HIGHER EDUCATION COMMISSION – Analysis of Human Resource Development (HRD) Programmes

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ABSTRACT

This article takes stock of the activities undertaken in the education sector of Pakistan with a special emphasis on higher education. Pertinent recommendations are proposed for the improvement of this sector on the basis of the analysis of the existing human resource development programmes.

INTRODUCTION

The University Grants Commission (1997), now the Higher Education Commission (HEC) in the document "Vision 2010: Higher Education in Pakistan" outlined the issues of higher education in Pakistan and spelled out the remedial measures that need to be taken for making it effective; it observed that "Pakistan after 50 years of its existence does not find itself in an enviable position (HEC, 1997). Out of 175 countries of the world, Pakistan's ranking order in terms of human development profile comes to 139 (UNDP, 1997)". Seen in the perspective of human-development indicators viz providing basic education, basic health-care, safe drinking water, adequate nutrition, energy consumption and gender equality, Pakistan presents a bleak picture. As per the Human Development Report (2005) Pakistan is ranked at number 135 in comparison to its position of 144 in 2004 and 138 in 2003 indicating negligible improvement as far as the human development indicators are concerned.

The recent Human Development Reports, published by UNDP, indicate that there is no chance of achieving the eight Millennium Development Goals, relating to issues of primary education, poverty, sexual discrimination, hunger, child mortality, maternal health, environment and diseases, by 2015. The progress is too slow to achieve the targets. Besides lack of required financial inputs, political will, infrastructure and policy decisions, the main hurdle is the lack of qualified and trained manpower to work in the field of human-resource development (HRD) with commitment and perseverance in achieving these goals by the year 2015.

Today, the S&T sector in Muslim countries is suffering from acute shortage of talented and well-trained scientists, engineers and technicians which is impeding their socio-economic growth. This inadequacy must be overcome immediately, if the benefits from the investments in scientific research are to be reaped fully. Any HRD programme should be arranged in such a way that the present and future requirements and needs of universities, R&D institutions and industries as well as the needs of the community are met, and a cushion is provided for mitigating the brain drain–the flight of talented persons to the already advanced and rich countries. There is an urgent need to increase the quality and quantity of science education in schools, vocational centres, colleges and universities.

The production of competitive and quality products for matching the standards of the international market, the growing demand of IT industry; reducing the challenges of poverty and malnutrition; strategizing to abate and prevent pollution and diseases; sustainable development and other related issues point to the need for launching a continuous programme for the development of quality manpower in Pakistan.

The 111 universities and degree-awarding institutions (DAIs) of Pakistan are producing a very few PhDs annually and that too of low quality. Their researches do not result in creating new knowledge or techniques and providing support to industry in enhancing the quality of their end-products. For our very existence as an independent nation and for self-reliance and development, it is imperative that our universities should rapidly develop a strong research capability and launch vigorous programmes at PhD and for post-doctoral levels. Now, there is no dearth of funds and scholarships, provided the right approach is followed.

In the last 10 to 15 years, appreciable funds have been provided to the universities for improving the quality of higher education, but the effort is marred by low output of PhDs and publications of quality research papers in international journals of repute.

From the earlier studies conducted by Qurashi & Jafar (1992) and Kazi (2002), it was concluded that there has been an unfortunate failure to build-up productive research groups in universities and to induct qualified and trained manpower in industry and other economic sectors.

THE HIGHER EDUCATION COMMISSION OF PAKISTAN

Universities are fountains of knowledge, education, research and technological development, and are considered as potent agents of development and nation-building. In Pakistan, however, they have been

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Table - 1: Number of Students Enrolled over the Years (by Sector and Level of Degree)

Sector	Year	Bachelors	Masters	MPhil	PhD	Post Grad. Diploma	Total
Public Sector	2001-02	156,141	66,675	3,683	3,061	2,841	232,401
	2002-03	186,602	78,709	4,462	4,045	2,666	276,484
	2003-04	252,841	92,613	6,802	6,277	3,595	362,128
Private Sector	2001-02	30,340	11,854	188	63	1,428	43,873
	2002-03	37,688	15,815	380	93	1,285	55,261
	2003-04	42,871	16,054	652	195	1,336	61,108
Total	2001-02	186,481	78,529	3,871	3,124	4,269	276,274
	2002-03	224,290	94,524	4,842	4,138	3,951	331,745
	2003-04	295,712	108,667	7,454	6,472	4,931	423,236

concentrating on imparting education only and that too on a limited scale. The Higher Education Commission of Pakistan was established on September 11, 2002, under the Presidential Ordinance, replacing the University Grants Commission that had been operating since 1974.

HEC was set up to remove the existing deficiencies and facilitate gradual development of degree-granting universities and institutions (public and private) into world-class centres of education, research and development. HEC launched the Medium-term Development Framework (2005-10) with the strategic aims of faculty development; improving the access to higher education; promoting excellence in learning and research; and its relevance to national needs; as well as building skills for leadership, governance and management (HEC, 2005). The implementation of dozens of programmes is already underway fruition, which need critical analysis and evaluation today. This article briefly reviews the HRD programmes launched by HEC during the last seven years. Though it may be early, but actions are required to keep the situation favourable where billions of rupees are at stake.

According to HEC's Statistical Booklet on Higher Education in Pakistan (2005), there were 111 universities and degree-awarding institutions, 57 in public sector and 54 in private sector (HEC, 2005). Details are given below:

Sector	Universities	Degree-awarding Institutions
Public	49 (4 F)	08 (1 F)
Private	36 (1 F)	18 (0 F)
Total	85 (5 F)	26 (I F)

[Note: F = institutions for Females]

HRD PROGRAMMES

HEC developed programmes to improve the quality of higher education through: (i) faculty development; (ii) improving access to institutions of higher education; (iii) promoting excellence in learning and research; and (iv) focusing on education relevant to the economy and development. With the introduction of various reforms/programmes, there has been a significant increase in the enrollment of students in different levels of education, particularly MPhil from 3,871 to 7,454 and at PhD level from 3,142 to 6,142 between the years 2001-02 and 2003-04, respectively.

This increase is observed to be more in the public-sector educational institutions, mainly due to the introduction of post-graduate scholarship

Table - 2: Numbers of Degree and Post-Graduate Students produced, by Level of Degree, during the period 2001-04

Level of Degree	2001-02			2002-03			2003-04		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Bachelors	31,714	25,535	57,249	37,243	33,372	70,615	40,350	41,714	82,064
Masters	19,178	12,305	31,483	19,879	13,729	33,608	18,928	13,105	32,033
M.Phil.	393	284	677	470	363	833	516	343	859
Ph.D.	155	72	227	206	84	290	216	78	294
PGD	1,332	565	1,897	1,534	619	2,153	1,789	1,017	2,806
Total	52,772	38,761	91,533	59,332	48,167	107,499	61,799	56,257	118,056

Table - 3: Full-time Faculty Members, Classified by their Highest Qualification, during 2003-04.

Sector	Bachelors	Masters	Masters (H)	M. Phil	PhD	Total
Distance Learning	9	110	0	22	41	182
Public	1,059	4,525	1,319	1,019	2,549	10,471
Private	1,151	1,480	508	284	540	3,963
Overall	2,219	6,115	1,827	1,325	3,130	14,616

programmes. However, the output was rather low, viz. 859 for MPhil and 294 for PhD in that period, albeit it takes longer time to earn these qualifications (Tables 1 and 2). This needs investigation as to whether, inspite of the apparent continuous increase in the input of post-graduate programmes, the low output is due to (i) non-existence of appropriate research facilities, or (ii) low availability of researchers to guide the students for research work and dissertation. The number of students enrolled at various levels are given in Table-1, while the degree-wise numbers of male/female students are given in Table-2.

DATA FOR 2001 TO 2004 AND ANALYSIS

Currently, about 25% of the faculty-members hold PhD degrees and less than 25% of the total faculty is engaged in research. This is quite low as compared to international standards. Interestingly, there were only 14,616 full-time faculty members in 2003-04 (22,182 part-time teachers). In public and private-sector universities and DAIs, 3,130 teachers have PhD degree, while 1,325 have MPhil degree (see Table-3). The number of required qualified teachers is quite low, as compared to the other regional educational institutions even.

EXPENDITURE

The total expenditure for all the universities was found to be Rs. 19.708 billion for 2003-04, with a total income generated upto Rs. 11,300 billion (Table-4). The main portion of expenditure goes to salaries of the faculty and the rest of the establishment. The funds provided to the public-sector institutions have increased considerably, i.e., from Rs. 3,802 billion in 2001-02 to Rs. 14,319 billion in 2001-04. Some exercise needs to be done to quantify the positive effects of the enhanced contribution.

Apparently, what is missing in HEC's HRD programmes, in the context of the present situation and natural endowment, is the establishment of strong research groups and national research laboratories to tackle problems of immediate applicability that aims at research results of industrial utilization, especially in areas of renewable energy, biotechnology, nanotechnology and natural products. The greater emphasis should, of course, be laid on post-graduate teaching and research matching international standards. Japan and Singapore are already following these procedures to meet the shortages of skilled labour.

COMPARISON WITH THE EXAMPLE OF SINGAPORE

With the fall/non-profitability margin in the semi-conductor industry in early 2000, which was the basis of economic success in Singapore, it developed plans to move up the value-chain through focus on high value-added industry in areas of biomedical sciences, nanotechnology and energy. The government adopted a two-core plan viz. (a) attracting highly qualified research scientists to work in Singapore, through establishing state-of-the-art research laboratories, and (b) focusing on graduate-education programme to supply highly-skilled scientists and engineers for R&D-oriented industry. Since 2000, Singapore has pumped more than US$ 2 billion into

Table - 4: Total Budget, Expenditure on Research and Library from Recurring Budget, Recurring & Non-Recurring Expenditure and Income Generated through Own Sources by Public and Private Sector during 2003-04 (in Million Rs.)

Sector	Total Budget	Research Expenditure*	Library Expenditure*	Non-Development Expenditure*	Development Expenditure*	Income From Own Sources*
Public	13,356.032	202.078	139.454	11,312.062	1,568.248	5,801.324
Private	6,352.254	159.389	106.748	4,875.878	1,098.511	5,574.359
Overall	19,708.286	361.467	246.202	16,187.940	2,666.759	11,375.683

* = Excluding the amount of projects.

developing the bio-medical research industry alone, and over a billion dollars for the development of qualified manpower. Carefully selected intelligent students from Singapore and its selected neighbouring countries (China, Hong Kong, India, South Korea and Taiwan) are awarded full scholarships leading to PhD degrees in selected fields. The foreign scholars are offered Singaporean citizenship and work-contracts valid for upto five years after obtaining PhD degrees. Research laboratories manned by research scientists have accelerated research activities within the country. This is evident from the rise in the number of registered patents obtained in Singapore, from 800 in 2000 to 2,100 in 2006. And the graduate programme is aiming at getting 1,000 PhD level researchers by the year 2015.

In the words of Dr. Philip Yeo, Special Advisor for Economic Development, "The economy of Singapore sequentially passed through the phases of being labour-intensive, skill-intensive, capital-intensive and technology-intensive. The last phase, it is passing through, is knowledge-intensive, which translates into creating new products and services" (Gulf News, 2008). A small country like Singapore making huge investments in the development of human resources and supporting S&T infrastructure, is possibly the most shining example for Pakistan to take lead from, especially for its ever-expanding infrastructure of higher education institutions.

PURPOSE OF HIGHER EDUCATION

The purpose of higher education should be to develop the right attitude, the ability to analyse, interpret and communicate ideas. A PhD degree holder knows almost everything about one specific thing, but requires training to develop an analytical frame of mind not to withstand pressure to conduct research independently. Higher education institutions can be made more productive by establishing congenial academic environment, having well equipped laboratories, qualified teachers, and by providing appropriate funding and library facilities for research. Pakistani universities need to follow a similar pattern. Mere doling out money by the Higher Education Commission (HEC) to a large number of universities is really not going to benefit research nor assist in producing quality manpower.

The standard of graduate education needs drastic improvement in order to address issues such as, low quality education, poor examination procedures and curricula development, plagiarism, as well as remove quota system in the federal universities. The higher education should aim to cultivate perseverance, commitment and full-time involvement for research.

All the 111 universities and degree-awarding institutions, recognized by the Higher Education Commission, collectively published mere 1,636 papers in the year 2006. The funding for higher education is 0.5% of GDP in the budget of 2.4% for all forms of education. Not a single Pakistani university has come even close to being included in the chart of 200 international universities. With the exception of HEJ Research Institute of Chemistry (now a part of ICCBS), Karachi, none of our higher education institutions attract foreign scientists/scholars for research towards PhD or post-doctoral training.

The minimum qualification required for teaching and training post-graduate students should be a PhD and that their research papers should be published in scientific journals of repute. The teachers must have acumen to judge the capability of research in a student before the latter could initiate the research-project leading towards MPhil/PhD. The research professors should be allowed to supervise only 3 to 4 students at a time.

The scholarship programmes for M.Sc., MPhil and PhD within the local universities and selected universities abroad, should be based on a regular and comprehensive survey to ascertain the present and future requirements of S&T manpower in universities, and agriculture, industry, health and communication sectors, covering the next 10 years. Monitoring the academic performance and processing of their candidature for employment on completion of studies, should be given a high priority.

Furthermore, the components of higher education should include formation of viable research groups, so as to overcome isolation of individual researchers and to initiate multi-disciplinary approach in addressing issues of national priority (Qurashi and Kazi, 1997).

The development of higher education is correlated with economic development and contributes to the increase in labour productivity and higher economic growth. This is evident from the industrial strides made by USA – the most industrialized country of the world – and India – the newly industrialized country – both having the largest numbers of technical manpower. Considering this position, it is urged that the bulk of applied research should be conducted for and within industry. It is essential to develop strong linkages

between university, R&D institutes and industry so that research projects for M.Phil and PhD could be conducted in collaboration with industrial entrepreneurs.

With the introduction of industries based on information-technology, biotechnology, renewable energy and communication systems, there is a growing requirement for highly qualified and trained manpower to meet their specific needs and to retain workers through attractive salary package, so as to retain their services in the local environment. Even to accelerate the process of industrialization to compete globally, a large input in the form of HRD is essential to maintain quality standards in the products and to conduct R&D activity relevant to a specific area. What is being done by the Higher Education Commission, is just the beginning and needs to be reviewed and strengthened.

PROJECT TO EXAMINE VARIOUS HRD PROGRAMMES

Considering the data presented above and the preliminary analysis, it is recommended that a project be launched to critically examine the HRD programmes. An external agency should undertake formulation and implementation of such a survey project. The objective of the proposed study/survey is to collect factual information from 1200 departments of 111 universities and DAIs, with regard to: (a) the development of manpower needed; (b) response of individual departments regarding various programmes/projects introduced by HEC; (c) their impact on faculty development and approach to research work; and (d) evaluation, viz introduction of information technology and its benefits and hurdles, which are the possible avenues for improvement in working environment and future prospects.

In brief, the following actions are proposed:

a. To assess the actual requirements of manpower (in quantitative and qualitative terms) in the higher education sector. The said requirement should be assessed from various perspectives, including level of education, disciplines and technical competence of faculty to carry out research, etc;

b. To evaluate the extent to which the faculty-development programmes have achieved success in improving education-cum-research capacity, viz:

   i) Whether the services of scholars and trained faculty are properly utilized;
   ii) If not, what are the constraints for a proper utilization of their expertise;
   iii) How can the HRD programmes be improved in the present educational system.

c. To factually determine the impact of reforms by HEC on the educational system presently operative;

d. To assess the impact of facilities provided to and obstacles faced by individual department pursuing research-programmes;

e. Determine to what extent I.T knowledge/skill is utilized in the educational system and research programmes, and asses what other facilities are required;

f. Formulate recommendations to improve access to higher education and to turn the R&D institutions into world-class centres of excellence.

This study should be conducted in all the departments of science, engineering, technology and arts, as well as social and environmental sciences. An expert-committee should determine the sample-size, design and develop survey-questionnaire(s), train enumerators, check data-collection on the spot and supervise compilation and preparation of survey report. The study could be completed in a duration of 12 months and would approximately cost around one million rupees.

BENEFITS OF THE PROJECT

The main beneficiary of this study would be the Higher Education Commission, which will get an independent assessment of the existing situation. On that basis, HEC could modify its approach, chalk out future line-of-action and plan new projects for effective development of high-quality manpower by enhancing caliber of faculty and providing better facilities and equipment to the universities and departments of DAIs, particularly those located in the remote areas. Recognizing that establishing world-class centres in the education sector is quite a slow process, it is vital to have enough number of researchers to carry out developmental programmes and to create effective linkages with other centres around the world. Investment in education is the most profitable venture for nations and individuals and, therefore, HEC should lead the nation more effectively in this endeavour.

Creation of new knowledge nurtures a knowledge-based economy, irrespective of whether the country is devoid of, or endowed with, natural resources. However, the aim should be to utilize this knowledge for the good of mankind and for the good of the country.

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