

THE RELEVANCE AND NEED OF SCIENTIFIC TEMPER

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Science has several rewards, but the greatest is that it is the most interesting, difficult pitiless, exciting and beautiful pursuit that mankind has devised so far. In fact, if one were to consider the best art produced in the last century it can be termed as “Science”. Science education has an important role to play in the all-round cultural and societal development of human kind and for evolving a civilized society. The essence of scientific spirit is to think globally and act locally, since scientific knowledge is universal in nature while the fruit of science have some site specificity. Science untangles the threads that create the tapestry of our living world. It tries to work out how the threads merge in the overall ecological networks creating and maintaining the human kind and also contributes to the thought process of human beings. Probably, it can also be the spirit that can possibly reverse the steady downward trend of our world’s health and wealth.

Education is the foundation for scientific and technological advancements and personnel training of human beings. In the midst of overall anxiety of the modernization drive, Education especially Science Education should automatically get a strategic priority. One can at this stage ask why should we foster the spirit of enquiry among our students and that too a scientific enquiry? The Founding Fathers of the Indian Republic gave a great importance to the cultivation of “Scientific Temper” among the citizens of this country by suitably incorporating it in our constitution. This has to be contrasted with the views of the Founding Fathers of the American Republic where the emphasis is mainly on the political freedom of their country and individual freedom of their citizens. The European constitutions mainly concentrated towards the threat to freedom in the name of the religion. Probably we have a lesson to learn from the background of the formulations of these constitutions. Even though, the common Indian felt that the European institutions and culture are alien to them, they recognized the need for modern western institution of Science and Technology, if the country were to achieve progress. This may be the reason why the concept of “Scientific Temper” was built-in in our constitution. Successive governments also took necessary steps to establish scientific institutions that would foster such a temper and lead to technical excellence in this country. Though the country today can claim in various spheres like atomic energy, space and telecommunication, technological excellence, it is a matter of regret that the scientific temper among the general public, more so with the educated public has not progressed to the desirable degree. This could be partly due to the imitation and uncritical acceptance of the alien culture by many youth of this country. This could also result from the fact that Indian thinkers continue to borrow, probably continue to follow, the methodologies adopted by other cultures without developing independent methodologies that can bring out solutions to the problems facing this country in various spheres of activity.

Science is mainly concerned with understanding nature and probably unraveling its laws and in this sense it is beyond the realms of political, social and religious boundaries. Science is only the human activity which has built-in self corrective mechanism while all other activities of human race require external force to bring about corrective mechanisms in their fold. This is amply demonstrated in the recent years by the fact that many of the recent false claims in scientific achievements (for example cold fusion, memory effect at infinite dilution or the generation of fuel from water) have been automatically rejected for acceptance by the scientific community in spite of other intrusions.

It should not be construed that science is the most harmless and highly acceptable activity of human beings. In a sense it is so when it enhances knowledge and produces useful applications. However, the practitioners of science can also misuse it for authority and prestige. This places a condition that the true scientific spirit should not only aim at enhancing knowledge and producing useful applications but also recognize and avoid misuse with authority for political and social implications. This brings us to another important aspect of the practice of science. In our anxiety to defer to European or western authority in science, we have cultivated a lack of critical spirit. The original inquiring spirit of the Indians which was responsible for much enlightenment towards truth in the past is today slowly fading away. Our forefathers have attained enlightenment since their inquiring mind was totally free of other influences and hence could give rise to many path breaking discoveries and revelations. Today, this spirit has lost its significance and is mostly replaced by a spirit that lacks critical analysis and attempts to look for solutions from outside. Scientific knowledge generated by such a spirit without self critical analysis is totally incomplete. It should be realized that our education, especially our school education has not generated this “critical spirit” in the scientific temper of our budding young potential scientists and this will lead to disastrous consequences to our scientific and technological temples of this country. Indian civilization has always revolved around great temples of learning and knowledge like Nalanda and Kanchi. These institutions have been attracting great minds from all over the world in the past and it must be painfully admitted that in recent years, we have successfully reversed this trend. Great minds of our land are forced to look for greener pastures elsewhere except in the mother land. One of the reasons for this could be that the critical spirit in human beings are subjected to agony when they find that activities in knowledge creation can also be advantageously used for furthering personal authority and self-glory. An enquiring mind has to be always selfless if it were to be critical. Scientific temper is an intrinsic quality. It has to be imbibed and not merely imparted. But in our anxiety not to invest our best brains outside the country, we seem to have resorted to imparting scientific temper in our education curriculum and not inculcating this spirit in our young minds. This trend has to be reversed and teacher and the taught both have great roles and responsibility in this endeavour. Scientific temper has to be an inherent quality in our young minds and it should be cultivated in them as a matter of routine and the curriculum based attempts will not be always complete and this has to be a societal responsibility also. Critical analysis is a quality which has to be cultivated and this quality is some how missing in our education system due to our anxiety to impart formal knowledge fully at an early stage of the students career without even considering whether assimilation and acquiring have been accomplished. Great minds that our

teachers are, they can contemplate this and devise methods to incorporate scientific temper in our young minds which will go a long way in the technological progress of this country.

If India were to succeed and fulfill the visions of our great citizens of this country, we have to foster a scientific temper in our citizens with absolute capacity for critical evaluation. It is easy to recognize, that this step can be easily cultivated in our young minds so that they will blossom into worthy citizens of this great country in future.