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A lot of people claimed I shouldn't be asking you questions about SNC a topic that you aren't an 'expert' on - how would you respond to that?

I claim no expertise in anything and have never made any such claim. So ask what you want at your own risk. But, to be fair, most of those who are given unlimited access to the national media and freely dispense their views lack not only expertise but also common sense and decency. Of course I am a physicist first but as a citizen of this country I worry about my environment – not just my physical environment but also social and political. That's why even those who are non-experts like me sometimes speak out. When I see people in great distress, particularly women and poor people who've been left out of the mainstream of society, then I feel I should be worrying about things that lie outside of my own narrow area of physics. In fact I don't feel the least bit apologetic about it.

What do you think the fundamental role of education is? And is 'nation building' a part?

Education can lead to nation building and it is often used by nation states for that purpose but it is something that is much more fundamental. Education should be about building the capacity of a mind to comprehend the social and physical environment. In fact it is the tool by which we humans understand the universe. Through this apparatus we become capable of asking the right questions and knowing when the answer received is satisfactory. No, education is not about learning facts – although that is certainly a part of it – but about learning to deal with known facts. So, if nations are built as a consequence of this process then well and good. But the primary purpose of education should ultimately be aimed toward the individual: not for creating a political community.

Is ensuring national literacy the job of the government? Why or why not?

If by literacy you mean simple reading, writing and arithmetic then it is definitely the duty of a government to ensure delivery of those capabilities. To be remiss indicates failure to govern. This assumes that the government is really in charge of the country and collects taxes from the people or receives external aid for this purpose. But simple literacy is just the first rung of the education ladder.

Who should be granted the authority to decide the content, particularly in a country like Pakistan

which has a hybrid political system?

There are certain parts of education that are universal and uncontroversial. Across the world you see people generally learning the same things: simple addition, subtraction, multiplication, etc. and how to read and write in their language. Next come history and culture but things start to get sticky here because most societies are multicultural and then questions arise of what is to be taught. As we go to more advanced levels, education is required to respond to even more specific demands. The decision of what to teach is at one level an individual one: people learn according to their needs and seek out opportunities consistent with those. At a broad level, the ideal education should be to equip individuals with sufficient mental capacity so that 'traffic policemen' become unnecessary. This means exposure to a broad range of thoughts and ideas. In terms of religious faith this would take the form of studying various religions so that a student knows about the tenets of all major faith systems. I think religion should be taught as a phenomenon so that students can understand the existence of faiths other than their own. The government should not be in the business of deciding on behalf of the people what they should and shouldn't believe. Of course, kids will be taught at home – by their parents – if they feel they have a responsibility to transfer their personal ideologies on them. To my mind an individual's faith should be left for that person to decide.

What do you believe the language of instruction for education in Pakistan should be? English, Urdu, or the vernaculars?

It has been scientifically established that young children learn best in their mother tongue – i.e. whatever language is spoken at home. Naturally, it is much easier to communicate in that language and each of these languages is a repository of some historically formed culture. In my opinion local languages should be promoted and the state needs to stop denigrating and marginalizing them. However, most such languages have very clear limitations and one can only go so far with that approach. Of course, since Pakistan has a national language it makes sense to have most education in Urdu and then to gradually introduce English. But English should be taught differently from how it is taught now. School textbooks in Pakistan purporting to teach English appear to have been written by morons who have no pedagogical sense or even commonsense. You can see how stupidly the present SNC books have been written. What's needed is a scientific approach that focuses on a relevant, restricted vocabulary and gently introduces the grammar. I think there is no getting around the fact that we have to ultimately become bilingual: both English and Urdu. It's not just science and technology – which are 100% in English – that requires this but much else. New social concepts and the ideas that exist in the world today are being constantly invented and English is the primary language for this. The world for an individual unfamiliar with English is a much poorer one. I think it is the job of an education expert to determine transitional stages. Perhaps students should be started off with their mother tongue, and then – let's say at the age of six or seven – taught in Urdu and followed a year later by an introduction to English. This will be a path towards attaining life skills as well. By the time students are at university they should be perfectly adept at English. At this point, Urdu should ideally be dropped for purposes of official communication. But having said that, I give my own university lectures in Urdu to make them comprehensible. Do I enjoy that? No. All students say that my English is too difficult to follow fully, but quite a few students say this about my Urdu as well. That's because they haven't learned any language properly. Sadly Urdu has reached a plateau of development in all subjects. It has stagnated and words that were commonly understood 50 years ago are now unfamiliar. The vocabulary of the average Pakistani in any language barely exceeds 2-3 thousand. It should be many times that. The ability to express finer thoughts and purity of expression has disappeared. Paradoxically, even as the quality of spoken and written Urdu nosedives the number of people using Urdu keeps rising.

There is much talk about 'mainstreaming' madrassas - do you think the current madrassa system is producing graduates that can contribute to the economic growth of the country? If not, why not - and what can be done about it?

You have to look at history and the experiences of other Muslim countries in today's world to get to the answer. In a nutshell – it hasn't been done. The focus of madrassa education has always been religious instruction with a smattering of other things hastily thrown in with the hope of making the graduates employable. This rarely happens. I challenge you to show me a country where madrassas are producing graduates of any worth in science, technology, medicine, or any field of knowledge that is considered worthy of exploration today. This nothing new. Historically, madrassas have never produced scientists or thinkers of any worth. Their curriculum was largely religious although in better times there was a smattering of low level math and astronomy. If one looks at the Islamic golden age or at the major contributors to scientific and intellectual progress in those times – people like Ibn Sina, Al Farabi, Ibn Haytham, etc. – they gained little secular knowledge from the madrassas. In fact only a few were formally educated. As people of genius they were all self-learners and beneficiaries of the initial stock of Greek learning, thoughtfully translated into Arabic by the enlightened caliphs of the time. The intellectual elite communicated internally; madrassas were not high seats of learning. The situation of the subcontinent's madrassas was different from those in the Middle East or Spain. Indian madrassas were even more focused upon religious matters, especially after Shaikh Ahmed Sirhindi. We should not forget the historical context. Mohammed bin Qasim came to Sind in 712, some 150 years before the beginning of the Arab Golden Age. In contrast to Arab Islam, Indian Islam never produced anything of significant scholarly value. Madrassas and rote learning killed the search for new directions. Then, as now, it is only religious questions that are debated endlessly. Remember that the basic purpose of the madrassa is to prepare you for the afterlife. That is why they have students learning and regurgitating religious texts. There is no concept of creating knowledge or getting jobs outside of

religious institutions. The highest aspiration of madrasa students is to become clerics: not scientists. We need to treat madrasas as a problem. We can't say 'this is a parallel stream of education' because it creates graduates that are unfit for modern civilization. This is not to say they should be closed down tomorrow because this would leave millions of students destitute. But we do need to treat it as a problem. We have too many children in this country who struggle to feed themselves and so are naturally sent to madrasas where they can hope to get something to eat. What is needed is a long term strategy for children to transition out of this system.

What are the strengths and weaknesses of the current Single National Curriculum? Is it even necessary?

I don't see any strengths just weaknesses! We do not need a single curriculum – absolutely not. The diversity in this country is much too great for any single curriculum to work. The educational level of O/A level students, madrasa students, and students of private Urdu-medium schools are totally different. To have just one curriculum you would need to drag everyone down to the same common level – which is a prescription for disaster. The SNC's claim that it will level out the educational inequities in the system is plainly fraudulent and intended to deceive the public which hopes that this will do away with an iniquitous system. Simply changing the curriculum does not level the playing field. The education experience is predicated on several other things besides the curriculum: teachers, examinations, infrastructure, administration, etc. Focusing on only one component – a zero-budget enterprise – is merely a way of saying, 'You are all going to read the books prescribed to you. And there is nothing beyond that.' It does not resolve anything else.

How do you think access to education for girls in particular can be improved? There seem to be several sociocultural barriers to making facts about the female body known. How can they be addressed?

Obviously we must have more girls' schools and better infrastructure for them. That many do not have toilets is a real problem but this has a clear solution – build them! Making education relevant to female needs is much more difficult. Girls approaching puberty are scared away from school because of menstrual problems. They have to be told that this is perfectly normal and can be dealt with in a very routine way. For this they need to be educated about their bodies. We are so tabooed that this is not being done. Such barriers need to be dismantled. Unless we do so and include the human reproductive system as part of the curriculum we will keep multiplying the population by a factor of two after every 25 years. In schools our girls are not told how children are born. A lot of them actually find out on their wedding night!

How do you think critical thinking can be incorporated into the education system from an early age? Is that possible in Pakistan?

Difficult yes, but possible in some places. Basically we need to relax the constraints within the classroom. The teacher cannot be a dictator. We need friendly teachers, particularly at the primary and secondary levels. Loosen the knot on the classroom, foster curiosity and encourage students to ask questions. When I was teaching sociology at FC College, I would have 30% of the grade based on class participation. Every time a student would open their mouth, they would get one mark – regardless of the quality of their contribution. At the end of the semester we would total up their points. Somebody who absolutely refused to speak up would get zero, naturally. And to my surprise there were actually students who ended up in that situation despite the utterly simple criteria I had set. I would ask them why they didn't speak – to which they would say 'aadat nahi hai' (I'm not in the habit of doing so). What sort of early education must they have gone through to end up in that predicament? Teachers need to structure their classes so that a multiplicity of views are presented to their students – and then allow them to ponder and come up with their own thoughts and opinions and perspectives in an independent capacity. This fosters a culture of debate and the exchange of ideas which over the long run generates creative, critical thinkers.

What do you think are the political incentives driving the push for the current SNC?

I don't think this has to do with the PTI as a whole. It is Imran Khan. It has been his obsession since he underwent his lifestyle changes. Let me tell you a story. About 20-25 years ago he asked me to attend a meeting at his house. He said, 'Pervez, I built the cancer hospital – and I want to do the same for education.' It was me and a few others. In total it was 3 'pant-wearing' people and 3 religious conservative scholars. It did not go well at all. The moulvis saw modern education as a conspiracy against Islam and wanted to have nothing to do with it. This led to a heated argument and Imran was apparently neutral but was actually pitching for them. The point of the story is to say that it is not PTI – it is its current leader. He wants this. You might ask why, and this is related to his 'discovering' the faith to expiate his guilt for a racy youth.

Considering the vast majority of Pakistan's population is moderately/strongly religious, do you not think most parents see Islamic education as a fundamental aspect of good schooling for their children? If that is indeed the case, ridding the school system of 'religious studies' would probably trigger excessive backlash - how do you think the subject may be improved?

I think people at different economic and consciousness levels will look at it differently. Those who know something about

the outside world know it is very competitive. If you want a job, your kid has to be smart and know what is needed out there. This means savvy parents will give their kids a secular education with a little religion thrown in. The simple minded majority will go differently. This means a few Pakistanis will get educated well and be competitive internationally, but that number is small. Those who learn nothing in school can still get a job inside Pakistan because here it's connections that will get you one.

What do you think the effect of including religious beliefs/sentiments in other subjects (like science and history, and in visual depictions of clothing and household relations) will be - especially considering Article 22(1) of the constitution explicitly says that religious instruction will not be allowed for those that do not belong to said religion? How are these debates important and don't you think they take away from the content related issues?

It's completely unsurprising that the rights of religious minorities are being openly trampled upon and their kids are being forced to learn Islamic materials. This is a violation of the constitution but the constitution is regarded as a piece of paper here, there is nothing sacrosanct about it. Instead most people believe that Islam comes first and Pakistan (and its constitution) comes second. So they buy the line that Islam has to be everywhere – not just confined to Islamiyat. It extends into language teaching, history, geography, the sciences, etc. Pakistan first experienced this thinking under Zia and now we are seeing a continuation of that. Imran Khan is an extension of Zia ul Haq with a prettier face. If he could, he would get rid of every liberal in this country. The only constraint on him is exercising this option would stop aid and loans from the outside world.

One of the justifications that are presented for increasing levels of religiosity - not just in education but also culture and society in general - is that it is a rejection of colonial-era impositions: what is your take on this?

Yes, there is certainly that. We saw this much earlier at the time of the British. The East India Company made its way gradually into power, taking over India eventually. Then 1857 happened and the last Mughal king was removed. The British needed locals as government functionaries and hence people educated in a modern system. Most Muslims refused saying their religion had given them a superior way of life and secular education was therefore unnecessary. Hindus, on the other hand, asked for more schools and colleges to be built for them. The rejection of Western education and the insistence on Arabic and Farsi as the medium of instruction over English did not do much good for Muslims and so they landed fewer jobs. If you want to understand the difference between Pakistan and India in terms of current achievements in science and technology, the roots have to be found in the past. Rejection of something good and useful, even if it has colonial roots, is not a wise thing. You might get a feeling of liberation when you say 'we have rejected the English language'. But then what? Will Afghanistan be able to prepare its kids for the 21st century by educating them in Pashto and rejecting English as a farangi language? This would be a foolish decision.

It is said about the SNC that it is establishing a 'floor' for each grade level in the education system - what are your thoughts on that?

If Pakistan was Sweden, it may be possible. It won't work here. If you do put a floor on each grade level that floor would have to be very low indeed. No real skills would be imparted in that case. How are you going to put the floor between those studying in a village school and those at Aitchison or Beaconhouse.

How do you think we can rethink our education system and bring it in line with the modern world? Should we continue building structures and seeing the process as a logistical one? How can we introduce a sense of dynamism to the mix?

We need to incline ourselves philosophically with the ideas of modernity. What does that require? It doesn't mean you dress in a certain way, although that is part of it. Modernity means acceptance of the primacy of reason. That is how it happened in Europe and that is how it is happening across the world. China, Japan, India – and even Bangladesh – are heading north even as Pakistan heads south. SNC is geared to ensure that Pakistan remains an ideological state where reason is secondary and constantly denigrated. All the time we hear supplications to the supernatural, no calls for asking why something has happened.

There's this great song by Pink Floyd, The Wall Part 2 - where they go, 'We don't need no education, we don't need no thought control'. What is your take on the idea of schooling in general around the world as being a means of ideological propagation?

In much of the world, choosing your ideological affiliation is at least a half possibility. Not here. From the day the child is born, you are told you belong to a religion – which is the best in the world and which prescribes the ideal behavior for humans. When the child goes to school, this is reinforced. Right and wrong is based on an understanding purely that of Islam. This leaves no room for non-Muslims who are brushed aside by the majority under the claim that the country was not for them in the first place and that Islam is what Pakistan was made for. Everybody else better leave.