme, loan scheme and the like. This situation further necessitates that the cost of provisioning be controlled by instituting efficiency measures. The university budgets are worked-out and tuition fees are set based on the cost of provisioning of quality education. The universities should be able to function and provide quality education from the receipts on account of tuition fees. The state shall compensate the university for the students who cannot pay.

Efficiency

The fundamental question in determining the efficiency of investment in higher education is to see if the existing resources are judiciously and fully utilized. The survey of selected facilities of some universities revealed that generally, in public sector universities and HEIs, the facility utilization is very low. The colleges and university facilities are utilized only a part of the day and academic activities are concentrated in the first half of the day when classrooms, laboratories, library resources are effectively in operation. As the day passes the facilities use decline and tapers off. Similarly, the teaching load on the faculty is abnormal, mostly on the lower side. The young faculty is overloaded while senior faculty is involved mostly in general administrative duties.

Another efficiency related issue deals with the deployment of resources. We quote two examples. First, the city of Chakwal has sub-campus of UET Taxila, sub-campus of University of Arid Agriculture, affiliation arrangements of University of Gujrat and Government Degree College Chakwal. The resources spent on all four facilities shall be sufficient to run a good university yet controlled and run by 4 different institutions yield only sub-optimal results and has serious efficiency issues; cost per student is very high compared to the cost per student in main campuses and always have faculty deployment, retention and quality issues. Similar situations exist in many districts where sub-campus of multiple universities exist to yield sub-optimal and inefficient results. Second example comes from a Degree College in district Mianwali. The college has academic facility of over 50,000 square feet sufficient to cater for 500-600 students.

The college has 12 family residences, 18 family flats and other required infrastructure. However, the college has only 4 teachers and less than 100 students at intermediate level with no degree classes. This is a classic case of politically motivated ill investment and ill deployment of academic facilities and there is no dearth of such cases throughout the country in all provinces. As such, it makes lots of sense that the Colleges offering BA/BS/BSc and MA/MS/MSc degrees shall be categorized as HEIs and integrated with university system to reap practical benefits.

Quality

The quality is a measure of numerous attributes in almost all areas of campus life both academic and non-academic spheres. The low percentage of PhD qualified and properly trained faculty as shown in table 4 and 5 coupled with poor student-teacher ratio is a major quality issue for Pakistani Universities an HEI's. There is a proverb that quality comes at a cost and is a perfect fit on Pakistan's higher education spending. For almost a decade the budgetary grant per student had been on a roller coaster but overall there is decrease of 5% between 2002 and 2012. Although the grant per student has increased from PKR 25,483 in 2002-3 to PKR 70,214 in 2012-13 in nominal terms, the real grant per student has decreased during this period.

	PhD	Non PhD	% PhD
Federal	1651	4718	26
Punjab	2189	4858	31
Sindh	1030	3946	21
KPK	918	2275	29
Balochistan	135	1011	12

Table 4: Ratio of PhD & Non PhD Faculty in Universities & DAIs

Institutions	Inter	Degree	MA/MSc	Teachers	S:T Ratio
DC Jahanian	650	175		25	33
DC Chichawatni	1000	300		32	40
DC Mian Chanun	1860	331		31	70
PGDC TT Singh	1516	222	285	38	53
PGDC Kamalia	1200	175	125	50	30
PGDC Khanewal	1384	919	250	79	32
PGDC Sahiwal	2393	1180	515	177	23
Total	10,003	3302	1175	432	33

Table 5: Student-Teacher Ratio in 7 Degree and Postgraduate Degree Colleges of Punjab

Relevance

There is and always have been a concern from the industry that the graduates coming from academic institutions are not well trained to the requirements of the industry. In fact in Universities the students are taught and trained the principals and acumen to apply these principals to the practical situations in whatever industry they join. However, crafting the curriculum and including examples and case studies relevant to major industries in the discipline

certainly has merit. Generally, academia-industry linkage is and inadequate in our institutions of higher learning; research is more theoretical and not per requirements of the industry.

Conclusions and Recommendations

From the foregoing analysis and discussion, it is evident that access to higher education in Pakistan is very low and conventional approaches are not working. It has also been established that the nation has access, equity, efficiency, quality and relevance problems. The situation requires gross system redesign by making District Headquarter (DHQ) as center of gravity for education. We make our recommendations as follows:

Establishing a strategically located District Headquarter University (DHQU)

It is accessible to a catchment of about million people and will enable a good proportion of students, faculty, and staff to commute to the University and return home on a daily basis in a radius of approximately 50 KM. Each new DHQU can be established by blending the Degree Colleges and Post-Graduate Degree Colleges (DC/PGDC) of the district and formally making them Constituent / affiliate Colleges of DHQ University leveraging each other for faculty and physical resources. This will lessen the need for massive capital outlays for brick and mortar. Selected DC/PGDC to be made specialized Colleges like College of Agriculture, College of Engineering, and College of Medicine – the most sought out disciplines by the students. The campuses of multiple universities in one district to be merged and brought under the DHQ University. The colleges in the district to be affiliated with the DHQ University in the area will contain unchecked and directionless grant of affiliations by some of the Universities. Concentration of additional public sector universities in larger cities should be discouraged and the additional investment be broadened than concentration in big cities.

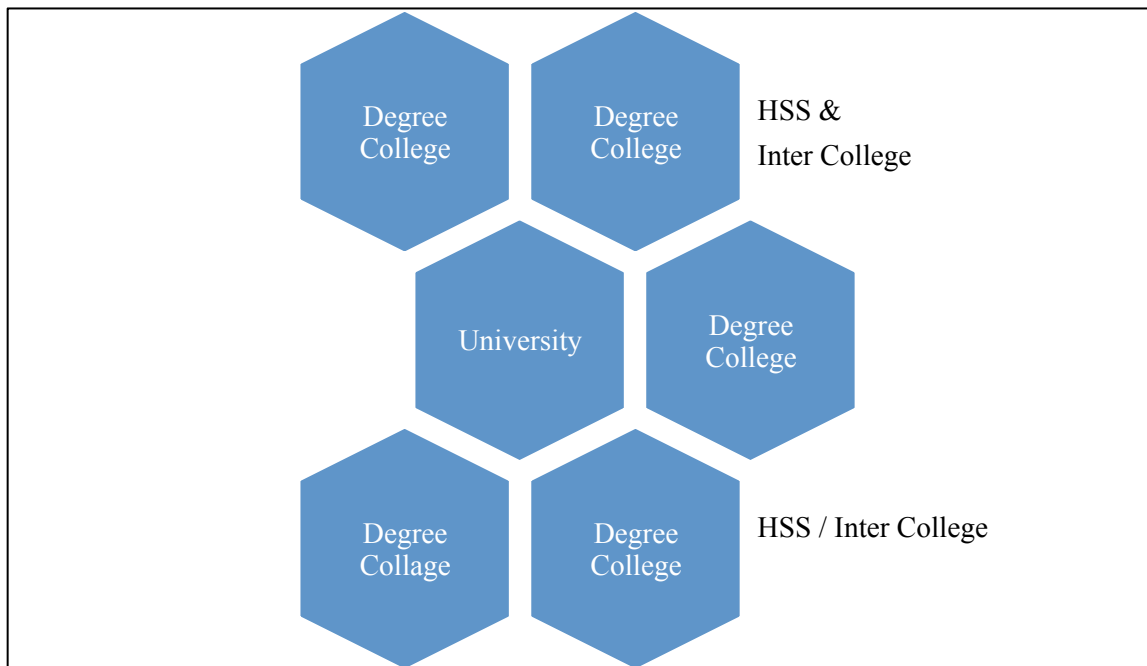


Figure 2: Proposed DHQ University Model

Revitalizing Online DL Programs

Massive distance education program embedding serious quality measures and a carefully crafted campaign for distance education would warrant much broader participation. Degree and skill focused knowledge banks for Online Access (MIT Open Courseware Model) can be developed and Pakistan Education Research Network (PERN) can be used for dissemination of Courseware to masses and intended students. The courses taught at respected universities can be captured for broadcasting through media. Massive higher education development is desired and can be designed and launched by Virtual University, AIOU, and all other Universities with media partners. This will require legal provision for trusting over 100 TV channels to allocate one third of their air time to be devoted to education. All public sector universities may be tasked to maximize their enrollment within 2-3 years with additions in facilities and by efficiency enhancement.

The existing universities can increase their enrollment by more effective resource utilization i.e. classrooms, libraries, laboratories. Our research indicates that the resource utilization stands between 30-35% and can be enhanced to 70-80%.

Developed nations have a very well thought out Student Loan Schemes; HECs must evolve an effective student loan scheme. At all universities, admission shall be competitive but need blind. Higher education must be treated as “Public Good” and State shall be responsible to provide this vital good to all eligible.

Endowment through Land Grants

The best American Universities were created and strengthened through Morrill Land Grant Act of 1862. Pakistan also has sizable public land resources and Universities can benefit from Government’s generous land grants by establishing Land Grant Endowments.

Effective Student Loan Scheme

The funding of higher education is a delicate balancing act. Many nations have used, mortgages type student loan or income related repayments. Repayment can be organized via income tax, insurance contribution or graduate tax.

Promoting National Harmony

The students from neighboring districts of other province shall be encouraged to promote national harmony and regional integrity. A workable induction scheme and related financial system falls under the ambit of both Federal and Provincial Higher Education Commissions and DHQU.

Regulating Private Institutions

HECs have hardly addressed this issue in the past and the result is mushrooming institutions providing useless degrees or good institutions charging fees which are simply exorbitant. HECs must evolve a serious strategy to regulate private educational institutions both for cost and quality.

Area Development Strategy and Engagement of Businesses

Under CSR initiatives the development of 25-50-mile radius of the large development projects must be made part of the project regardless of the project being funded by the federal or provincial governments or private corporations. Leveraging education and health facilities, construction or improvement of roads, scholarships to the students of the area, new opportunities for the people and youth can be some of the initiatives that must be on CSR agendas of corporations.

Research - Backbone of Knowledge Economy

We must also organize research funding on American NSF (National Sanitation Foundation) and NIH (National institute of Health) model and evolve the dedicated high quality and high capacity research targeted to our national economic development agenda. The Ministry of IT and Telecom's ICT R&D Fund is a good example which should not be limited to ICT activities only. The funding streams coming from various industries can be pooled to create Industrial R&D Fund applicable to researchers working in all industrial sectors.

Creating Entrepreneurial Mindset

There is a common trait in all great Universities, fostering entrepreneurship mindset among their graduates. Whether they work for government of industry or get into their own start-ups, the entrepreneurial mindset helps them to grow to their fullest potential. It is proposed that rather than a generic scheme, the Prime Ministers Loan Scheme shall be targeted to Universities and Technical Institutions to foster entrepreneurship and partially targeted and channeled to set-up incubation centers.

University and Role of Collaboration in Societal Development

The Universities shall also play their role in Societal Development by instituting required volunteer work by the students and faculty. All students must spend "Mandatory Community Hours" every academic year. There are numerous opportunities where students can perform community service in almost all walks of life, education, health and nutrition, literacy, technology literacy, sports, tree plantation campaigns – the options and opportunities are endless.

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