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[Q&A with Pervez Hoodbhoy: Part 1 of 2](#)

By Yaser Sheikh, August 4, 2009

Editor's Note: Pervez Hoodbhoy is head of the [Physics Department](#) at [Quaid-e-Azam University](#) and a prominent social activist in Pakistan. We conducted this interview through email correspondence over a few weeks, to get his perspective on the state of higher education in Pakistan. This is the first in a two part series.

STEP: According to recent [estimates](#), less than half of Pakistan's population is literate, less than half have access to basic sanitation, and the economy is strangled by debt. In context of this, what is the social relevance and value of the modern university, with its emphasis on research and higher learning, in Pakistan today?

“ I would shift priorities drastically and emphasize improving the physical infrastructure of the 1000+ colleges rather than pampering a few public universities.. ”

PH: Pakistan's social indicators are indeed abysmal. But no country can wait for everything and everybody to get up to speed before making universities. Nor should it, because that would essentially mean waiting forever. But we should remember that there is a difference in the purposes that universities serve in countries like Pakistan, and in advanced countries like the US. The latter have knowledge-driven economies, and universities function as the engines of progress. They are the fountainheads of modern science, and of new technologies that have changed the world more in the past fifty years than the previous ten thousand years.

In Pakistan, our universities do not produce much new technology or ideas. Nevertheless their graduates are necessary to keep the country going. Else the country would not have

engineers, technicians, doctors, and administrators needed to run institutions, factories, businesses, and government.

There is another reason for a country to have universities – and this is quite independent of whether they produce state-of-the-art research or not. Universities are needed to create a modern citizenry capable of responsible and reasoned decision making. Their graduates should be able to think independently and scientifically, have an understanding of history and culture, create discourses on social and political issues, and be capable of coherent expression in speech and writing.

The fact that our universities do not measure well on this score is deeply regrettable. Yet, this suggests that we should strive to improve them, not eliminate them. At the same time, although buildings can rather easily be constructed, Pakistan's very limited intellectual resources put strong constraints on the number of actual higher education institutions that it can have.

STEP: Beyond their role as educational institutions, what is the value of emphasizing research, specifically theoretical and technical research, at universities in Pakistan?

PH: Research on the theoretical aspects of a subject is important for two reasons. First, genuine research, even if it is not cutting edge, makes the individual teacher much more aware of the state of the field and hence a better, more exciting teacher. Book knowledge becomes stale fast, particularly these days. Second, knowledge is advanced only through research, and Pakistan should play a role in this some day. India already is doing so, and Iran has begun to as well. Theoretical research is intellectually harder and more demanding than experimental research, and it consumes far fewer resources. Thus it should be strongly encouraged.

But since “research” is a widely abused term in Pakistan, some careful consideration of its meaning is necessary before attempting to evaluate its current importance in our universities. Research in any professional field — mathematics or physics, molecular biology or engineering, economics or archaeology — does not have a unique, precise definition. But a tentative, 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. In the world of science, the researcher must certainly do something original, not merely repeat what is already known. Just 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 does it come from making standard measurements, substituting one material after the other just because “it's not been done before”.

We must recognize that very few Pakistani universities and their faculty currently have the capacity for real research. Nevertheless, they can still function quite well as knowledge transmitters. For example, some of Pakistan's elite private universities have

good teaching standards although they have few journal publications at this stage of their development. My feeling is that if a university teacher does not have the physical, material, or intellectual resources to do genuine research, it is far better that that person be made to improve his or her pedagogical practices as well as subject understanding. This is far better than churning out junk papers, which no one reads.

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STEP: You have been a leading critic of some of the policies the HEC has initiated to address the state of research in Pakistan. Let's say you are given Rs 21 billion (HEC's 2009 budget) and stewardship of an organization with a mandate to reform universities in Pakistan. What would be the three most pressing items on your agenda and how would you go about instituting them?

PH: I would shift priorities drastically and emphasize improving the physical infrastructure of the 1000+ colleges rather than pampering a few public universities. Of the available money and effort, I would put 90% towards improving teaching quality at our public universities and colleges. Only promising research would be supported. Today's atrocious teaching quality comes largely from having university and college teachers with very poor knowledge of their subject. Therefore I would call for the following:

1. Require that every applicant for lecturer or assistant professor, either at a public university or college, pass a relevant internationally administered examination (such as the GRE subject test if one is available in that field, else the GRE General Exam). The test would ensure that that person has enough basic knowledge to properly teach the subject. The applicant would also be required to give an introductory lecture, open to all who wish to attend, on a subject belonging to the applicant's claimed field of expertise. The entire process of teacher selection needs to be made transparent and above board.
2. Create large-scale teacher-training academies in every provincial capital. Established with international help, these academies should bring in the best teachers as trainers from across the country and from anywhere in the world. A few master trainers might be willing to come from western countries in spite of the security situation, but hopefully attractive salaries might be able to lure some from India or from outside the Western world. These academies must be on the scale of a mega-project, say on the order of a billion dollars over 5 years. As high-quality institutions, they should have a clear philosophy aimed at equipping teachers to teach through concepts rather than rote learning, use modern textbooks,

and emphasize basic principles of pedagogy, grading, and fairness. To be effective, they must be degree-awarding institutions.

3. Build on various current HEC initiatives such as foreign faculty hiring and scholarship schemes for university teachers. There are simply not enough qualified persons within Pakistan to adequately staff university departments. The fact that these schemes have been mismanaged by the HEC should not prejudice one against their potential usefulness if proper procedures and rules are adhered. Those selected for overseas scholarships should be required to clear an international subject test.

STEP: You note that “university and college teachers [have] very poor knowledge of their subject.” Yet, the scope of the teacher-training academies would presumably be pedagogical technique and not the outright re-education of teachers in their subject material. Is a multi-billion rupee investment in pedagogical training worth it, when subject proficiency seems like the fundamental problem?

PH: Thank you for forcing me to clarify. I very much have subject proficiency in mind. In fact, in the proposed new teacher training institutions I would give 90% importance to re-teaching subject basics and only 10% to pedagogy. So, in fact, teaching teachers “teaching-methods” is a very distant second priority. Let me say that those studying in these hypothetical NFAs (National Faculty Academies) would be relearning materials that they are actually supposed to know from their time in college or university. But there would be a crucial difference: this time they will be graded not by how much they have memorized but how well they are able to use what they have learned in order to solve problems. In science, knowledge is useful only if it is internalized rather than memorized. It must become part of your mental tool box.

There would be another important side benefit to having competent teachers. I am convinced that if a teacher knows his or her subject and is able to comfortably solve all or most of the problems at the end of a chapter, it would lead to important attitudinal changes. Some of the authoritarianism of teachers would surely go away. It is a fact that teachers often discourage students from asking questions because they know that their lack of understanding would be exposed. This is lethal for an academic environment.

STEP: Your proposal has a parallel to the erstwhile universities mega-project in that, rather than reforming and investing in existing universities, it recommends creating entirely new institutions. Why the inclination to create new academies instead of focusing resources and effort into reforming existing programs?

PH: Suppose you had inherited an airline company but no pilots. Would you like novices to take your planes up in the hope that they will learn flying that way? Of course not! Similarly we have entire universities, but with almost no people who are fit to teach in them. But they still teach, and nobody stops them. So although we don’t have crashed planes, we have armies of university students who graduated but didn’t survive their mis-education. Therefore, they could never become good scientists, engineers, economists, or

whatever. In the hard sciences, I'd estimate that a miserable 20-30 percent of university teachers are actually qualified to teach — and I'm being generous.

To fix this situation, I just don't know of any way other than training teachers in dedicated, specially created, teaching institutions where, at the end, they would be required to show proof through proper examinations that they've learned their subject well enough. It's like a pilot certification requirement. If you don't pass, you are not allowed to fly — or teach.

To respond specifically as to why we need new institutions: it's because we just don't have any teacher training institutions with anything close to the required intellectual capacity. It's not about reforming something that presently exists but which is not good enough; nothing presently exists where college and university teachers can be adequately taught subject basics.

I might add one caveat: creating any good educational institution in Pakistan means that we will have to get at least some key people from other countries. Unless Pakistan stabilizes and deals with terrorism effectively, no persuasion will ever succeed in bringing them here. Or, perhaps, even expatriate Pakistanis. So this is a super-priority.

STEP: Why did you choose to return to Pakistan after your bachelors and masters

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degrees from MIT?

PH: Like some others of my generation, in the early 1970's I was witness to the huge political upheaval in the US. American students were staging protests against their own government over its wrong and immoral war in Vietnam. Hitherto I had regarded politics to be a mere game and had barely any interest in these matters. As a naïve middle-class apolitical Pakistani youth, it seemed totally unbelievable to me that MIT students would be protesting against their own government and country — and that too when it was at war. There were huge protests, boycotts, and even occasional violence. I remember witnessing the violent protests against the Charles Stark Draper Laboratory on campus, which was involved in MIRVing nuclear missiles. It was so liberating for me to see people follow the dictates of their conscience. Now a part of the anti-war movement, I

fully understood the ugliness of imperial power and participated in the teach-ins and sit-ins. The atrocities that the US was committing in Vietnam had made me so very angry that I did not want to live a day longer in America than was necessary to finish my degrees.

Then, closer to home, there was the slaughter in East Pakistan being carried out by the West Pakistani army. At the same time, there was a movement for social change in Pakistan that promised socialism and justice for the masses. It was initiated by Zulfikar Ali Bhutto, who brought revolutionary politics to Pakistan. What happened to him, and how he reneged on his promises, is another story but those were times of immense hope. I was one of the many overseas students who went back to Pakistan dreaming of changing everything, and of replacing feudalistic and capitalistic exploitation with socialism. So, with a job in hand at Islamabad University (QAU went under this name in the 1970's) I joined up with others who had also recently returned and we became part of a workers movement in Rawalpindi, known as People's Labour Federation. With another group of friends who were inspired by the idea of a peasant revolution, I became involved with working as a paramedic and school teacher in a remote Potohar village.

The second part of this interview will be posted, presently. Interesting questions from readers may be posed to Pervez. Please email your questions to: editors [at] nextstepforward.net