INTERVIEW WITH RAHUL S. CHATTERJEE

Rahul S. Chatterjee is an Assistant Lecturer *in Physics at Shillong Jail Road Boys' Higher Secondary School with 27 years of teaching experience. A National Teacher Awardee, 2020, Chatterjee is also the recipient of the prestigious Fulbright Scholarship program in 2012. He was also selected in 2019 to visit CERN in Geneva, Switzerland, as part of The High School Teacher Program. Chatterjee has actively contributed to the development of e-content in Science for NCERT over the years.*

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What made you choose Physics as your subject?

I was always interested in knowing the "why" and the "how" behind things. So, from a very young age, I would open up all kinds of mechanical things like toys and clocks, and try to figure out how they worked. Of course, I did not understand much, but the curiosity set in. My parents and my paternal uncle recognised this penchant and bought me toys that would help me understand the mechanics of things, like Mechanical Builder sets; sets that used the property of levers, etc.

Added to this was the fact that I have two elder sisters, the first-born being five years older than me. When she would study, I would often go around to see what she was studying. The diagrams in her science book intrigued me. I would ask her about them, and she was the first to tell me about mirrors and lenses,

light and sound! Those interactions opened a whole new world for me. I had started experimenting with mirrors and magnifying glasses.

Later, when I was in Class IX, the bearer brought a notice to the class that in the evening, from 4 PM that day, a Geological Survey of India scientist, who had just returned from Antarctica, would give a popular talk and show his slides at a local college. (There were no computers in the '70s, and presentations were made with specially prepared slides from negatives of photographs, all stacked up one behind the other and then projected on a screen one after another). I still remember rushing home from school, taking permission from my mother and directions, pen and paper, and landing up at the place on time to be able to see the presentation from close quarters. The evening's presentations started with a short presentation on Venus. That was the day, that was the moment I got hooked on astronomy and astrophysics, which remains my passion even up to today. The pictures from Antarctica were beautiful, but Venus was intriguing! An atmosphere of sulphur-dioxide; if it rains, it will rain sulphuric acid! This information was just too exciting to not follow up. However, back in the day, getting information was a challenge. The only reliable places were my school library and the State Library. Both became my treasure hunting places.

So, either just the right events fell onto my platter and made me take up Physics or, among all the things that were happening around me, I naturally gravitated towards wanting to know more, understand more, and hence Physics. I think it was the latter more than the former.

What and who motivated you to become a teacher?

I realised I had a knack for teaching and that teaching helped me understand better when I started helping my younger sister. The more I taught, the more I began to enjoy it. Gradually, the neighbourhood children began coming to me for help, saying it helped them. That is when I realised teaching should be a career choice for me.

According to you, what does it mean to be a teacher?

Being a teacher is a whole lot of responsibility and challenge. It is not just about going to class and imparting a lesson. That even a robot would be able to do. A teacher is expected to understand every child individually and know their strengths and weaknesses. Understand that there are bad days for a child just as there are bad days for the teacher. This understanding of a child is pertinent because it is expected of a teacher to build the little soul into a confident, optimistic, honest, hardworking individual who will become an asset to society. Just think of the unsaid expectations from a teacher for a moment. They are huge! Teachers are expected to do things that parents cannot, yet teachers do. Moreover, teachers do it for not one or two children, but for a class full of students, year after year!

Thus, to be a teacher, the individual must have various talents and qualities. A teacher has to be able to teach oration, drama, music, art, craft, sports, storytelling, and you name it! Can you show me another job that requires that many skills of any single individual? And all of this is beyond what is considered the core area, teaching the subject.

How have you been able to bring about improvement in the teaching-learning of Physics? Kindly share some innovations that you have made in terms of teaching methods of teaching-learning materials.

All I can say is I have tried. I realised that no one approach is the ideal approach. People learn differently. So there must be multiple ways of giving the same information. The different approaches I have taken are (a) designing new experiments and repeating standard experiments, to demonstrate a phenomenon or a concept, (b) showing pictures/videos again to illustrate a point, (c) making my own videos when I felt the necessity, (d) writing popular science articles for All India Radio and asking my students to tune in and also sharing the script later with the class, (e) delivering popular lectures, mainly on astronomy and astrophysics, and (f) inviting national level scientists to my school to deliver lectures.

From your years of experience, what do you think is the best way to motivate students and nurture their talents to become their best version?

Students are most motivated when they see a passionate teacher; a teacher who loves one's subject, and the love is absolutely evident. Nothing great has ever been done in the world without passion. A teacher's passion is infectious. It positively influences students like nothing else can. And if a teacher is not passionate about one's subject, what is the person doing there?

"A teacher is a student for life." What have you learned from your students?

The most valuable lesson for a teacher is 'how do students learn?'. Among the many different things that I have learned, the most important is when and how do they learn best. The more I invest myself in them, the more they learn. Among the other things, the important lesson I have realised is that each student is different, with different talents, aspirations, and dreams. And a good teacher has to cater to each and every one of them.

What has been your most touching experience so far as a teacher?

I am most touched when old students get in touch after many years, and they say things like it was because of me that they have been able to do this or that, or when some students, who are now abroad, invite me to their homes and tell me that I am welcome to stay with them if I visit their country...

Kindly suggest some areas where you think your district/ state/ country needs attention concerning science education, in general, and education in particular.

The first and foremost thing to be done is to recruit teachers who are passionate about teaching. Secondly, improve the service conditions of teachers across the board so that better talent is attracted to the profession. Thirdly, the government must spend more on science education to be able to implement a more hands-on pragmatic approach, as is the requirement in National Education Policy 2020*.

*The original reference was Draft NEP-2019 but by the time of publication of this issue, NEP-2020 was published and hence modified accordingly.

Do you also make an effort to popularise physics or physics learning in your community? If so, kindly elaborate.

Yes, I have been associated with science popularisation for over thirty years now. I have been a regular contributor to the Science Magazine Programme and Popular Science Programme of All India Radio (AIR) Shillong and North Eastern Service, AIR, Shillong. Other than that, I write freelance for different newspapers on popular science topics. I also have a blog on astronomy and astrophysics articles. In addition, I deliver popular lectures, mainly on Astronomy and Astrophysics, and have travelled to different parts of the country to deliver lectures. I also conduct science quizzes from time to time and hold hands-on sessions on teaching/learning physics through experiments.

What are your top two regular practices that have helped you stay motivated?

Starting the day by listening to or reading about a success story and choosing good friends who push me and keep me motivated.