

## **Pakistan’s Higher Education System— What Went Wrong and How to Fix It**

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None of Pakistan’s 50+ public universities comes even close to being a university in the real sense of the word. Compared to universities in India and Iran, the quality of both teaching and research is far poorer. Most university “teaching” amounts to a mere dictation of notes which the teacher had copied down when he was a student in the same department, examinations are tests of memory, student indiscipline is rampant, and a large number of teachers commit academic fraud without ever getting punished. In some universities the actual number of teaching days in a year adds up to less than half the officially required number. Some campuses are run by gangs of hoodlums and harbour known criminals, while others have had Rangers with machine guns on continuous patrol for years on end.

Common wisdom has always been that increased funding can solve all, or at least most, of the systemic problems that bedevil higher education in Pakistan. But Pakistan offers an instructive counterexample: a many-fold increase in university funding from 2002-2008 resulted in, at best, only marginal improvements in a few parts of the higher education sector. This violation of “commonsense” points to the need for some fresh thinking.

The analysis of Pakistan’s higher education system divides naturally into three parts: consideration of the necessary background; understanding the meaning of university quality in the Pakistani context; and exploring the space of solutions.

### **I. HIGHER EDUCATION ENROLLMENT AND GROWTH**

In the early 20th century, Muslims of the Indian subcontinent were, in general, poorly educated relative to Hindus. This was both because of British prejudice against Muslims, as well as resistance by orthodox Muslims to modern scientific ideas and to the English language. Poor education made it difficult for Muslims to get high-level government jobs. This was historically one of the most important reasons that led to the demand for Pakistan.

Compared with much of India, the areas that currently constitute Pakistan were educationally backward. In 1947, Pakistan had only one teaching university, Punjab University in Lahore, with a student enrolment of 644. It lost its best faculty members, who were mostly Hindus, to the migration following the Partition. Although the

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University of Sindh also formally existed at this time, it was only an examining body and began its role as a teaching university after relocating from Karachi to Hyderabad in 1951. Karachi University was established in 1950. University level education in Pakistan clearly had a very modest beginning.

Expansion followed in subsequent years. Table 1 shows the growth in the number of universities, as well as other degree awarding institutions (DAI's), over a period of about 60 years.<sup>1</sup> The first major increase in the number of public universities was initiated by Zulfikar Ali Bhutto, whose populist regime (1971-1977) promised to spread higher education widely. This was subsequently eclipsed by a much faster expansion in the public sector.

Table 1

Year	<i>Universities and Degree Awarding Institutions (DAIs)</i>			
	Universities		DAI's	
	Public	Private	Public	Private
1947	1	0	0	0
1960	5	0	1	0
1970	8	0	2	0
1980	19	0	2	0
1990	20	2	3	0
2000	32	14	5	8
2007	50	37	9	18

The first private Pakistani universities were the élite Lahore University of Management Sciences in 1984, followed by the Aga Khan University Hospital in 1985. The tally in early 2007 was as follows:

- 50 public universities (several upgraded from college status).
- 9 public Degree Awarding Institutes (DAIs).
- 37 private HEC recognised universities.
- 18 private Degree Awarding Institutes.

This makes a grand total of 114 universities and DAI's, an apparently impressive achievement given the low starting point. Student enrolment increased correspondingly.<sup>2</sup> According to the Higher Education Commission the year-wise enrolment in 101 universities/DAIs (including distance-learning institutions) was 276,274 in 2001-2002, 331,745 in 2002-2003, and 423,236 in 2003-2004. Of the total enrolment in 2003-2004, 48 percent was in public sector universities and DAI's, 38 percent in distance learning, and 14 percent in private sector institutions. The latest<sup>3</sup> presently available enrolment statistics are for 2004-2005. They amount to 534,000 or 2.5 percent of the eligible age group. If affiliated colleges are included, the number of students the higher education sectors increases to 807,000 which is about 3.8 percent of the eligible age group. A regional distribution is shown in Table 2.

<sup>1</sup>Higher Education Commission, <http://www.hec.gov.pk/new/QualityAssurance/Statistics.htm>

<sup>2</sup>*Ibid.*

<sup>3</sup>World Bank Report No. 37247, *Higher Education Policy Note. Pakistan: An Assessment of the Medium-term Development Framework*. June 28, 2006. Human Development Sector, South Asia Region, The World Bank.

Table 2

*Enrolment at Universities/DAI + Constituent Colleges during 2003-04*

Sector	Distance Learning	Federal	AJK	Balochistan	Khyber Pakhtunkhwa	Punjab	Sindh
Public	159257	31843	2005	5217	30815	86032	46959
Private	–	4720	379	564	5865	16749	32831
Total	159257	36563	2384	5781	36680	102781	79790

Let us briefly reflect upon the province-wise enrolment. The populations in Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan are roughly 55 percent, 23 percent, 16 percent and 5 percent of the total population respectively. *If Balochistan had the same population as Punjab the enrolment there would be only 63,591 instead of Punjab's 102,781, showing that this province has much lower access.* Sindh appears to have far greater access – it would have 190,802 for equal population with Punjab. But this is deceptive because Karachi, with a population of nearly 16 million, has the overwhelming number of higher education institutions in Sindh.

To put these figures in context: the university enrolments of Khyber Pakhtunkhwa and Balochistan put together is less than the enrolment at a single large US university. The University of Maryland, for example, has over 50,000 students. Pakistan does not compare favourably even in comparison with its neighbours—Iran and India. Iran with a population of about 65 million in 2004 had over 2.2 million students in its universities.<sup>4</sup> India has approximately twice as much of its eligible population enrolled in comparison to Pakistan. Such comparisons put pressure upon policy makers to show fast results.

Constraints upon increasing enrolment still further come principally from the following:

- (a) Availability of formally qualified faculty.
- (b) Availability of formally qualified students.
- (c) Funding.

We shall consider each in turn.

(a) **Faculty:** Table 3, show the number of full-time faculty members, classified by their last degrees. A large number of Pakistani university teachers hold only bachelor's degrees but teach at least at the BA/BSc level. The average number of PhD teachers per university works out to roughly 30. Assuming 10 departments per university, this is only 3 PhDs per department. The "PhD deficit" has frequently been emphasised, and plans to increase the number of PhD holders several fold were announced but with little consideration for suitability.<sup>5</sup> Clearly, even without insisting upon any quality standards of teachers with PhDs (i.e., a person with a PhD is to be considered a "real PhD" for counting purposes), a simple consideration of the numbers available in Pakistan puts a definite limit to expansion of the university system.

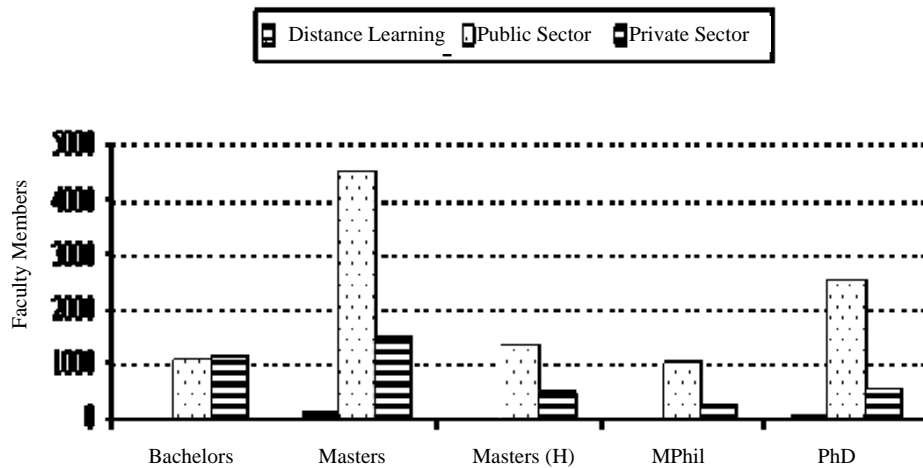
<sup>4</sup> Ministry of Knowledge, Research, and Education, Government of Iran, <http://www.irphe.ir/fa/statistics/Statistics%20Forms/w-br.bruoshoor83-84.pdf>

<sup>5</sup> Aim to have 1,500 PhDs every year: Atta-ur-Rahman. Dawn, 20 June 2004.

Table 3

*Full Time Faculty Members Classified by Their Highest Qualification, 2003-04.*

Sector	Bachelors	Masters	Master (H)	MPhil	PhD	Total
Distance Learning	9	110	0	22	41	182
Public	1059	4525	1319	1019	2549	10471
Private	1151	1480	508	284	540	3963
Overall	2219	6115	1827	1325	3130	14616



(b) **Students:** Those who complete their Higher Secondary Certificate (FA/FSc) have gone through 12 years of schooling. Subsequently, they are formally eligible for entering colleges or universities. Currently, only 2 out of 10 students taking the HSC exams pass, and only one makes it to a university.

(c) **Funding:** The total higher spending for higher education increased from Rs 3.9 billion in 2001-2 to Rs 33.7 billion in 2006-7. (Breakup: Rs 15.7 billion for recurring expenses, and Rs 18.00 billion for development.) Per university student, the average expenditure up from around Rs 30,000 in 2001-2 to Rs 135,000 in 2006-7. This is about \$2100 per student which, while small by western standards, is substantially larger than for corresponding levels in India even without the large increases in the last several years.<sup>6</sup>

(d) The above may be summarised as follows: enrolment in higher education has increased many-fold over the last six decades; access is nevertheless limited to only a small fraction of the eligible population; provincial disparities are substantial; the number of formally qualified teachers is low; and funding for universities has increased enormously since 2002. But the real problem—higher education quality—has so far not entered the discussion. It will be taken up next.

<sup>6</sup>*Indian Higher Education Reform: From Half-Baked Socialism to Half-Baked Capitalism.* Devesh Kapur and Pratap Bhanu Mehta. CID Working Paper No. 108, Harvard University, September 2004.

## II. MEASURING UNIVERSITY QUALITY

Every country wants universities, and the more the better. There is a clear utilitarian goal behind this: universities have become the engines of progress for knowledge-driven economies in the age of rapid globalisation. They are the fountainheads of modern science, and of technologies that have changed the world more in the past fifty years than the previous ten thousand years.

But higher education requires much more than just building structures and calling them universities or colleges. There is little to be gained from a department of English where the department's head cannot speak or write a grammatically correct non-trivial sentence of English; a physics department where the head is confused about the operation of an incandescent light bulb; a mathematics department where graduate students have problems with elementary surds and roots; or a biology department where evolution is thought to be new-fangled and quite unnecessary to teach as part of modern biology. Nor does putting a big signboard advertising a "centre of excellence" make it one.

There are countless places in Pakistan where the above is not far from the truth. On the other hand, there are also some examples of high quality such as a world-class medical university and business school, some good quality engineering and fine-arts colleges.

Ultimately, one must ask: what does "quality" of higher education mean? Equivalently, how may one differentiate between HE institutions on the basis of quality? This then translates into measuring "real access" to higher education and separating it from mere enrolment. Of course, judging quality is always controversial. Comparing universities across countries, or even within a country, is fraught with difficulties. No international agency has yet done a proper global comparison of universities. There have been a few attempts by newspapers and journals but with only some success. Many find their results unconvincing, and different surveys differ sharply in their assessments. This applies even to the widely quoted results of the Times Higher Education Supplement, as well as those of Shanghai Jiao Tong University, both of which are widely quoted in the literature. Their criteria for assessment and weighting factors, breadth of surveys, techniques of analysis etc. are quite different. This leads to a wide spread of results. The problem is the lack of a sound theoretical basis for doing comparisons.

As a tool that could help us frame the issues better and guide us towards a reasonable answer to the questions posed above, let us create for ourselves a hypothetical *ideal university*. Freed from practical constraints, this artifact allows us to imagine all that a university should be<sup>7</sup> and provides a datum against which actual universities can be assessed.

First, the ideal university should be a bastion of critical inquiry covering every conceivable field of human endeavour. It has first-rate faculty that does first-rate research on super-massive black holes and discovers new extra-solar planets, figures out quantum computation and the folding of proteins, documents the mating habits of macaws and tarantulas, and deciphers the extinct languages of Sumeria and Mesopotamia. The professors are widely cited and known for important discoveries. Their fame attracts talented researchers and students from across the world.

<sup>7</sup> *World-class universities: a new holy grail*, Pervez Hoodbhoy, 6 June 2007, SciDev.Net, <http://www.scidev.net/opinions/index.cfm?fuseaction=printarticle&itemid=617&language=1>

Our university also spawns high-tech companies that create more powerful computers and data compression techniques. It generates products and ideas upon which civilisations' progress and survival depend, such as new crop varieties and renewable energy sources. It also does a splendid job at training engineers, doctors, economists, business managers, and other professionals.

Most importantly—this ideal university creates a modern citizenry capable of responsible and reasoned decision making. Its graduates can think independently and scientifically, have an understanding of history and culture, can create discourses on social and political issues, and are capable of coherent expression in speech and writing. They are in demand everywhere—both in academia and industry—nationally and internationally. A tall order indeed! Harvard, MIT, Cambridge, Oxford, Sorbonne are considered among the world's best universities. But even these are poor approximations to an impossibly high ideal.

Coming down to earth: one would like to know what constitutes a reasonable expectation from a public university in Pakistan. If, for example, Khairpur University, deep in the backwaters of Sindh, or Quaid-i-Azam University, in the heart of Pakistan's capital, are to be called real universities then by what criteria should they be evaluated?

A perfectly objective assessment is simply impossible. Value judgments are inevitably involved. Even more fundamentally, ideology and purpose play a crucial role. For example, Soviet and Chinese universities concentrated largely on utilitarian goals whereas western universities—or at least the better ones among them—seek a balance between scholarship and utilitarian needs. Nonetheless, the need to judge and assess is one that cannot be avoided.

Why does quality have to be reflected in numbers? The fact is that resources and finances are always finite. The world we live in demands that hard choices be made. If you are a planner in a high position, finances have to be allocated in a manner according to some rational policy. This means one simply must have numbers. The thoughtful educational planner is inevitably presented with a dilemma: hard numbers reflecting a sufficient measure of truth are essential for decision-making. But at the same time, he or she is aware that behind these numbers can be hidden subjective judgments.

What I have proposed in detail elsewhere<sup>8</sup> is a research strategy that would yield some quantitative measurements of university quality. The proposed measure, called "Institutional Teaching Quality Factor", purports to be a measure of the teaching performance of a given university or college and can be used to define genuine access as follows:

$$\text{Genuine Access} = \text{Institutional Teaching Quality Factor} \times \text{Enrollment}$$

The Institutional Teaching Quality Factor (ITQF) must take the following factors into consideration:

- (a) Quality of teaching and teachers.
- (b) Quality of student body.
- (c) Adequacy of basics.

<sup>8</sup> "Towards Measuring University Quality", by Pervez Hoodbhoy, SAPANA report 2010, edited by Abbas Rashid and Muzzafar Iqbal.

- (d) Governance and ethics.
- (e) General ambience.

A numerical calculation of ITQF should be based upon a formula that gives an agreed upon importance to each of the above:

$$\begin{aligned}
 (\text{ITQF})_{\text{total}} = & W_{\text{teachers}} \times (\text{QF})_{\text{teachers}} \\
 & + W_{\text{students}} \times (\text{QF})_{\text{students}} \\
 & + W_{\text{basics}} \times (\text{QF})_{\text{basics}} \\
 & + W_{\text{governance}} \times (\text{QF})_{\text{governance}} \\
 & + W_{\text{ambience}} \times (\text{QF})_{\text{ambience}}
 \end{aligned}$$

The weight  $W$  of each Quality Factor (QF) component is a number between zero and one.  $W$  is a measure of the importance that one chooses to assign to each determining factor. The sum of all weights is, of course, one. An ITQF of one means that all enrolled students in that institution have real access to higher education. Conversely a non-functional university would have an ITQF equal to zero—enrolling any number of students does not amount to any real access at all.

The  $W$ 's cannot be mechanically generated by a computer—they reflect the individual judgment of those who have been tasked with planning. How much importance should one give to having good teachers as compared to, for example, good administrators? There can never be an answer that is fully satisfactory and one might end up by saying they should given equal importance, or perhaps that teaching is twice as important as administration, etc. Then, one could make a strong argument that, specifically for Pakistan's case, teaching needs to be taken much more seriously than what goes as research.

Since individual opinions and judgments are inevitably involved, is it worth the effort to compute numbers requiring so much detailed knowledge? The answer is yes. The very fact that one must work through details makes individual whim less important. And what about research? Should it not be part of the figure-of-merit of a teaching institution? If so, why has it been excluded from the above formula? We shall return to this important matter later.

## II.a. Quality of Teachers and Their Teaching

The ignorant must not teach the ignorant. This cardinal principle is beyond dispute. It is not our intent here to discuss philosophical questions of what constitutes ignorance or wisdom. Instead, one wishes to address a practical question: how can one decide whether an individual is adequately knowledgeable, or perhaps unacceptably ignorant, to function as a university or college teacher?

Requiring formal qualifications is the first step. It is a sensible first-order approximation to assume that an individual with a higher university degree possesses a higher degree of knowledge, and is hence relatively more suitable as a teacher in a higher education institution. In much of the world this works. But the premise is valid only when an educational system has sufficient integrity; after it is corrupted beyond a certain point the correlation between university degrees and the quantum of subject knowledge becomes uncertain. There are a large number of examples to be found in Pakistani universities and colleges, some of which were quoted earlier, where there is only a weak

correlation between formal qualifications and subject competence. Nothing can be done about a 50-year old English professor who speaks or writes ungrammatical English, or a physics professor unable to solve a simple quadratic equation. But does such basic incompetence exist at the 20, 50, or 70 percent-level? Higher? Lower?

Such a question is unanswerable unless one creates yardsticks, and then proceeds to use them for performing measurements.

At least in the sciences, criteria are possible to devise. As one possibility: a college or university teacher should know adequately the material in a reasonably good quality international textbook, in the subject that he or she is currently teaching or has taught in the past. A sufficient measure of the teacher's adequacy would be if he or she can solve at least a certain percentage of the problems and exercises at the end of the book chapters. Textbook writers and experts strongly recommend, and even require, problem solving. This encourages analytical thinking and requires the student to acquire a certain minimum understanding. One can imagine more stringent tests, but at even this basic level one expects that a majority of Pakistani college and university teachers would simply not make it in the natural sciences. This calls for appropriate corrective action that shall be discussed later.

A second possibility for assessing the competence of a college or university science teacher is to use some standardised subject test. Such tests are frequently used for entrance into US universities. The Graduate Record Examination (GRE), administered by the Educational Testing Service in Princeton, is the most commonly used one. Subject areas include a number of scientific disciplines: biology, biochemistry, cell and molecular biology, chemistry, physics, mathematics, and computer science. In 2006, the GRE subject test was officially declared mandatory for obtaining admission into a PhD programme in Pakistani universities. However, much confusion surrounds this condition, no pass criterion has been set, and there appears to be no example as of 2008 where this condition has been rigorously imposed.

A locally devised so-called GRE substitute also exists. In Pakistan, a private company, the National Testing Service, offers specialised subject testing in 10 areas: agriculture sciences, computer engineering, economics, electronics, electrical engineering, education, geography, Islamic studies, management sciences, and veterinary/animal sciences.<sup>9</sup> Unfortunately, although NTS claims to provide "efficient and credible evaluation", a large number of spelling and grammatical mistakes on its website, as well as poorly constructed sample questions, puts this claim in some doubt. One hopes that professional management of the company, and oversight by suitably capable academics, will eventually change the situation.

In the humanities and social sciences, assessment of a university teacher's adequacy or otherwise is harder and more controversial. One must resort to such criteria as whether the teacher is capable of holding an intelligent discussion in the subject he or she is teaching; has adequate verbal and quantitative skills; is reasonably fluent in oral and written expression; and has adequate capacity to think analytically and abstractly. In principle, one would like such abilities of a general academic nature, which are independent of specialisation, to be measured by some kind of standardised test. The general part of the GRE is one such test that is widely used.

<sup>9</sup> National Testing Service website, <http://www.nts.org.pk/>



## II.b. Quality of Student Body

Student admission into higher education institutions determines the quality of the student body. Countries with a properly functioning higher education system take this very seriously. US universities admit students on the basis of their grades, recommendations, and SAT/GRE scores; British universities place heavy emphasis on O-A level scores; the well-known Indian Institutes of Technology have fiercely contested national competitive examinations; Iranian universities require a centralised nationwide university entrance examination and select roughly 150,000 out of 1.4 million high school graduates who take a tough 4.5 hours multiple-choice exam.

Student quality is fundamental to the success of a university. But how is this to be defined? Traditional societies educated their young to be replicators and reproducers of existing wisdom. This was as true for traditional Islamic societies as for classical education of Victorian times in England. But creating a modern citizenry capable of responsible and reasoned decision making imposes very different demands.

Critical inquiry is fundamental. This attitudinal trait is essential for generating new knowledge of the physical world, as well as of human societies. The traditional concept of knowledge will simply not do. Knowledge is not something to be acquired because of a divine command nor can it be acquired once and for all; rather it is the result of an incremental process and the outcome of exercising critical intelligence.

From this standpoint, there has probably been significant deterioration in the student quality of Pakistani public higher education institutions, and perhaps in private ones as well. But there is no “smoking gun” proof of this, just partial indicators.

One hint comes from the number of Pakistani students studying in the US. Generally, only students with sufficient academic background succeed in getting admission to a US university because, in contrast to some European universities, many require credible proof of academic achievement. The situation is complicated by the fact that visas for studying in the US are relatively hard to get, and expenses are greater as well. Nevertheless, it is interesting to look at some current trends.

From the International Institute for Education, which publishes a year-wise report for every country,<sup>10</sup> one learns that in academic year 2008-09, 5,298 students from Pakistan were studying in the United States (down 0.9 percent from the previous year). The majority of Pakistani students study at the undergraduate level. In 2008/09, their breakdown was as follows:

48.5%	undergraduate
41.8%	graduate students
1.7%	other
8.0%	OPT (Optional Practical Training)

According to the IIE, following a period of decline in the 1990s, Pakistan experienced significant growth in the first two years of the 2000s. Since 2001-02, the number of Pakistani students in the US has dropped significantly, pushing Pakistan out of the top 20 sending places of origin in 2006-07. The number of students from Pakistan continued to decline, by 1 percent in 2007-08 and again by 0.9 percent in 2008-09.

<sup>10</sup> <http://opendoors.iienetwork.org/>

Most students in the US from Pakistan study at the undergraduate level, which indicates that they mostly come from elite Pakistani private high-schools and not public higher education institutions, where the student body is manifestly of poorer academic quality. Countries with stronger universities have a greater fraction of students in US graduate programmes: compare India (73.7 percent) and Turkey (59 percent) with Pakistan (37.1 percent).

Let us now return to the question: how should one seek to determine student quality at a particular institution? A combination of four determinants with appropriately chosen weights could provide an adequate gauge. These are: The quality of the standardised test that checks reading, writing, and math skills for selecting incoming students; the quality of the student selection mechanism used in a particular institution; employer satisfaction with graduates; and student intellectual activities outside the classroom.

### **II.c. Adequacy of Physical and Governance Structures**

Every college or university has certain basic infrastructural and operational requirements. An assessment should involve the following key factors: land and buildings; the period of actual university operation; size and adequacy of library facilities; adequacy of science teaching laboratories; and internet access and the average number of computers per students.

Institutional governance and ethics are critical. Universities are microcosms of the society in which they exist. As such they necessarily reflect values and practices in the rest of society. The successful functioning of a higher education institution depends critically upon adherence to basic norms of academic values and behaviour. Conversely, any institution that violates its own rules is unlikely to have collective self-respect.

### **II.d. Campus Ambience**

Campus ambience is important. The learning environment in any educational institution really matters. The “feel” of a campus is necessarily subjective—different individuals will assess the ambience differently, and different kinds of institutions create different environments. The atmospherics of a well performing technical training school are unlikely to be suitable for a liberal arts college, etc. Hence, weights for the criteria below must be adjusted appropriately.

Well-functioning universities are the products of a complex organic and evolutionary process that is internal to a society. Facilities matter, but it is much more important for a university to have a forward looking world-view, an open environment, high ethical standards, a sense of collegiality and shared sense of purpose, and good governance practices.

### **II.e. Should University Research be Counted?**

Finally, let us ask: should university research be counted in assessing university quality? In principle, the answer is: yes. There are excellent reasons for this. A university should be the place where new knowledge grows, new questions are asked, and curiosity is encouraged as a matter of principle. The best teachers are often those who have created new concepts and worked at the cutting edge of their field. They can create a genuine sense of excitement in their students.

But within Pakistani public universities—at least in their present condition—a culture of corruption has made the value of research uncertain at best. Research is a seriously misunderstood concept in much of Pakistan's academia, and the criteria for assessing its worth are often wrong.

Research in any professional field—mathematics or physics, molecular biology or engineering, economics or archaeology—defies a unique, precise definition. An exploratory definition might be that research is the discovery of new and interesting phenomena, creation of concepts that have explanatory or predictive power, making of new and useful inventions and processes, etc. The researcher must certainly do something original, not merely repeat what is already known. But merely doing something for the first time is not good enough to qualify as research. So, for example, one does not do meaningful research by gathering all kinds of butterflies and listing the number caught of each kind in a particular place at a particular time, etc. Nor is it “research” if one finds the spectrum of one kind of atom after another, or merely categorises the compounds found in certain plants, or note wind speeds at different geographical locations. Unless there is a valid and interesting reason for doing so, to gather data is essentially valueless. It is not research—even if it is published in some journal, whether international or national.

The success of research is judged by its importance. For research of an applied nature, the impact can be measured by its effect upon industrial or academic production, jobs created, rise in company stock, etc. The number and type of patents that follow from the research give an important indication of success.

For academic research, only the specialist in that exact field can be entrusted with the evaluation. Of all imperfect measures, the least imperfect one is to count the number of citations in refereed journals. However, this ignores the contribution of university faculty to specific national needs, as judged by importance given by decision makers in government or industry. Clearly, judging research quality involves many different criteria.

Nonetheless, one cannot abandon the task of judging research quality, importance, and impact. Else, every kind of nonsense with pretensions to research would proliferate, and demand reward in some shape or form. Pakistan provides an example. Here, counting journal publications, and rewarding individuals proportionately, has worsened the state of corruption. An environment, where unethical behaviour was regrettably common to begin with, has been made yet unhealthier.

To summarise: a methodology for evaluating university quality has been presented here. The primacy of faculty and student quality has been stressed. As yet there is no data, only the framework could be discussed. Although it calls for considerable effort, an attempt at measurement would, at the very least, focus on the key elements needed for creating universities that actually work. Else one will continue to shoot in the dark.

### III. THE PATH AHEAD

Six decades of consistent failure in creating a viable higher education system forces us to search for reasons that go beyond fiscal and administrative issues. A key challenge for every government in Pakistan will be to sort out, in all the areas of public policy, the facts on the ground from the intricate fictions offered over the eight years of General Pervez Musharraf's regime that paraded for success.

This means going beyond the standard blame game. Governments have come and gone without setting Pakistan on a clear way forward. So what sets it apart from the developed world, or even India? At the deepest level, it is the value system that shapes modern education and a modern mindset built upon critical thinking. Pakistan's educational system, shaped by deeply conservative social and cultural values, discourages questioning and stresses obedience. Progress demands that ultimately the dead hand of tradition be cast aside.

More specifically, in seeking change of values, it will be important to break the absolute tyranny of the teacher, a relic of pre-modern social values. Closed minds cannot innovate, create art and literature, or do science. Modern education is all about individual liberty, willingness to accept change, intellectual honesty, and constructive rebellion. Critical thought allows individuals to make a revolutionary difference and to invent the future. Else they will merely repeat the dysfunction of the past. But Pakistani students memorise an arbitrary set of rules and an endless number of facts and say that X is true and Y is false because that's what the textbook says. (I grind my teeth whenever a master's or PhD student in my university class gives me this argument!) Minds must be opened.

To develop thinking minds, change must begin at the school level. Good pedagogy requires encouraging the spirit of healthy questioning in the classroom. It should therefore be normal practice for teachers to raise such questions as: How do we know? What is important to measure? How to check the correctness of measurements? What is the evidence? How to make sense out of your results? Is there a counter explanation, or perhaps a simpler one? The aim should be to get students into the habit of posing such critical questions and framing reasoned answers.

On a more practical level, there is urgent need for better academic planning and management at the national level. This will be amplified upon below.

*Revise Spending Priorities:* Currently these are the haphazard expression of individual whims, not actual needs. For example, most Pakistani students in higher education (about 0.8 million) study in about 800 colleges. These colleges receive pitifully small funding compared to universities. During 2001-2004, the funds annually allocated to colleges averaged a miserable sum of Rs 0.48 billion and the spending per college student was only one sixth that for a university student. Subsequently this has become worse. It is no surprise then that public colleges are in desperate shape with dilapidated buildings, broken furniture, and laboratory and library facilities that exist only in name.

The beggarly treatment of colleges compared to universities is often justified on grounds that universities perform research while colleges do not. But, notwithstanding a few honourable exceptions, this "research" has added little to the stock of existing knowledge as judged by the international community of scholars. Nevertheless, in 2005-2006 university research funding totalled a whopping Rs 0.342 billion. Past experience shows that much of the money will be used to buy expensive research equipment that will find little if any real use.

Meanwhile, many public universities are awash in funds. They have gone on a shopping binge for all kinds of gadgetry—fax machines, fancy multimedia projectors, and electricity-guzzling air conditioners. But it would be hard to argue that any of this has served to improve teaching quality even marginally. Worse, the availability of "free

money” has led to the pursuit of expensive but unworkable projects such as the attempt to bring in hundreds of fearful European university professors to teach in a country where suicide bombers kill at will.

*Concentrate Upon Faculty Development:* Because bad teaching quality largely comes from having teachers with insufficient knowledge of their subject, it is important both to have better teacher selection mechanisms and to create large-scale teacher-training academies in every province. Established with international help, these academies should bring in the best teachers as trainers from across the country and from our neighbours. It is hard to see any trainers coming from western countries, although one should try to get them. This effort will cost money and take time—perhaps on the order of a billion dollars over 5 years. These high-quality institutions should have a clear philosophy aimed at equipping teachers to teach through concepts rather than rote learning, use modern textbooks, use distance-learning materials effectively, and emphasise basic principles of pedagogy, grading, and fairness. They should award degrees to create an incentive for teachers to enrol and to do well. Until a sufficiently large number of adequate university teachers can be generated by the above (and various other) means, the practice of making new universities must be discontinued.

*Institute National Level University Entrance Examinations:* These would separate students who can benefit from higher education from those who cannot.

*Qualifying Tests for University Faculty must be Made Mandatory:* The system has remained broken for so long that written entrance tests for junior faculty, standardised at a central facility, are essential.<sup>11</sup> Teachers will surely resist this but without such tests, universities will continue to hire teachers who freely convey their confusion and ignorance to students. No teacher has ever been fired for demonstrating incompetence.

*Be Harsh and Uncompromising in Matters of Academic Fraud and Corruption:* Academic crime flourishes in Pakistan's universities because it is almost never punished. Even when media publicity makes action unavoidable, the punishment amounts to little more than a slap on the wrist.

*Implement Better, More Transparent, and Accountable Ways to Recruit Vice-Chancellors and Senior Administrators:* Pakistan has a patronage system that appoints unqualified and unsuitable bureaucrats or military men as vice-chancellors, and that staffs universities with corrupt and incompetent administrators. Fortunately, there seems to be some indications of positive change and, at least for the appointment of a number of vice-chancellors, search committees were set up.

*Permit Students to Self-organise:* It is crucial to bring back on to the campuses meaningful discussions on social, cultural and political issues. To create the culture of civilised debate, student unions must be restored, with elections for student representatives. They will be the next generation of political leaders. Such a step will not be free from problems—religious extremists rule many Pakistani campuses although all unions are banned. They would surely try to take advantage of the new opportunities offered once the ban is lifted. Political parties have also been less than responsible. But the reinstatement of unions—subject to their elected leaders making a pledge to abjure violence and the disruption of academic activity—is the only way forward towards

<sup>11</sup> In Italy, passing the centrally administered “concorso” examinations is necessary for the appointment of junior faculty. A sample lecture must also be delivered on a topic given to the candidate a day earlier.

creating a university culture on campus. Ultimately, reasonable voices, too, will become heard. As an interim step, the government should allow and encourage limited activities such as community work, science popularisation by students, etc. To condemn Pakistani students as fundamentally incapable of responsible behaviour amounts to a condemnation of the Pakistani nation itself. If students in neighbouring countries can successfully study, as well as unionise and engage in larger issues, then surely Pakistan's can do so as well.

*Remove Nationality Restrictions on Foreign Faculty Hiring:* It is a good thing that the Higher Education Commission has initiated a programme for hiring foreign faculty with attractive salaries. There are simply not enough qualified persons within the country to adequately staff the departments. But the success of this programme is uncertain, and programme management is poor. Jealousy at salary differentials, and a fear that local incompetence will be exposed, has led local teachers and university administrations to block the hiring of faculty from abroad.

Pakistan's image as a violent country deters most foreigners from wanting to come and live in Pakistan for any considerable period of time. Therefore, westerners are almost totally absent from the list of those who have applied under the foreign faculty hiring programme. Apart from Pakistani expatriates in the Middle East, the bulk of applicants are Russian speakers from the former Soviet Union countries. One wishes it could be otherwise. It would be a major breakthrough if Indian and Iranian teachers could be brought to Pakistan. Indians, in particular, would find it much easier to adapt to local ways and customs than others and also have smaller salary expectations. The huge pool of strong Indian candidates could be used to Pakistan's advantage—it could pick the best teachers and researchers, and those most likely to make a positive impact on the system. In the present mood of rapprochement, it is hard to think of a more meaningful confidence building measure.

Pakistani higher education will turn around only if Pakistan can be turned around. This cannot happen while our cities, towns, army, and police are attacked by maniacal terrorists day after day. Expatriate Pakistanis, as well as others of high academic accomplishment, are vital to the uplift of our universities and colleges. In these circumstances they do not feel safe enough to work in Pakistan. Without winning peace, the country will just keep staggering along.