

# **Initiating Public Debate on Reforms in Higher Education**

## **Convocation Address**

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His Excellency, the Chancellor of University of Mumbai, Shri S.M. Krishna, Vice-Chancellor, Dr. Vijay Khole, dignitaries on the dais, Members of the Senate, Academic Council, Management Council, Deans, Faculty, Graduating Students, families of the students, Guests, Ladies & Gentlemen,

Good evening. It is indeed a great privilege to be invited to deliver the Convocation Address at the University of Mumbai. I thank the organizers for this unique opportunity. To begin with I want to compliment and congratulate all of the graduating students for receiving their degrees from this great University with 149 years of track record. Special congratulation to award winners; it was nice to see more girls getting the awards than the boys. Leaving aside the Medical School, I thought girls totally outperformed the boys. I suggest boys work little harder next year. I want to wish you all great success in your careers, wish you prosperity and happiness going forward. I would like to take this opportunity given to me to talk about two topics:

One: I shall give you little bit of a feel about National Knowledge Commission for what it is and what are we trying to accomplish, ask for your support, understanding and also talk about the need for major reforms in University education. National Knowledge Commission was set up recently. It was first discussed at the National Advisory Council chaired by Mrs. Sonia Gandhi where I was a member. I was asked to look into Science, Technology and

Higher Education. Based on that I did a little report I had an opportunity to present it to the Prime Minister. He on his own had been thinking about knowledge related challenges and to gather, after series of discussions, the Government decided to form a National Knowledge Commission with eight members to look at various aspects of the knowledge in terms of knowledge creation, dissemination and applications in the twenty first century. As you know, India has had a long tradition of knowledge. In contemporary knowledge, we have lost to some extent the leadership we have had in the past. I remember when we launched emphasis on computers, software, computers and telecom, in early eighties and mid-eighties when Rajeev Gandhi was Prime Minister, everyone thought it was little out of place for a country which needs water, agriculture and other basic needs. In fact at times, people ridiculed our emphasis on these technologies and applications. Twenty years down the road, now we see some major success stories. I.T. has given us confidence. Telecom has connected rural India to urban India and the nation to the world. We have huge foreign exchange reserves to the tune of hundred and sixty million dollars, major success stories in corporate world, global recognition for talent in advanced countries. The key is to really now look at what is it that we can do today for those fifteen years down the road now, in perhaps twenty-twenty when we would look back and say we did plant the right seeds in knowledge initiatives to give us the foundation that we need today and that is the challenge we have at the Knowledge Commission. Commission will not write a report, I told the Prime Minister. We will outline action items as we go along on a regular basis, work with various Ministries to help implement some of these major programmes. We have had three meetings, we have diverse group of people in the Commission. In those meetings we have identified lots and lots of things to do. In particular, we planned to focus on access to knowledge, which relates to libraries, networks, portals, reservations affirmative action programmes so and so forth.

Second topic which we planned to focus relates to knowledge concepts, literacy, primary education, secondary education, vocational training, University education, distance learning.

Third area is application- in industry, agriculture and health. Fourth area is creation of knowledge in Science and Technology, in laboratories, Patents, Copyrights, Trademarks and innovation.

And finally - use of knowledge in improving governance. E-governance to improve transparency, accountability, so on and so forth. We came to look at knowledge from the view point of horizontal partition as to post to typical vertical partition. We have identified almost hundred different things to do of which in the near future we plan to focus on about fifteen. Our methodology would relate to series of internal discussions based on the recommend eight to ten different things to do. The process would include inviting special groups to provide input and ideas and then start formal consultations. Last week, we met with groups of Members of Parliament, Vice-Chancellors, Industry groups. Today, I would like to take this opportunity to launch a debate on the University reforms. Nationwide debate, where we take some of these ten/fifteen points that National Knowledge Commission has been discussing. May be spend next sixty days, Nation talking about it, debating it because there is so much to do and no one group of people can grasp and come up with all that there is to look at. These are very complex ideas, have far reaching implications and there are lot to learn from people who have had experience in these areas. After independence in nineteen forty-seven we have accomplished a great deal in education. Our founding fathers set the right emphasis when they set up major Universities, other institutions like I.I.T.s, I.I.M.s, C.S.I.R., Atomic Energy, Space, so on and so forth. But over a period of last twenty years some of us believe that we have lost some of that edge we have had in higher education. Education itself is very demanding, literacy is perhaps

more important than higher education. Primary education is equally critical but then everything in India is very critical. We have decided to start with three or four key areas in education viz. literacy, primary education, and University education. In all these areas there are conflicting opinions, conflicting priorities, a need for organizational clarity, need to prepare National agenda and it is time now to reflect and create new realities for the twenty first century. Specially, when globalisation, privatization, free market economy and focus on technology is becoming very critical. I.T., Biotech, Nano-tech. all of these disciplines need new thinking, we need to really create new level of leadership in all of these areas and that can only come from higher education. We need to prepare new packages, we must engage, entertain, inform and educate large number of young people today to be able to make a difference going forward in the next twenty years.

Today, we have roughly six million peoples or six million students that we can graduate from University programmes. A country of billion people perhaps needs about twenty billion seats in University system. In a sense we need to quadruple our quantity at the same time we need to improve our quality substantially. How do we achieve these things? We need to look at this from the view point of students, faculty, parents, industry, academicians, governments, i.e. the State-government and the Central-government and really come up with cohesive futuristic plan, which is bold, demanding and something that we execute.

I would like to identify ten points on behalf of the National Knowledge Commission that we would like to throw open for debate.

First is governance: Over the last twenty years our governance at the University level has weakened. We need more freedom, flexibility, accountability, at the management level in the University. To me, Vice-Chancellor has to be the real CEO with complete authority, autonomy,

transparency to go build the best institutions available in the country. We need clarity of roles and responsibilities. We need to really look at existing organizations like U.G.C. and others to see what role they will play going forward. Just the fact that it is called University Grants Commission, the name doesn't makes sense in twenty first century. There is more to grants than building a University infrastructure. We need Universities to have flexibility in budget, to some extent in fee structure and cannot allow governments and bureaucracies to control University system all the time. Government can not really go on intervening the way they have done so in the past in our University system. If we really want to build a whole new culture needed for the twenty first century.

Item number two: We really need fifty national Universities where research is conducted, students can move from one to another of which we need four to eight major Liberal Arts Universities. We have great engineering schools, management schools, we really don't have liberal arts schools. We need liberal Arts School to create leaders for tomorrow. To increase numbers, we perhaps need two shifts in all Universities. Now, these all are wild ideas. There is no way we can quadruple number of students with the kind of resources we have. We will have to tighten our belt. We will have to leave some inconveniences, will have to accommodate the needs of the future and if that requires us to start our programmes at six in the morning to two in the afternoon, at three in the afternoon to ten in the evening, we may have to do it. It is going to be painful for some, but there is no other way to quadruple the number of seats in the University as we reflect on the resources required.

Item number three: Content and the curriculum. We need multi disciplinary approach to education, we need flexibility, we need course-wise credits. Suppose of one exam at the end of the year where a paper gets leaked or the students don't study all year and start cramming in the last month, we got to

have learning and at the same time examining on a regular basis. We need to learn from going to classes in the University and not in the tuition classes. We need innovations, just to give you an example: I am on the Board at the University in the US and recently I attended a presentation at the Department of Electrical Engineering. I was surprised to learn that there were five medical doctors on the staff of the Electrical Engineering. The vertical boundaries as we understand today have disappeared. You need persons with a degree in Computer Science to be a Surgeon, it's already happening! Two weeks ago I was at M.I.T. in Boston. I met with the Chairman of the Department of Metallurgy who happens to be an Indian, of Indian origin and I asked him "I said" what are you working on?, he said on Malaria research. A Nano-technology Professor in Metallurgy working on Malaria doesn't make sense to a conventional mind. You must think out of the box. Engineers, the students of Psychology, Philosophy and all these multi disciplinary education require flexibility to fill up courses you want and not standard programmes that we have today. We must change our course work and curriculum quickly to respond to the need of the market place.

Item number four: Accreditation, ranking, quality control, just practices, customer satisfaction - all of these require new discipline. At the end of the day, our customer is a student and our customer is industry. Can we produce graduates that our industry can effectively use? Today, I know in many businesses people talk about not having enough talent and there are lots of graduates looking for jobs. There is a disconnect. How do we bridge this divide and provide the kind of people industry requires.

Item number five: Teachers: We need better quality teachers. We need more teachers. We need training of teachers. We need to look at their pay-scales, new human resource policies. We need periodic evaluation of teachers and we need to bringing others from outside from teaching community to bridge this gap,

one hand we cannot find enough Science teachers, on the other hand there are lots of scientists who don't teach. There are people who have great background in the Industry, we have not given the opportunity for them to go teach.

Item number six: Research and Development in Industry Interface: Our Universities don't do research and our research scientists don't teach. I don't know why? I don't know why people don't think of these things? Lot of the staff is common sense, but at times common sense is very common around here. Relevant research is fundamental to improving education. We need more R. & D. funding in the University. Over a period of time we have taken a turn where we fund only R. & D. Institutions like C.S.I.R., agricultural research and others, as opposed to funding Universities for research. I will give you an example: Every time I think of Solar Energy research in India, I find that everyone is working on semiconductors and various other forms of Solar Cells and I keep telling that I want's Solar Power Air-Conditioner, which is that big and cost two hundred rupees. Put hundred Ph.D.s give them ten years, hundred crores and say come out with this little black box. That will transform our working environment. We are not thinking big enough. All our thinking is incremental. Because thinking outside the box is very risky in our society and I think in R. & D. we need to push basic research at University level. We need more students in Mathematics, Physics. It is not fashionable today to go into those basic sciences. Everyone wants to go get an M.B.A. and want to investment banker. I think it is about time to put emphasis where it belongs.

Item number eight: Information Infrastructure: We design software for the world, solve the problems of the best of the best but we can't develop software for our own Universities. We still have all manual processes. We all write admission form with hand, can we develop I.T. infrastructure to manage University, to connect University, to share, collaborate, provide transparency, built electronic

Libraries? All of these demands focus on software customize for the University. We need massive networking capability to connect our Universities with gigabyte fibers. Fibers are already there in the country, in fact less than ten percent of our fiber has been laid. I know for sure as a telecom engineer that we have connected gigabyte fiber to thirty two thousand villages in India, but there is no contact, there is no information this fiber has been laid. There are fibers for Railways, there is fiber for Gas Line, there is fiber for private companies, M.T.N.L., B.S.N.L. nothing to connect educational institutions. Can we connect our Universities, High Schools, Science & Technology Laboratories and begin to exchange information that we need to exchange.

Item number eight: Role of private in the higher education: Role of International Institutions in higher education - can we allow our own institutions to go set up Universities abroad? Why can't University of Mumbai go and set up University in Africa? Why should we prevent them from doing it? If we are going to be a global player we must give freedom and flexibility to our University administration to go do things that they need to do. Last week when I heard twenty five Vice-Chancellors for couple of hours, I somehow felt that they know what needs to be done, but somehow they have not been given the backing and the support they need to do.

Item number nine: Funding: We are always looking for more funding. Funding is not necessarily the only item that is going to fix our problems. First, we need to look at how to fix problems with what we have. There is lot of productivity and efficiency locked into the system today. Can we really unlock that and then look at additional funding? I do recognize we need lot more funding because seventy to eighty five percent of our funds at the university level going to salaries. There is very little money for expansion, modernization, development of new programmes, and we are always looking for more funds. As soon as

Knowledge Commission was set up I started getting requests from Universities for fifty crores hundred crores etc. They thought we have been set up to provide additional funding. Universities must learn to raise their own resource to some extent; I know it can be done because higher education can be funded. Government should really focus on funding primary education. Today, if universities do raise more money, Government deducts large amount of money from their allocated resources. We need to really match their funding. But then raising money is not very easy. I give you one example at Harvard University where they have over twenty billion dollar of money raised for the University corpus. They have five hundred people full-time working on fund raising. Fund raising is a piece of art. You need to set up infrastructure, databases, regular communication and continuous follow up. Just because you made a call, nobody is going to give you money. Sometimes you work on someone this year, in five years they will give you something. People don't write a cheque after little bit of persuasion, it needs continuous follow up, creating new programmes, inviting people to special functions and essentially you need to court right kind of alumnus to raise money. And if Mumbai can not raise money for Mumbai University who else can do it? There is no other city in this country that can raise the kind of money Mumbai can raise. May be we need to increase fees little bit, may be we need to do some other things but we must recognize that fund raising requires lot of discipline and commitment.

Finally, the tenth point: We need to examine special programmes, student exchange programmes, teacher exchange programmes, internship, alliances, affiliations, professional courses, interface with the NGOs, rural development programmes, inviting CEOs etc. This afternoon, I had lunch with one of my close friends – Dr.Ashok Ganguli with whom I had worked for twenty years - great Scientist, great business leader. Have you invited him to deliver a lecture at the University of Mumbai? He is in Mumbai! Perhaps not! There are hundreds of

people like this in this city. How do we link them up? If you invite them today, build that relationship, may be five years down the road they will donate something. In IIT Chicago, where I am on the Board, recently we just got surprised by donation from someone with fifty million dollars cash. One person, this person went to I.I.T. in forties and when he died rather than leaving money to family, he decided to leave the whole assets to I.I.T. But this requires lot of work. So when we look for special programmes, think of wild ideas outside the box. I am puzzled that the University of Mumbai does not have a film School. You are sitting next to the Bollywood. You got to be the capital of film school in this country. Two years ago, I told the Director at I.I.T. Powai, why doesn't he start a Bachelor's programme in Film Technology? He liked the idea, I gave him a note, talked to him and they are still discussing it. We must act on these things quickly, because good ideas also require good decisions, which need to be timely. We need lots and lots of more ideas from people like you. We need your input. We need you to participate in the debate. Once agreed, we need your support. We need public support to pressurize Members of the Parliament to make hard decisions. We need to create public opinion on tough choices today. The tough choices could be, two shifts at every University. First reaction is why should I get up at six O'clock? I am used to getting up at nine! Well somebody will have to! There are lots and lots of ideas, which will require us to discuss and think of long term plans. There are no quick fixes. We must take risk and build leaders of tomorrow that we need. We must focus on revamping our higher education system. We must aim at the best of the best in the world. We must make India education capital. Look at our history - we had Nalanda, we had Takshashila. Our diversity is a great tool to improve education. We offer lots-n-lots of opportunities but we are locked up in the recent past. I believe there are unique opportunities at this point in time to re-examine University education. Take some bold decisions, make some mistakes but move forward. We look to your support from media in publicizing some of these ideas, inviting right input and build the people we need

to build new India. In twenty years I hope we can get to a point where we don't have to talk about basic human needs. We hope the problems related to energy, water, sanitation, literacy is behind us. I would thank you for giving me this opportunity. Mr. Vice-Chancellor, I want to tell you that hospitality has been superb. I am delighted to be with you and I hope this platform that you have given me to launch initiatives on University reform will create debate, discussions. We do not have all the answers, but I know we can get answers in this country, if we put our talent together. All I want to do really is to create list of ten things and I look to you for help moving forward.

Thank you.

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