

## SCIENTIFIC TEMPER OF TEACHERS IN THE LIGHT OF NEP 2020

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Received: 28 March 2024; Accepted: 2 May 2024; Published on: 30 June 2024

### ABSTRACT

Scientific Temper is an attitude of logical thinking. If a person uses the scientific method in their daily life decision-making process knowingly or unknowingly, then we can say that they have a scientific temper. According to NEP 2020, Scientific Temper is essential in our lives because this attitude enables the general public to make rational decisions. NEP 2020 concludes that developing scientific temper among students is necessary for the nation's overall development. It should be set irrespective of caste, creed, religion, etc. NEP 2020 highlights that there are two possibilities for achieving this target. The first may be to make special efforts to develop a scientific temper by organizing different types of programs. The second one may be to make it an integral part of the school curriculum. This paper focuses on the special measures these bodies suggest to empower society scientifically. Particular importance is given to the recommendations of the National Curriculum Framework, which includes the components of scientific temper. The challenges and limitations of the school education system in creating scientific temper have also been discussed in this paper.

**Key words:** Scientific temper, NEP 2020, Teacher's role

### INTRODUCTION

“It shall be the duty of every citizen of India to develop the scientific temper, humanism and the spirit of inquiry and reform” -Article 51-A(h).

To provide a more scientific, more logical, more prosperous, more liberal, more realistic, more experimental society to all blooming buds, all aspects of mind should be developed. It not only creates utilization of every part of the mind but also enhances an open-questioning-seeking reason, honesty, objectivity, open-mindedness, truthfulness, etc. In this changing world, there should be a scientific mindset through which curiosity, the “what,” “why,” and “how” of life can be entirely answerable so that the problems of everyday life become more accessible to deal with.

Scientific temper is a thought process. It depicts an attitude that incorporates the application of logic in every sphere of life. It has a very positive impact on society. It is a state of mind free of superstitions, prejudices, rigidity, etc. On the other hand, creativity is the tendency to generate ideas or possibilities to solve problems and communicate with others.

Here, the topic is the role, implication, and evaluation of the scientific temper of D.El. Ed & B.Ed. Teachers, as per NEP 2020, as those students are directly or indirectly related to D.El. Ed & B.Ed. Teachers. Their scientific temper reflects on those buds who are the country's future. So how much scientific character they have, how far they can generate scientific temper

within students, and how far they follow the guidelines of NEP 2020 regarding scientific nature are matters of discussion of this topic.

### **Why are teachers a matter of discussion in spreading scientific temper?**

Much research has been done in this regard on either scientific temper. No doubt, it is always a matter of discussion. Children, especially students of primary, are the root and base level of society. Fundamental education, superstition, scientific attitude, and temper are potent weapons for digging into their intellectual mind. It not only strengthens their objectivity, originality, and base of education but also enriches their ethics, values, spirit of inquiry, courage to question, freedom of mind, honesty, creativity, etc. These are the aims of education to fulfill the basic learning needs of children in an inclusive school environment irrespective of gender, caste, or religion. B.Ed. & D.El. Ed training is the professional training to nourish or guide those buds. Here D.El. Ed & B.Ed. Teachers are considered to be in two categories: trainee teachers and teacher educators. Trainee teachers are directly related to base-level students, and teacher educators are indirectly connected to those students. So, trainee teachers are directly responsible for inculcating anything good or bad within those base-level students. The leaching process of inner qualities of those D.El. Ed & B.Ed. Teachers can affect those buds just next to parents deeply, systematically, enthusiastically, and permanently. So, professionally enriched teachers have a critical role in students' lives.

### **Now the question is why the scientific temper of D.El. Ed & B.Ed. are teachers at Target?**

To inculcate scientific temper among the students, they need to be placed in situations like role play, quizzes, model making, etc.- where critical and rational thinking is required. In this situation, adopting power is only possible if it starts from the elementary level with the help of properly trained teachers. The attributes of scientific temper are truthfulness, honesty, humanity, perseverance, and a positive approach to failure, which are essential human values for the happiness of individuals and society. Very skillfully and in a very effective way, D.El. Ed & B.Ed. Teachers can inculcate those values within them. It is essential to observe the scientific temper of D.El. Ed teachers, as their inner qualities, primarily reflect on the buds of schools. So, their scientific character must be evaluated as they are the pathfinders of those blooming buds.

### **Educators' Scientific Temper and the NEP 2020 Mission State the following:**

Considering the sentence above, a comprehensive perspective on scientific temper may be deduced. The subsequent phrases outline the objectives of scientific temper-

- Shift in perspective leads to recognizing the interdependence of elements in the natural world.
- Valuing each element of the natural world.
- Perceiving natural occurrences as a means of finding inspiration and fostering a sense of unity and fairness.
- Adopting a logical and reasonable perspective while observing things.
- Encouraging individuality in thought and the ability to express oneself freely.
- Promoting a mindset that values scientific principles and methods in daily life.
- Fostering the development of learners who possess both wisdom and responsibility and the necessary skills to make informed decisions for themselves and their communities.

### **Enacting the suggestions of NEP 2020 about the cultivation of a scientific mindset at a fundamental level:**

#### **The Fundamental Guidelines from NEP 2020:**

It includes playful education, positive behavioral instruction, cleanliness, integrity, collaboration, and togetherness.

***Implementation Plan Foundational stage:***

- There are several learning possibilities in the environment. Here, the emphasis should be on directed or broad observation, engaging their senses, and getting kids to ask plenty of questions—especially those with more open-ended answers, such as "why" and "how"—rather than providing specific solutions.
- Some innovative thinking elements suitable for a child's age can be present.
- Instructors, like teachers, may ignite pupils' interest in the natural world and inspire them to ask queries.
- Solutions can be demonstrated through the use of easy, practical issues. They may make basic models of vehicles, houses, boats, toys, and more using just commonplace items like paper, cardboard, string, cotton, and waste. This is a great way to practice gross motor skills while inspiring imagination.

***Preparatory and Middle stage Recommendation from NEP 2020:***

- The Preliminary Phase comprises a three-year educational period that builds upon a teaching methodology and instructional style focused on play, discovery, and activity.
- Exposure to conventional classroom settings with an emphasis on interactive learning.
- Practical education.
- Comprehensive Development.
- Emphasize the development of reading, writing, and speaking abilities. Execution strategy for the Preliminary Phase:
- The schools should have adequate resources to facilitate children's engagement with educational resources.
- Each learning activity should empower a kid to investigate, question, and uncover knowledge.
- Teacher-guided exploration procedures should be implemented, focusing on learning through perceptual encounters alone. These experiences should be either simple, manufactured, or include the utilization of multiple senses.

***Middle stage:***

- The initial phase of science education involves acquiring knowledge through examples and sensations. In contrast, the intermediate phase necessitates purposeful experimentation to foster the formation of well-defined ideas.
- The educational program and instructional methodology should be harmonized to accomplish learning objectives through experience effectively.
- Teachers need to be given the tools they need to implement the new methodology and use the new resources that go along with it. With the support of training program centers, this can be accomplished.
- To encourage youngsters to explore and learn, it is essential to refrain from rote memorizing.

***Secondary stage:***

***Study across disciplines in secondary school:***

- A more in-depth, analytical, goal-oriented, adaptable, and student-centered approach to teaching.

- To create room for critical thinking and deep learning, simplify each subject's content to its fundamental components. Shift your focus from content to critical thinking and solving problems.
- Shift your focus on acquiring knowledge by doing.
- Policies previously centered around access and equity need to shift their focus to the standard of learning.
- Rote learning should be stopped.
- To accomplish the stated objectives, the curriculum and teaching methods must be changed and refocused.

#### Execution Strategy for Classes 9 & 10:

- Subjects will be available at both ordinary and higher levels. The decision will be offered at a higher level.
- A multidisciplinary thematic study will be introduced from class 9 itself. Pedagogy should involve hands-on learning experiences at the primary level, whereas, at the higher stage, it should be more structured and formal.
- Implementation of an interdisciplinary theme study curriculum starting from grade 9.
- Teachers should be able to provide better instruction due to their training. Using technology to accomplish this is possible. Regular training for educators should occur all year round via digital means, with access to experts in the subject area serving as resource people.

#### Execution Strategy for Classes 11 & 12:

- Subjects available for study at the Advanced Level include Advanced Physics, Advanced Chemistry, and Advanced Biology.
- Subjects provided at a multidisciplinary level include climate science, computer science, electronics, industrial chemistry, etc.
- Both standard-level courses are compulsory for all science stream students. They must select one subject at the advanced level and one multidisciplinary course. Multidisciplinary courses are not limited to the field of science.

## CONCLUSION

To sum up, while activity-based learning is often discussed but rarely implemented in our classrooms, our education system includes all the necessary provisions for fostering a scientific temper. To promote a scientific temperament, the education system should be redesigned to put the student at the center of the learning process rather than the school. A scientific character should be taught as the primary goal of education. An engaged and knowledgeable student, rather than a receptive and uninformed one, is what schools strive to cultivate. A curriculum that engages students and encourages them to reflect on and make sense of their experiences is essential. To foster a scientific mindset in students, it is vital to use modern pedagogical tools and resources, such as audiovisual aids, when teaching scientific concepts.

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## Suggested citation:

Karmakar, P., & Chattopadhyay, K. N. (2024). Scientific Temper of Teachers in the Light of Nep 2020. *Education@ETMA*, 3(2), 65–69.



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