

'Teachers Should Be Role Models'

Speech by Dr A.P.J. ABDUL KALAM
(on Teachers' Day 2003)

'A student spends 25,000 hours in the campus. The school must have the best of teachers who have the ability to teach, love teaching and build moral qualities' - A.P.J. ABDUL KALAM (Text of Speech given on 5 Sep 2003)

Dear listeners of All India Radio and teachers, my greetings to all of you.

I am talking to you on the special occasion of Teachers' Day. On this day, we gratefully remember the great educationist Dr Sarvepalli Radhakrishnan, whose dream was that "Teachers should be the best minds in the country". Hence, Teachers' Day is very important for all our people, for our students and even for all the parents, as the teachers lay the foundation for creating enlightened citizens for the nation. On this day, I would like to recall three teachers who helped me in shaping my life.

To begin with I am going to talk to you about my father Janab Avul Pakir Jainulabdeen, as a teacher. My father taught me a great lesson when I was a young boy. What was that lesson? It was just after India got Independence. At that time Panchayat board elections took place at Rameswaram. My father was elected Panchayat Board member and on the same day he was also elected the president of the Rameswaram Panchayat Board. Rameswaram Island was a beautiful place with 30,000 populations. At that time they elected my father as Panchayat Board president not because he belonged to a particular religion or a particular caste or spoke a particular language or for his economic status. He was elected only on the basis of his nobility of mind and for being a good human being. Dear listeners, I would like to narrate one incident that took place on the day he was elected president of the Panchayat Board.

I was at that time studying in school. Those days we did not have electricity and we used to study under ration kerosene lamps. I was reading the lessons loudly and I heard a knock at the door. We never used to lock the door in Rameswaram in those days. Somebody opened the door, came in and asked me where my father was? I told him that father had gone for the evening namaz. Then he said, I have brought something for him, can I keep it here? Since my father had gone for namaz, I shouted for my mother to get her permission to receive the item. Since she was also on the amaz there was no response. I asked the person to leave the item on the cot. After that I continued my studies.

I used to learn by reading aloud in my younger days. I was reading loud and fully concentrating on my studies. At that time my father came in and saw a tambalum kept in the cot. He asked me "What is this? Who has given that?" I told him, "Somebody came and has kept this for you". He opened the cover of the tambalum and found there was a costly dhoti, angawastram, some fruits and some sweets and he could see the slip that the person had left behind. I was the youngest child of my father, he really loved me and I also loved him a lot. He was upset at the sight of the tambalum and gifts.

That was the first time I saw him very angry and also that was the first time I had got a thorough beating from him. I got frightened and started weeping. My mother embraced and consoled me. Then my father came and touched my shoulder lovingly with affection and advised

me not to receive any gift without his permission. He quoted an Islamic Hadith, which states that, "When the Almighty appoints a person to a position, He takes care of his provision. If a person takes anything beyond that, it is an illegal gain." Then he told me that it is not a good habit. A gift is always accompanied by some purpose and a gift is a dangerous thing. It is like touching a snake and getting the poison in turn. This lesson stands out always in my mind even when I am in my seventies. This incident, taught me a very valuable lesson for my life. It is deeply embedded in my mind.

I would like also to mention the writings in Manu Smriti which states that "By accepting gifts the divine light in the person gets extinguished". Manu warns every individual against accepting gifts for the reason that it places the acceptor under an obligation in favour of the person who gave the gift and ultimately it results in making a person to do things which are not permitted according to law.

I am sharing this thought, with all of you, particularly the young ones, do not be carried away by any gift which comes with a purpose and through which one loses his personality greatly. Do you think, you can follow this in your life? I will be very happy if you can practice this sincerely.

When I think of my second teacher, I am reminded of my childhood days when I was studying in 8th class at the age of 13. I had a teacher, Shri Siva Subramania Iyer. He was one of the very good teachers in our school. All of us loved to attend his class and hear him. One day he was teaching about a bird's flight. He drew a diagram of a bird on the blackboard depicting the wings, tail and the body structure with the head. He explained how birds create the lift and fly. He also explained to us how they change direction while flying. For nearly 25 minutes he gave the lecture with various information such as lift, drag, how the birds fly in a formation of 10, 20 or 30. At the end of the class, he wanted to know whether we understood how birds fly. I said, I did not understand. When I said this, the teacher asked the other students whether they understood or not. Many students said that they also did not understand. He did not get upset by our response since he was a committed teacher.

Our teacher said that he would take all of us to the sea shore. That evening the whole class was at the sea shore of Rameswaram. We enjoyed the roaring sea waves knocking at the sandy hills in the pleasant evening. Birds were flying with sweet chirping voice. He showed the sea birds in formations of 10 to 20 numbers. We saw the marvellous formations of birds with a purpose and we were all amazed. He showed us the birds and asked us to see that when the birds fly, what they looked like. We saw the wings flapping. He asked us to look at the tail portion with the combination of flapping wings and twisting tail. We noticed closely and found that the birds in that condition flew in the direction they desired. Then he asked us a question, "Where the engine is and how it is powered"?

The bird is powered by its own life and the motivation of what it wants. All these things were explained to us within fifteen minutes. We all understood the dynamics from this practical example. How nice it was. Our teacher was a great teacher; he could give us a theoretical lesson coupled with a live practical example available in nature. This is real teaching. I am sure many of the teachers in schools and colleges will follow this example.

For me, it was not merely an understanding of how a bird flies. The bird's flight entered into me and created a special feeling. From that evening, I thought that my future study has to be with reference to flight and flight systems. I am saying this because my teacher's teaching and the event that I witnessed decided my future career. Then one evening after the classes, I asked the teacher, "Sir, please tell me, how to progress further in learning all about flight." He patiently explained to me that I should complete 8th class, and then go to high school,

and then I should go to engineering college that may lead to education on flight. If I complete all my education with excellence, I might do something connected with flight sciences. This advice and the bird flying exercise given by my teacher, really gave me a goal and a mission for my life. When I went to college, I took physics. When I went to engineering in Madras Institute of Technology, I took aeronautical engineering.

Thus my life was transformed as a rocket engineer, aerospace engineer and technologist. That one incident of my teacher teaching the lesson, showing the visual live example proved to be a turning point in my life which eventually shaped my profession.

A student during his school life upto 10+2 spends 25,000 hours in the school campus. His life is, more influenced by the teachers and the school environment. Therefore, the school must have the best of teachers with ability to, teach and love teaching and build moral qualities. Teachers should become role models. Similarly, the student must be alert to build himself with best of qualities and to get ignited with a vision for his or her future life.

I would like to share with you another experience with my teacher Prof. Satish Dhawan. First, I worked in Delhi with the Ministry of Defence. Later I joined the Defence Research and Development Organisation (DRDO) in 1958 at the Aeronautical Development Establishment at Bangalore. There with the advice of the Director, I took up the development of hovercraft. Hovercraft design needed the development of a ducted contra-rotating propeller for creating a smooth flow balancing the torques. I did not know how to design a contra-rotating propeller though I knew how to design a conventional propeller. Some of my friends told me that I could approach Prof. Satish Dhawan of the Indian Institute of Science, who was well known for his aeronautical research, for help.

I took permission from my Director Dr Mediratta and went to Prof Dhawan who was sitting in a small room in the Indian Institute of Science with a lot of books in the background and a blackboard on the wall. Prof Dhawan asked me what the problem was that I wanted to discuss. I explained the problem.. He told me that it was really a challenging task and he would teach me the design if I attended his classes in IISc between 2 pm to 3 pm on all Saturdays for the next six weeks.

He was a visionary teacher. He prepared the schedule for the entire course and wrote it on the black board. He also gave me the reference material and books I should read before I start attending the course. I considered, this as a great opportunity and I started attending the discussion and started meeting him regularly. Before commencing each meeting, he would ask critical questions and assess my understanding of the subject. That was for the first time that I realized how a good teacher prepares himself for teaching with meticulous planning and prepares the student for acquisition of knowledge. This process continued for the next six weeks. I got the capability for designing the contra-rotating propeller. Prof Dhawan told me that I was ready for developing the contra-rotating propeller for a given hovercraft configuration. That was the time I realized that Prof Dhawan was not only a teacher but also a fantastic development engineer of aeronautical systems.

Later during the critical phases of testing, Prof Dhawan was with me to witness the test and find solutions to the problems. After reaching the smooth test phase, the contra-rotating propeller went through 50 hours of continuous testing. Prof Dhawan witnessed the test himself and congratulated me. That was a great day for me when I saw the contra rotating propeller designed by my team performing to the mission requirement in the hovercraft. However, at that time, I did not realize that Prof Dhawan would become chairman, ISRO and that I would get the opportunity to work with him as a project director in the development of the satellite launch vehicle SLV-3

for injecting the Rohini satellite into the orbit. Nature has its own way to link the student's dream and real life later.

This was the first design in my career which gave me the confidence to design many complex aerospace systems in future. The hovercraft could fly just above the ground level carrying two passengers. I was the first pilot for this hovercraft and I could control and maneuver the vehicle in any direction. Through this project I learnt the techniques of designing and developing the contra-rotating propeller. Above all, I learnt that in a project, problems will always crop up; we should not allow problems to be our masters but we should defeat the problems. Then successes will sparkle.

The three teachers in my life; what did they give me? In an integrated way it can be said, that any enlightened human being can be created by three unique characteristics. One is moral value system. That I got from my father the hard way. Secondly, the teacher becoming a role model. Not only does the student learn, but the teacher shapes his life with great dreams and aims. Finally, the education and learning process has to culminate in the creation of professional capability leading to confidence and will power to make a design, to make a product, to make a system, bravely combating many problems. What a fortune and blessing I had from my three teachers.

Among the listeners, there may be many parents, many teachers and a large number of students. Every one of us in this planet creates a page in human history irrespective of who he/she is. I realize my experience is a small dot in human life, but that dot has a life and light. This light, let it light many lamps.

My best wishes to all of you on this occasion of Teachers' Day.

Thank you.