

WITH DIVYA DIWAKARAN (CURRENT STUDENT)

AN AFTERNOON WITH BITS PILANI'S NEW DIRECTOR

Dr. LK Maheshwari talks about the last 30 years at BITS, his vision of the future, the introduction of the color TV to Pilani, research, admissions and much more in this candid interview.

Shall we start right from the beginning sir? Tell us something about your life. When did you first come to BITS?

I came to BITS in 1965 for studying in a MSc (Tech) Electronics program which was a 2 year program which I completed in 1967 and then I joined the PhD program in BITS which went up to June 1971 and since July 1971 I'm in the faculty of BITS.



So what made you stay here all these years?

Well, the environment of Pilani, the affection of the students and the system of education followed here in BITS, all these contributed to my staying here. On the way I did have other opportunities including one by our Chairman to be the CEO of their sugar industries in UP. I declined it however, because I thought that environment would not suit me and continued to stay on here.

30 years has been a really long time. You must have held a variety of positions here?

Well, I started of as a Lecturer here in 1971. In 1973 when the Instrumentation program came into being I was called upon by the then Director, Dr. Mitra to take the lead. At the time it was a program with EEE. Later when restructuring took place in 1976 and Instrumentation got formed as a separate unit I was appointed Chief of Instrumentation.

This I continued till 1986, when I was made Dean, Research & Consultancy. Of course before that in 1976 I was given a promotion, a double promotion if you may call it, from Lecturer I was made Associate Professor and in 1982 I became full Professor. In between I served as Acting Dean, ID and EHD and in 1999 when Prof Nagrath retired I was appointed Deputy Director, Academics. On 24th Nov 2003 I was given responsibility of being the Director of BITS, Pilani campus in view of the 3 campuses we have now.

So this is the story, but it is teaching that I have always like most, the opportunity of interaction with students and this is has given me great strength.

What made you choose teaching as a career? After having graduated in Electronics way back in 1971, there might have been ample opportunities then?

To be very frank, I really had never planned for this. I came from a middle class family and my father always wished that I go in for higher studies. So I took up the MSc. program here. Upon completing it I was offered a research fellowship. I completed my PhD as a full time student with a stipend of Rs.400 a month, I was one of the first full time research

fellows in the Engineering faculty at that time. After getting the PhD I was given an offer to be part of the faculty at REC, Trichy. However I was asked by the Head of the Department as to why should I not join in here itself. They offered me a position as Lecturer with the same basic as Trichy was offering, so I joined here. So if you see it is really the circumstances that put me into teaching.

But after having joined teaching, I found it a very noble profession. As a teacher you have to keep higher goals of motivating young minds which I feel I have been successful at to a certain extent, I do not know for sure. The satisfaction of seeing bright young faces, I think no amount of money can match and I have been particularly fortunate in receiving this affection and appreciation from the students.

Did thoughts of going abroad never cross your mind?

I have always believed that I should go as an equal. I don't want to go to any place where I'm not respected for the purpose I go for. So when opportunities came by, I went. In 1999 I visited, on behalf of the Institute, some of the Laboratories and Institutes abroad for collaborations with us which I though was a respectable situation. I have had the opportunity of meeting several professionals, administrators and I feel they have respect for us now. When I respect myself, I earn it from others.

Also I never tried to go abroad for any studies, having completed my PhD here. But my papers and my contributions to the field- it was Bipolar Junction Transistors at the time were appreciated and I did receive some invitations to work there but it just so happened that I continued to stay here.

Moving away slightly....., any particularly memorable moments in BITS that you recollect?

Memorable moments... one of them was when I was given the



responsibility to be the In-charge of the Instrumentation group. I must have been around 30-31 then and in those days giving such important responsibilities to young people was unheard of. So that was exciting, not because I got a position but because I was given the opportunity to work and show something and trust was placed in me to fulfill the requirements of the job.

Another memorable moment would be when I was awarded my PhD. PhD is a process shrouded with uncertainties regarding its completion. Looking back now it seems like a simple affair but back then it was a big moment.

Then another one I recollect is during the ASIAD, 1982. We had no television in Pilani at that point of time and I being In-charge of Instrumentation was given the task of telecasting live ASIAD in Pilani and in 'color'. It was the first time color television was introduced in the country. There was a lot of experimentation involved, putting antennas on the roof of ET (Engineering Theatre) and other places and the moment we received the signal I could see the

uncontainable excitement among all the students, everyone jumping, completely thrilled with what they saw. We had about 2-3 TVs, a Sony TV one of the students had bought as part of his project. The programs

were aired in rooms- M31-M33 (currently 2215-2217 I think), we put mats on the floor and this continued throughout the ASIAD week. It was very exciting for me as project in-charge along with Prof Raghunathan and is one of those particularly memorable moments.

I can only imagine. Today some transition of that magnitude is difficult to perceive. Getting Internet connection in our rooms was big but I guess not so much as this one was back then. What do you think are the biggest challenges facing BITS today?

The biggest challenge would be to come at the top of the education system. At BITS, we have constantly strived to experiment and make improvements and have been quite successful. Other challenges would include:

1. To have research linkages with the industry. We currently have educational linkages in terms of Practice School, now it has to extend to research which will help us develop useful technologies for the country.

2. As a technological university we have to develop entrepreneurship through technologically driven projects. This development needs to take place in BITS through the promotion of entrepreneurship among students. According to me this is what will be the salvation for the country. For, every person who decides to become an entrepreneur will in turn generate at least 10 more jobs thus increasing employment opportunities.

3. Another challenge is to fulfill social aspirations. As a university we cannot sit in 'ivory towers'. We need to be aware of societal needs and take up some social responsibilities. Let me give you an e.g. Water is a crucial problem in India, Rajasthan in particular. If we as a university can do something in the areas of rainwater harvesting, water purification, making water potable for drinking, it could be a great contribution to society development. And there are indications now of interest in such areas. Various international groups, our Alumni are coming into the picture, who are ready and willing to participate in such projects.

4. Another issue is whether we can do something to remove illiteracy in the country. Our contribution could be in terms of developing low cost lessons, technologies that can be used by many at large. It should be made a mission.

5. Also I see it as a challenge to be able to inculcate habits among young students and the faculty as well to be conscious of their social responsibilities. The feelings of the need to serve the community need to exist in their minds. Only then can we dream of a prosperous India. Like Dr. Kalam has said a developed nation can be built only by responsible citizens and I think it is the challenge of ours as a university to be able to produce such citizens.

These are I think the main challenges we face. We need to be a knowledge society. Every BITSian has to be able to prove that he can be a leader in technology,

politics, administration whatever, but with a mission in mind- that India be a prosperous country in the shortest possible time. We have the potential; we need to unleash our energies to achieve our potential.

But currently there isn't much of a research focus in BITS. Is anything being done in that regard?

Well, I can tell you that some efforts have been made. I was very happy to see some of the exhibits during APOGEE (the Academic fest) where some reliable projects in rural development areas in terms of devices for sowing seeds, low cost energy devices were displayed. There are pockets; we need to learn how to develop such ideas to make them feasible and useful. The seeds are there but we need to take it to a stage where we can convert it into a product and give it a technical name. We have a long way to go. We are proceeding in the right direction; however a bigger thrust is needed.

There is the Technology Incubation Centre (TIC), NEN projects, rainwater harvesting projects and others. What we need now is to work on them, develop them and see that they are economically viable and achieved in a set time frame- to get into a mission mode. Once appropriate missions are set, we can achieve them.



Now that you are the Director of BITS, Pilani, what are your visions for BITS?

My vision is to bring a sense of pride among all students and faculty of the institute, to make them feel they are part of a family- a family which means business, which means excellence. Also, of course, our vision is clearly put down in the bulletin in the words of our founder chairman, I quote, "to provide for and otherwise protect education and research in the fields of Technology, Science, Humanities, Industry, Business and Public Administration and to collate and disseminate in such fields effective ideas, methods, techniques and information as are likely to promote the material and industrial welfare of India" and to "train young men and women able and eager to create and put into action such ideas, methods, techniques and information". This was the vision of the great legendary Shri G.D. Birla. This remains to be our vision and I think it is up to the individuals now to take it upon themselves to work towards fulfilling this vision.

Like I said earlier, the need now is to set small missions to be achieved in a set time frame. I would like to see Pilani take the lead and set examples in terms of achieving developmental goals. Pilani should be known for something, for e.g. it could be for the development of good educational material. A large number of engineering colleges in the country today do not have very high standards of education due to lack of good teachers and other factors. We could put in some efforts in the area to produce fruitful results. With the objectives in place, let there be entrepreneurs

who will take up the task. We have CEL (Centre for Entrepreneurial Leadership) here with a group of individuals highly committed to the development of entrepreneurship who will be able to guide them and provide assistance and the Institute will provide full support for such endeavors.

What about the BITS, Alumni? What are your views on the changes in the level of BITS, Alumni interaction with Institute over the last 25 years?

The Alumni have become much more active now and it is a positive sign for the Institute. What has become very satisfying is that they have reconnected with the Institute emotionally too. Of course, earlier too they have been there but now I think they have come together as a group. For e.g. the BITSCONNECT project has become more than just a project now, it's become a sort of mission to connect with BITS. From different parts of the world they are coming together for any cause and this has been particularly satisfying.

How do you see their role in the development of BITS, Pilani?

Well, the Alumni have shown a lot of interest in our projects. BITSCONNECT has been one of them. They have shown eager interest in other projects too in terms of entrepreneurship development. They have shown active participation in projects of societal importance like drip irrigation, drinking water for Rajasthan etc. At Nokia, they have helped establish scholarships. It is the Alumni that are active in all these projects and I know they will continue to be actively involved.

But more than that, I think what is also required now is that they spend time, a sabbatical in Pilani. If the Alumni can come for a period of 3-4 months here then they will become active partners and that's when it'll serve the BITS community more. What I seek from the Alumni is their commitment to spend time, starting from say 15 days to a month, a few months up to

a year even and contribute to the academic growth of the Institute in special areas - society projects, research projects or any other area of their interest and the Institute will be happy to appropriately compensate them and provide them with necessary facilities during their stay here. So this is an appeal to the Alumni, to spend some of their time here in taking up courses, research projects and entrepreneurship activities. We would like to create the same culture of opportunity here like it exists outside, like in the US for e.g. where everyone is driven by a cause and work towards its accomplishment. Let Pilani be a testing bed for this and the Alumni can be a part of this endeavor. This will be my expectations from the Alumni.

There has been a lot of talk about the process of admissions into BITS at the undergraduate level, doubts regarding whether the existing process is really the best one to ensure we are drawing the best talents from all parts of the country. Are there any plans to change the same?

Right now our admission procedure is under discussion in the courts and we are currently defending it. I am not saying that what we have currently is the best, but what we have is a process, a process that gives us students who have a normalized percentage greater than 98%. The process can be altered. But what is required is a national testing scheme which we have suggested to the government, where students have the opportunity to improve their scores and this score obtained can be used by them to apply all universities in the country, something on the lines of the GRE and then the Institution should be allowed to finally select its students. What the government insists today is that it will conduct an All-India test and counsel the students and send them to us, which is not acceptable to the Institute. We have a system, which we are proud of and any system chosen has to be such that it maintains the autonomy of the Institutes. This is the

fundamental issue towards which we are working.

Is there going to be any significant changes in the admission process for the next academic year?

Right now we are making marginal changes. For e.g. for students from the CBSE syllabus we might take them separately from different zones, normalizing their marks with that of the zone's topper. Similarly for Maharashtra and Jammu & Kashmir. We have also proposed to the government the idea of conducting computerized testing, a common test for students all over the country which we are prepared to take up. Right now the matter is subjudice, once the courts clear it then we can think further on those lines. So this year we'll be admitting by our own methods with a few marginal changes as I mentioned earlier which could give a reasonable spread.

Going back to the talk on teaching as a career what do you have to say to the current generation to take it up?

Society develops a norm about what a developed person or a developed society is. In our society unfortunately there is not much importance given to teaching, which is why not many are attracted to it. But if you look at say countries like Canada, teachers in universities are highly respected. So I think as a society we have to develop a sort of faith in the community of teachers. Also it is essential that teachers also behave appropriately. They need to take pride in what they do and have genuine commitment. Teaching is not an alternative to livelihood. My message to all young students who would like to go ahead and get into a teaching profession and have the commitment is to never harbor feelings that it may not be worthwhile. It depends on how passionate you are about it, there is nothing else in this world that can make you as happy. Good teachers will always be respected, they have never been known to earn highly but the amount of respect and

satisfaction received more than compensates for it.

Is BITS doing something to attract good faculty? Like you said earlier, you were offered the chance and then it got you interested. Are such things happening even now?

What we normally do is we place an open advertisement in leading newspapers both for in house students as well as outsiders. Then we have a very innovative recruitment method where if required we call the applicants to deliver a lecture here in Pilani. The recruitment committee consisting of all Deans listens to them and then if found suitable we offer them a post right up to Professor right across the table. There is no need to wait for approval or sanction from any other committees.

We also conduct Intensive Teaching Workshops with about 20-30 teachers enrolled in it every semester, where the art of teaching is taught. In selective areas we conduct subject workshops as well, providing opportunities of discussions in upcoming topics in the field. Opportunities to attend conferences are also given. We have now also provided a special contingency fund to the entire teaching faculty, Rs.6000 for Professors and Associate professors, Rs.5000 for Lecturers and Assistant lecturers and Rs.2000 for the Teaching assistants for their own professional activities. They can use it to purchase books, stationery, subscription to journals etc.

We now have a new campus at Goa. How different is that going to be from Pilani?

BITS, Goa was set up by the Chairman Dr. K.K. Birla with a view to contributing something towards higher education in Goa when an opportunity was given. Zuari Industries with whom they have high involvement, offered land, about 180 acres at a prime location at a very nominal lease rate. Further expansion at Pilani is ruled out because then there'll be

severe water shortage, so when this opportunity came by it was taken up. Also Goa currently does not have any good institution of higher education.

BITS, Goa will have the same model; it will be another Pilani at Goa. The same methods of education, the degree will be from BITS, Pilani. Teaching, evaluation, Practice School everything will be the same. Already about 30 faculty members from here have been posted there. This project is big, with a budget of over 100 crores. It has modern buildings, classrooms that will be air-conditioned because of the climatic conditions of the place, hostels are built on modern lines, and there is no fence/boundary wall for the girls' hostel! (Laughs). Its not that we are giving more freedom, just the concept of a wall that is removed. The aim is to develop a township

Lastly, I come to that inevitable question of comparison of BITS with the IITs, something which I think every BITSian either loves or loathes doing. What do you think are our strengths and weaknesses compared to the IITs?

IITs have some strengths in their own areas because they have developed well. We are certainly proud of the IITs as a nation. Their resources essentially come from the governmental side. Also since their faculty have been involved in a lot of active research projects right from the beginning they have an edge over us in terms of attracting industrial projects and industrial funding. On the other hand on the education front, in classroom teaching BITS remains ahead. In the methods of documentation, the flexibilities in course structure, the elaborate planning of instruction, registration, counseling, which are

through different methods. So let innovations flourish, let different systems be derived out of this diverse country and the best should survive.

A challenge for BITS will be to take on competition from the world's best universities now because education is going to be created as a service by 2005 under the agreement of GATS of which India is a member which essentially means that if any foreign university, say Stanford, MIT etc. wants to set up a campus here in India they can. A fundamental goal of BITS would be to attract best students and faculty to take the journey on.

Well, that's really their methods, the magazines need to publicize themselves and also inform the society. It's a sign of good journalism to inform the society what's best. They have their own

means and data by which they come to such conclusions. So if we are good and among the best, it will be published. Now we have to see that each student, each faculty member, each person who is responsible for any activity in the BITS system works towards being the best in all aspects and take the initiative for the same. You need to see what you can do to give back something to BITS. When I teach, I need to teach the best, if I'm a student I need to study well and this is what will bring most satisfaction.

Thank you so much sir, for your time and patience. It has been really wonderful talking to you.

Thank you. I wish all the students the very best and that they do well in whatever career path they choose and belong to that great community of BITSians. †



there like here in Pilani. The significant thing is that it will be a full fledged campus like BITS, Pilani unlike the many engineering colleges in the country which are built at a budget of about 3-4 crores. We have been receiving a lot of support from the Education Ministry in Goa too in the efforts.

highly structured in BITS. The concept of Practice School is something we take pride in, something which none of IITs have dealt with. So it is in these aspects that the IITs have to learn from BITS and it is with these that we are able to compete with the IITs. Both the IITs and BITS draw good students from all over the country