

Importance of Scientific Temper in Shaping the Social Behaviour among the Students of Secondary Level

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Abstract - Life cannot be imagined without science and technology. Science is indispensably present in every sphere of life but the application of scientific temper in daily social behaviour is a challenge. Scientific temper is a mental trait having some characteristics like objectivity, rationality, free from biasness, open mindedness etc. In modern times, scientific temper is extremely crucial from various perspectives. Fostering scientific temper among the students of secondary level is very important as it provides the ingredients to be a good citizen for progressive society. Through the inculcation of scientific temper proper social behaviour can be achieved. The secondary level is a pivotal phase for fostering scientific temper among the students.

Keywords: Scientific temper, Social behaviour, Crucial, Fostering, Secondary level, Academic achievement.

I. INTRODUCTION

From the beginning of the civilization man is trying to explore the nature and the surroundings associated with them. Man had to take many techniques for sustaining his life and livelihood. Knowingly or unknowingly man had to adopt science and different technology for making the life easy. Uses of fire, metal, wheel, boat -these are some significant examples. As time has progressed, the triumphant march of civilisation has advanced. And during this journey science become the indispensable part of life. The victory of science and technology played the crucial role for the all-round development of human life.

Unfortunately, a dark side also emerged alongside this. Pseudo-science, superstition bind human life in a tight inescapable grip. Man started to enjoy the beautiful invention of science and technology. But at the same time the faith on the super natural power has emerged in its full phase. The belief that supernatural forces control our lives became very widespread. Untouchability, along with other social superstitions, takes root almost in every nook and corner of

society. And a mind having scientific can play a significant role in overcoming the situation.

II. SCIENTIFIC TEMPER

Scientific temper is a mindset that encompasses some traits like objectivity, rationality, curiosity, freedom from bias, etc. The term 'Scientific Temper' was coined by Pandit Jawaharlal Nehru in his renowned book *The Discovery of India*. Scientific temper is described in this book as "The scientific approach and temper are, or should be, a way of life, a process of thinking, a method of acting and associating with our fellowmen." (Nehru, 1946, p. 452). Scientific temper can be explained through many attributes. "The attributes of scientific temper like, honesty, truthfulness, humility, perseverance, positive approach to failure, are essentially some of universal human values which are important for happiness of an individual and the society." (Kapri, 2017, p. 1499). The 42nd Amendment to the Constitution of India in 1976 added Scientific Temper as a Fundamental Duty under Article 51A(h), which states: "It shall be the duty of every citizen of India to develop the scientific temper, humanism and the spirit of inquiry and reform." The NEP 2020 section titled "Principles of this Policy" states that "The purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values." (Ministry of Human Resource Development, 2020, pp. 4-5). The importance of scientific temper is also highlighted in various other educational policies, curriculum frameworks and the reports of different education commissions or committees.

III. IMPORTANCE OF SCIENTIFIC TEMPER

Fostering scientific temper among the secondary level students is important in various respects.

3.1 Habit for Questioning

Scientific temper creates the habit formation of questioning. “Essential requirement of Scientific Temper is the attitude of not accepting answers without scrutiny.” (Maqbool *et al.*, 2014, p. 18). Inquisitiveness in the mind always has some beautiful benefits. It challenges the assumption-based decision and makes clarity. Scientific temper transcends the boundaries of mere ‘what’ and leads into the realm of ‘why’ and ‘how’. Even pre-assumptions and old assumptions that remain unchanged over time also come under the rational judgement through the justified questioning. Clearing the fog of misunderstanding asking questions makes a healthy relationship. Asking questions improves the critical thinking skill. Breaking the culture of silence, questioning nurture the environment of communications.

The habit of questioning can be formed among the people can be formed at their early student life particularly, at secondary level. If the development of scientific temper is proper, they can acquire the skill to question. At the student life, if the habit of questioning is formed, then in future life, it will make them a responsible member of healthy society.

3.2 Establishing Cause and Effect Relationship

Faith in fatalism, belief in supernatural phenomena- these things are very common things in our society. In this context scientific temper can play the vital role. Scientific temper creates the faith on science and scientific methodology for the explanation of any incident in the daily social life. Nothing can be happened without any reason. Every incident has its reason. The present time is not being controlled by any invisible, supernatural power. Scientific temper establishes the basic rational knowledge among the students of finding the causal relationship in any phenomena. Scientific temper is the basic foundation that provides evidence based mental set up which is crucial for making decision by rejecting dry dogma.

During the student life, if the proper scientific temper is developed, the students will be able to search any solution by applying the causal relationship not based on the blind belief. It is the right time for applying the appropriate knowledge of science subjects in daily life events. The extent of application of this knowledge largely depends on the development of scientific temper

3.3 Truths vs. Rumor

We are living in an era where information circulates very first through the digital media. Several types of digital media are easily available nowadays. At times, false information and rumors circulate through digital media also. However, the challenge is to identify truth from misinformation. Here

scientific temper can play the crucial role. Scientific temper can create the ability to distinguish between truth and rumor.

As the young generation uses social media extensively, development of proper scientific temper keeps them away from the menace of misinformation. Scientific temper fosters the reasoning skill among the students which will reflect in their decision making based on verified evidence rather than false claim or misleading information. It will alert their brains to verify whether the content they are creating or sharing is true or false. This is very much needed criteria for maintaining peace in the society.

3.4 Participation and Cooperation

Being human, we have some social responsibility. Scientific temper teaches one not to remain confined within oneself. It bridges the link between society and self. Instead of being preoccupied solely with one self and one's own affairs, it teaches one to participate in various social activities and extends a helping hand towards others member of the society.

Proper development of scientific temper among the students creates open mindedness and tolerance to others. It helps to develop secularism and humanism among the students. As a consequence, they become sufficiently empathetic towards other members of the society throughout their future life.

3.5 Self-Awareness

To become successful person knowledge of own strength and weakness is very important. Empty boasting is not a good character trait. It is extremely vital to be aware of one's own limitations. And for this scientific temper is one of the most important prerequisites. Scientific temper caters a clear understanding of what is within one's capabilities and what lies beyond them. It helps people make the right decisions by avoiding failure.

Building the right scientific temper among the students at their early life can shape their mind in such a way that they can identify their own weakness and strength in future life. It provides that courage required to admit “I don't know” or “I can't do this”. Their decision-making power is enhanced. Students are benefitted to overcome baseless superiority and inferiority complex.

IV. IMPORTANCE OF SECONDARY LEVEL

Secondary level is the vital period of students' life. Whatever knowledge and experience they gather during this period are the determinant factors for their future life, livelihood and lifestyle. Up to Class X every students have to study basic science subjects compulsorily. Therefore, this is

the right time to cultivate not only scientific knowledge but also scientific thinking and scientific concepts among them. If the acquired knowledge can be correlated for the explanation of daily social activities, their faith in science and scientific explanation would remain intact in every aspect of social life. As a result, they will prefer to use science to get answer of problems of their social life.

At this stage the maturation of cognitive level allows the students to initiate questioning to the authority. If the proper nourishment of this inquisitiveness can be formed, they will not accept anything blindly in the future without verifying it.

The type of behaviour and mindset that develops persists throughout one's life. So, if the habit can be formed scientifically, it will shape their social behaviour in appropriate manner.

At this stage peer influence has been found very prominently. Cooperation, collaboration, leadership quality, participation in social activity- all these things begin at this stage. If scientific temper develops properly, their proper social development takes place and ideal social behaviour is cultivated.

At this level, the social behaviour of the secondary level students is being shaped through the interaction with their surrounding environment. According to Manju and Mehta (2024):

Social Behavior of the students, specially senior secondary school students are influenced by the surroundings and the environment in which they live. Proper guidance and instructions by the parents, teachers and care takers will equip the personality of an individual and thus a child behaves well at various circumstances of his / her life. The cultural values and cultural norms play a significant role in it. (p. 1714)

So, if this time science and scientific temper can be deeply intertwined with the cultural value then it will be greatly beneficial for them.

V. CONCLUSION

Good citizen is always an asset for a society. For making a progressive society, scientific temper is very crucial. Many problems can be solved through the application of scientific temper. If the scientific temper is properly inculcated in social behaviour among the students, they can become good citizens in society. Secondary level is a crucial period for fostering scientific temper Academic achievement, science study -these things are essential but not enough. Caution is needed so that the concept of subject can be applied in practical life as well

as in their thought process. Trust in science and scientific explanation should be cultivated from childhood. As a consequence, they will be able to become thoughtful and responsible citizens in their future life.

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