

# **Savitribai Phule Pune University**

## **Convocation 2015**

March 22, 2016

### **Convocation Address**

**Anil Kakodkar**

Hon'ble Vice- Chancellor of Savitribai Phule Pune University, Prof. Wasudeo Gade, Members of management and academic bodies of the University, members of faculty, staff, students and their parents present here, distinguished invitees, ladies and gentlemen.

Let me at the outset thank Hon'ble Vice-Chancellor and the authorities of the University for inviting me to this 109<sup>th</sup> convocation. Savitribai Phule Pune University is clearly one of the highly ranked Universities in the country. Besides its departments and affiliated colleges, a number of very prestigious research laboratories and institutions are associated with the University including some located on the campus itself. The University thus has a comprehensive institutional framework not only for studies in a wide range of disciplines but also for a broad spectrum of research and its linkages with the intended beneficiaries. I have had several opportunities to interact with the University and so I am very happy to be here.

Convocation day is a special day in the calendar of an Institution of learning. It marks the culmination of a phase of learning and after having satisfied that the student is now ready to face and contribute to the world at large, in the chosen domain of learning and training, as a worthy individual; the elders give the final advice and blessings for further journey that the student is embarking upon. It is a solemn occasion for the students and also the teachers. The bond between the teachers and the student that is supposed to have been built through years of mentoring brings in an emotional content to the Convocation day. I wish to

use this occasion to thank the teachers who in their own way have contributed to shaping the young minds while they are with the University.

My congratulations to all students those are graduating today. Some of you, who have been specially recognized, deserve our highest appreciation. All of you have gone through your respective courses of studies and have been adjudged to be worthy of the degrees that have been awarded to you. You are now ready to face the exciting world out there. As an educated individual you have to be an important part of the nation building process; through your respective capabilities that you have acquired here. Today there is ample scope for innovation and entrepreneurship. The way our country is evolving, the opportunities for the capable ones will continuously expand. I wish all of you graduating today a very successful career ahead. May all your dreams be fully realized.

I have spent almost entire professional life of mine on development of national capability in the area of atomic energy. Last few years, I am devoting time on challenges related to energy, education and leveraging science for societal development. A key aspect that I have realized as a result of this experience is the need to transform our education to make it a more effective human resource building exercise that empowers every youth to become a prime mover to take the country forward and to add net value rather than become a net burden on the society. This must happen in the present day context. At the same time our education system should also recognize the needs of emerging tomorrow and lead the efforts to prepare our society for the new knowledge era that is fast emerging. I would like to use this occasion to talk about this theme.

Talking about the country as a whole, two third of our people still live in villages. Their average income is only about half of the average income of their urban counterparts. Creating conditions to raise their

income to become comparable or better than what is possible in urban areas, is in my view the critical challenge before our education and development programs. While the rural habitat that perhaps took shape in an agrarian era and the urban habitat that probably became the preferred choice in the industrial era, are here to stay, the new age society is more likely to be driven by knowledge based economy and could equally flourish in both rural as well as urban habitat. Knowledge technologies do facilitate a much higher degree of democratization and decentralization. Under such a condition rural habitat could well become the preferred alternative on account of the possibility of greater proximity with nature, provided there is adequate supporting infrastructure. We thus have an opportunity to not only bridge the urban rural divide but also to facilitate rural youth, who constitute a far bigger segment of our so called demographic dividend, to leapfrog to realize their full potential leveraging the opportunities that would be available in the emerging knowledge era. This could actually mean a quantum jump in the India development story.

How can this be done? The answer lies in creating greater livelihood opportunities in villages well beyond agriculture and allied activities and ensuring that the young students, as they come out of schools and colleges, are able to capitalize on these opportunities. Thanks to game changing developments that have taken place in respect of cyber space, ICT technologies and direct enablement of people that they can cause; each youth can now put together a decent earning opportunity for himself or herself provided he/she, through the education imparted, becomes knowledgeable enough about the socio-economic opportunities around, either existing or newly created and has acquired the skills to benefit from them.

A time tested way to facilitate a holistic learning environment necessary for realizing such an objective is to link imparting of knowledge with socially useful productive work (SUPW) consistent with modern times while in our education institutions. Making SUPW close to

real world socio-economic environment would require linking education with real life development activities. Through this mode, the education and research domain can simultaneously contribute to capable human resource as well as to new inputs for our society as well as our industry through:

- 1) New innovations based on latest knowledge acquisitions ahead of others. This would create a superior edge for our country in terms of new products and processes giving us a competitive edge in the global market,
- 2) Linking knowledge institutions to ongoing socio-economic activities in business/industrial entities to overcome obsolescence issues and maintain/regain their competitiveness and
- 3) Exploring issues of development of strata at or nearer to the base of socio-economic pyramid and devise as well as implement solutions to minimize disparities in our society.

I do believe that linking education and development this way would significantly enrich higher education while at the same time paving the way for development on a more sound footing in a bottom up mode.

A typical framework to pursue such an approach, is to set up what I call a CILLAGE (city in a village), a knowledge centre within a rural domain with modern research and living facilities to attract capable researchers. Such a CILLAGE could be a standalone rural university, a rural campus of an existing university or a higher education institution in a rural area. Each such CILLAGE could establish several technology demonstration centers in the neighborhood for the benefit of the local population. Such centers could house a range of relevant technologies that can facilitate higher livelihood with a much broader outlook much the same way as Krushi Vidnyan Kendras (KVK) do in the context of agriculture. Initially such technologies could be sourced from outside but eventually one could expect a significant technological contribution coming

from CILLAGE itself. We can call such demonstration centers as **Advanced Knowledge based Rural Technology Initiative**, AKRUTI for short. To facilitate linkages between CILLAGE and AKRUTIs in terms of training, capacity building, problem solving and identifying new research problems, a Rural Human and Resource Development Facility (RHRDF) should be established in each CILLAGE. RHRDF in my view would not only benefit the neighborhood through technology and capacity building but also the knowledge institution hosting it through greater relevance and impact of research being carried out. Depending on the academic and research excellence in the institution, I have no hesitation to say that through right choice of original problems needing solution; we can even expect the research in such institutions to become world class.

In addition to promoting technology enabled development and related livelihood, a CILLAGE can also contribute to a new paradigm in the school education around. A high bandwidth node at a CILLAGE (for ex. NKN) could facilitate broad band connectivity in about 20-25 km radius surrounding the CILLAGE through low cost broad band wireless technology thus enabling schools in rural neighborhood to reap the benefits of modern day ICT capability. Proximity of AKRUTIs with schools would further enrich education through exposure to real life SUPW relevant to new technology era that we seek to usher in.

I believe that such an ecosystem would contribute to improved quality of education, higher livelihood and an ambiance of innovation that would move the neighborhood upwards on the path of socio-economic development consistent with the objective set earlier.

As a part of activities promoted by Rajiv Gandhi Science and Technology Commission, with which I am associated, these ideas are being experimented upon with the support of a number of institutions and individuals at SVERI Gopalpur near Pandharpur. Another experiment has

been initiated at Gondwana University Gadchiroli to try out these ideas in the context of forest and tribal neighborhood.

For students in higher education system to be fully equipped to be able to effectively engage with development and growth processes in the society, the nation and the world at large, we must pay simultaneous attention to multiple layers of learning. These layers include,

- 1) Learning all the way up to the frontiers of knowledge in chosen subjects in an ambiance of research that continuously pushes those knowledge frontiers forward,
- 2) Gaining proficiency and hands on skills in procedural knowledge related to chosen areas of new creation, services and other socio- economic-cultural activities, and
- 3) Engagement with society and environment in the context of learning being pursued and exposure to basic human values.

Unfortunately, today our education institutions do not provide a comprehensive ambiance for these layers of learning. In addition, we have barriers for students to benefit from a holistic learning experience through participation in all these layers simultaneously. In a CILLAGE we should be able to eliminate this serious shortcoming.

Today, our total expenditure on R&D in India is comparable to or larger than countries like Israel, Canada, Sweden, UK, Switzerland, Finland etc. and our spending in R&D per full time equivalent scientist is also comparable with countries that have the highest spending in this regard. India should thus have been a technology super power at least comparable to countries listed above. Unfortunately, barring a few exceptions, we are still very dependent on other countries for our technology needs. While there is definitely a need to enhance our R&D spending, the need to bring in better accountability in terms of outcomes in our S&T system is perhaps equally, if not more, important and urgent. This is a challenge that our knowledge institutions and our industries must

meet at the earliest. A CILLAGE should be able to meet this challenge squarely in the context of Rural India which soon is poised to become a large market even when seen in global perspective.

It is important that our research is driven by important problems rather than just pursuing what can be done or what is more fashionable. Handling important problems – and they may be important either in the knowledge context or in the technology context - by and large would need a multidisciplinary approach involving a large number of researchers or teams working together. In either case, where ever possible, there should be translation of new research findings to new technology products. The ecosystem for this purpose should also involve entrepreneurs along with other professionals capable of supporting such a translation effort. I am aware of our Universities being conscious of this need and their making some efforts in this context. However much more needs to be done.

There are many possibilities of technology being brought to bear on societal issues. Low cost hi-tech solutions capable of meeting the needs of poor people in remote and rural areas are becoming increasingly important for a country like India and many other developing countries. Such solutions should be capable working within the expertise of local people rather than needing high level experts who are unlikely to be available locally. Our students getting exposed to such developmental activities would not only give them a good problem solving experience but also emotionally bind them with India in true sense.

We need to recognize that the above approaches would invariably involve interdisciplinary efforts involving sciences, technology, engineering, medicine, humanities, economics, management and other disciplines depending on the objectives of a particular development effort. Opportunities for students to participate in applications of such interdisciplinary efforts to address a particular challenge, enable a holistic

learning experience for them. Alongside, this builds the capability to focus R&D to solving real life problems that need to be solved rather than looking for problems that can be solved through research one is engaged in. Quality of education as well as of research improves considerably in the process.

Technology is likely to change our lives in multiple ways. Clearly technological competence is the key to our staying ahead in today's competitive world. We need to be conscious about the impact of new technologies on our lives and prepare our societies to benefit from them while preventing their ill effects. Opportunities and threats created by increasingly competitive interconnected world, the potential for greater disparities if the policies are not managed well and threats to our time tested value system, are some of the major challenges before our society today.

We must acknowledge that apart from people who engaged themselves in mass movements at different times, a very large number of individuals have made key contributions in shaping the societal evolution in a healthy manner and in the right direction through their wisdom, sustained work and passionate contributions. We need such people, in large numbers, who can guide and shape the society as it evolves through knowledge and technology driven transitions on one side and rapid mixing of cultures driven by instant communications that take place today, on the other. Such people, through their research and analysis based deeper understanding and foresight, can present an authentic assessment of the transitions around, create innovative approaches to maximize the gains and minimize the threats and help prepare our youth with the capability to effectively deal with the evolving situation. The very fact that Indian traditions and culture have survived through centuries of external influence gives us the hope about our societies responding correctly to the changing paradigm.

All of us associated with knowledge activities one way or the other, have the opportunity to be a part of such people both by ourselves as well as through the students whom we teach and mentor. Through our teaching which should be all the way up to the frontiers of knowledge, through our research which should push the frontiers of knowledge forward, through development of technologies at the cutting edge, through nurturing a spirit of innovation and entrepreneurship and with strong commitment to our time tested value system, we have the opportunity to nurture individuals who can be an important part of people who can shape the destiny of our nation. We all must resolve to make that happen through our respective pursuits of scholarship, research and engagement with society and industry around.

I do wish that all of you would give some serious thought to these issues and decide your respective course of action. It should be our collective effort to progressively move towards making the world a better place to live. Through a lifelong learning process and maintaining our knowledge institutions, industry and society interconnected with each other, each one of us, regardless of career we decide to pursue, can meaningfully contribute to this objective. After all we are all here in this world to play our respective roles. Our happiness and joy of life depends on how well we play our roles.

To dear students, I would once again wish all of you well in your further pursuits. I am certain you would rise progressively in your respective careers. I do hope that as you rise, you will retain in you a spirit of trusteeship and contribute substantially to your roots, the society around, the institutions that brought you up and the nation at large. It is this spirit of trusteeship and the desire to support others who were not as fortunate or as successful as us that makes this world a better place. We must remember that our happiness depends on the happiness all around us.

Once again my best wishes to you all.