

THE RELEVANCE OF SCIENTIFIC TEMPER AMONG INDIANS

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Introduction

It is said that ‘science has several rewards, but the greatest is that it is the most interesting, difficult, pitiless and beautiful pursuit that mankind has devised so far’. This must have come out of a passionate scientists who have enjoyed their profession as well as their practice. However it must be admitted that science has a stimulus to those who profess in it and provides the ultimate truth finding path for humanity much like religion as it was considered in the past and present. Such passionate infections might have been one of the reasons for the initial conflict between science and religion. The religious heads would have been wondering why mankind is turning its attention away from religion towards Science.

In fact if one were to consider the best art produced in the last century, it can be termed as ‘Science’. Science education plays an important role in all round cultural and societal development of human kind and for evolving a civilized society today. The essence of scientific spirit is to think globally and act locally, since scientific knowledge is universal in nature while the fruits of science have some site specificity. This fact is most often misunderstood or misinterpreted.

Science in general 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 act as the spirit that can possibly reverse the steady downward trend of our world’s health and wealth.

What do we mean by scientific temper?

It is therefore necessary that one understands what one means by the term *scientific temper*. Scientific temper is not like any other human emotions. It is a combination of eagerness and unpolluted and non-corruptible enthusiasm to seek the truth even though one is aware the real truth is farther away from his reach. Scientific temper deals with what one sees, hears and feels in reality or conceptually seeking the truth in real sense.

Education is the foundation for scientific and technological advancements and personal training of human beings. In the midst of overall anxiety of the modernization drive, education especially science education should automatically receive a strategic

priority. One can at this stage ask why should we foster the spirit of enquiry among our students? That too a scientific enquiry.

Scientific temper in India

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. In spite of the fact that we borrowed as it is usually termed the constitution from the western hemisphere of this world, we have imbibed in our constitution our traditional knowledge system with the enquiring mind. 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 have mainly concentrated toward the threat to freedom in the name of the religion, however. This clearly reveals that Indians as a community have a great tradition of scientific temper imbibed in them. But the invasion and dominance by others over Indian culture for a number of centuries may have contributed to the sharp decline of Scientific Temper, but it can never be removed from Indian Soil. Indian Scholars, even if they were to be religious ancient or contemporary had a questioning mind and reasoning attitude in the search of truth and hence scientific temper is and will be part and parcel of Indian life. However it is natural that one may feel, that the sharpness in scientific temper has been blunted, but it is only due to the economic and cultural turmoil India is facing today. It is only a passing phase and hence it is not appropriate to think that Indians do not possess scientific temper.

Probably, Indians have to learn from the background of the formulation of the constitutions. Even though, the common Indian may feel that the European Institutions and culture are alien to them, they have obviously 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 institutions that would foster such a temper and lead to technical excellence in this country. Hence it is only an illusion that we doubt that our Schools/Colleges do not promote scientific temper. Though the country today can claim in various spheres like atomic energy, space, 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 a further 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.

Scientific temper and National Policies

Science is mainly concerned with understanding of 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 startling scientific claims (for example cold fusion, memory effect at infinite dilution) have been automatically questioned and probably partially 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. This places a condition that the true scientific spirit should not only aim at enhancing knowledge and producing useful applications but also recognizes and avoids misuse with authority for political and social implications. This brings us to another important aspect of practice of science. Our national science policy has been formulated with due care and concern for our community. But in our anxiety to defer to European or western authority in science (this is not true as it is generally perceived that the west has authority over science) we seem to have cultivated a lack of critical spirit. The original inquiring spirit of the Indians that were responsible for much enlightenment towards the truth in the past appears to be slowly fading away. Our forefathers could attain 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 diluted 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 modern education system especially our attempts to import the western formulation of educational system without adopting them to our conditions and background has been responsible for not generating this 'critical spirit' in the scientific temper of our budding young potential scientists. This, in turn, will lead to disastrous consequences in our scientific and technological temples of this country. It has always been raised that in a country of 1.1 billion people, we have hardly any reasonable number who pursue pure scientific research. Indian civilization left to itself, 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 than in the mother land. Unfortunately, we have been of late started comparing ourselves in the sphere of scientific activity with others especially with China. It is true that we must follow others' activities, but it is not clear if we have to race with them in a sphere of activity that does not fit to our system. One of the reasons for this could be that the critical spirit in human beings are subjected to agony when they find that the 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. This country could also produce a Mahatma even in political sphere, which is rare in the whole of the world.

Imparting Scientific Temper

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 reversed, the teacher and the taught both have great roles and responsibility in this endeavor. 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 always be complete of which has to be a societal responsibility as well.. 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 and devise methods to incorporate scientific temper in our young minds which will go a long way in the technological progress of this country.

Conclusion

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 country in the future. Political and constitutional frame work in formulating policies for scientific temper can only be decorative and acceptable languages but the enforcement of them in the education system has not shown any rewards. The educational structure adopted by this country is not only shaken but also is being questioned if it is appropriate to our system of learning. Any exercise seeking truth whether it may be in science or in any other activity of human race has always been scrutinized and criticized, but never doubted and hence it is hoped that India will evolve and re-emerge with appropriate scientific temper which can be an eye opener to the whole world.