

A STUDY OF SCIENTIFIC TEMPER OF HINDU AND MUSLIM STUDENTS

Ramendra Kumar Gupta, Ph. D.

Associate Professor, Deptt. of Teacher Education, Dayanand Vedic Collge, Orai

Email: ramendragupta67@gmail.com

Abstract

The investigator conducted a study for his Ph.D. work and this research paper is the product of that work. This paper is concern with the comprative study of Sceintific Temper of Hindu and Muslim Students. There were five Independent Variables : type of religion, class level, type of school, geographical locale and sex, having two levels of each variable. Therefore research design for this study has been factorial design. The Dependent Variable : Sceintific Temper and its dimensions were measured by Sceintific Temper scale. The findings of the study are given in detailed paper.



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Introduction:

According to Royal Society 1985, "Research is needed on how to measure public understanding, so as to enable monitoring of whether particular actions have changed public understanding of science, and whether such changes in fact bring about their intended consequences." These observations point out that there are two kinds of premises which underlie science. First, the general sociological assumptions concerning the understanding of science related to how people interpret the content and values of science, second, the more particular assumptions underlying the purposes of science education, that is, development of scientific thinking, scientific thought, and scientific temper. These assumptions are of considerable importance presenting composite action as related to ideology of science and ethos of science. The fundamental and broad educational directions for science educational directions for science education shall emerge from the ideology and ethos of science as these inherent the values which serve as guidelines.

The ideology of science attempts to describe the "idea systems" or basic irreducible assumptions that permeate scientific practices. In other words, scientific ideology relates primarily to a system of ideas or a way of thinking that characterise science, but ethos of science attempts to define the more affective aspects of scientific activity (Smolicz and Nunan, 1975). Clearly both the ideology and ethos are interactive, each 'circulatory' affecting

the other: further their total effect contributes to image of science. Hodson and Reid (1988) has observed:

If you genuinely seek an informed and thinking citizenry - capable of considering scientific and technological matters in the context of economic constraints, environmental issues, ethical concerns and social and aesthetic considerations - we must include in our science curriculum a consideration of the impact of science and technology on society, and the influence of society on science, scientific research and scientific development. A related issue is that of ensuring that future scientists and technologists behave in a socially responsible manner.

The authors have further specified affective goals for science education (Hodson, Reid, 1988):

- * Independence of thought and self - confidence.
- * Perseverance and tenacity in the face of difficulties.
- * Intellectual curiosity.
- * Tolerance of the views of others.
- * Open mindedness, willingness to change one's mind in the light of new evidence, willingness to suspend judgement if there is insufficient evidence.
- * Acceptance of scientific inquiry as a legitimate way of thinking about issues and problems.
- * Enthusiasm for Science.
- * Application of Science problem solving skills to everyday situations.

These objectives of science education will help the cultivation of scientific outlook or scientific temper which is more important than acquiring scientific knowledge or its application. India needs both understanding of science and scientific temper to develop relevant socio-cultural environment for national development, both intellectually and materially.

Statement of the Problem :

The investigator has researched the following problem "**A STUDY OF THE SCIENTIFIC TEMPER OF HINDU AND MUSLIM STUDENTS**"

Objectives :

1. To study the levels of scientific temper among the Hindu and Muslim students.
2. To study the effect of type of school, class level, geographical locale and sex on levels of scientific temper.

Hypotheses :

1. Theoretical mean of the total sample is not different than the obtained mean on the scientific temper scale.
2. Students from Hindu and Muslim religion are not different on the scientific temper scale and on its dimensions.
3. Students of different groups are not different on scores of scientific temper and its dimensions due to class level differences.
4. Students of different sexes are not different on the scores of scientific temper and its dimensions.
5. Students from urban and rural schools are not different on the scores of scientific temper scale and its dimensions.
6. Students from different types of schools are not different on the scores of the scientific temper scale and its dimensions.

Definition of Terms :

Scientific Temper

The word 'Scientific' was first used in 1840 by, W. Whewell. Science is 'reasoned knowledge' about facts, things, persons, natural phenomena and social behaviour. 'Temper' is a particular state or habit of mind especially with respect to disposition. Therefore, scientific temper represents a spirit of inquiry based on logical reasoning. The ability to think objectively, logically and analytically leads to the development of scientific temper. It is by nurturing scientific temper that one can be liberated from dogmatism, irrational beliefs and superstition. In this study the investigator has defined scientific temper as scientific temper is a unified state of mind, comprising thoughts, action and conduct of an individual in a specific situation. Scientific temper is a process of thinking to act objectively, rationally based on available evidences at the time of making decisions.

Different Geographical Locales

In this study data has been collected from urban and rural areas where different types of schools are functioning. Therefore, different geographical locales reflect the location of a school and the area which feeds students to the schools.

Sample :

The sample of the study was selected from all the Government and Private secondary schools of Jhansi Region, comprising three District: Jhansi, Orai (Jalaun) and Lalitpur, by random sampling procedure. In other words, this sample is representative of the whole population. In this study students of both the sexes from different geographical locales have been selected randomly. Random selection is a process by which every element in the population has an equal chance of being chosen in the sample and the same was adopted for the present study.

The sample comprises Hindu and Muslim students studying in 9th and 10th classes. The total sample includes 1000 students and its distribution is as follow:

Table SAMPLE DISTRIBUTION (N = 1000)

Religion	Geographical Locale		Class		Sex		
	Muslim	Urban	Rural	9th	10th	Male	Female
Hindu	400	800	200	660	340	650	350

Research Design :

There-fore, the research design for this study has been factorial design. The five independent variables have been as follows:

1.	Type of Religion	Hindu and Muslim
2.	Class level	9th and 10th
3.	Type of School	Government Schools and Private Schools
4.	Geographical locale	Urban and Rural
5.	Sex	Male and Female

The dependent variables of the present investigation have been:

Scientific Temper and its Dimensions

Instruments :

The investigator has adapted Scientific Temper scale, constructed and validated by Leela Pradhan (Kansakar), 1996.

The Scientific Temper Scale comprises four dimensions namely:

- I. Value Perspective
- II. Aversion to superstitions

III. A set of attitudes

IV. A world view perspective

There are 30 items of which 16 items deals with Value Perspective: 6 items Aversion to Superstitions, 4 items a set of attitudes and 4 items - A world view perspective.

Findings :

1. The total sample (N=1000) has above average scientific temper. The sample has positive and favourable value perspective; it has aversion to superstitions, favourable attitude towards science and has constructive world view about science and its role in developing a balanced world.
2. It was indicated that the students of Hindu reflect higher level of scientific temper than the students of Muslim. These two groups significantly differ on different dimensions of scientific temper, that is, Value Perspective, Aversion to Superstition, Attitude to-wards science and a World View Perspective.
3. This study has reflected that 10th class students possess much more favourable scientific temper in comparison to 9th class students. It was also indicated that 10th class students possess higher level of value perspective, attitude towards science and a world view perspective.
4. It was indicated that there is no difference in the level of scientific temper due to sex differences. But there was significant difference between male and female students on a world view perspective and a set of attitudes. Male students' thinking was on the higher side.
5. It was revealed that the students from the schools situated in urban areas have much higher level of scientific temper than the students from schools of rural areas. This is true on the all four dimensions of Scientific Temper Scale.
6. It was indicated that the students from private schools possess higher level of scientific temper than the students from Government Schools.
7. It was inferred that the 9th class students of Hindu possess higher level of scientific temper than the 9th class students of Muslim. But there is no significant difference in a world view perspective of 9th class Hindu and Muslim students.

8. It was observed that the 10th class students of Hindu has high level of scientific temper than the 10th class students of Muslim. But there was no difference in these two groups on dimension IV- A world View Perspective.
9. It was observed that the male students of Hindu have higher level of scientific temper than the male students of Muslim.
10. It was revealed that there is no significant difference in the level of scientific temper of female Hindu and Muslim students.
11. It was observed that there is no difference in the level of scientific temper of rural Hindu and Muslim students. But there was significant difference between rural Hindu and Muslim students on all the dimensions of Scientific Temper Scale.
12. It was revealed that the urban Hindu and Muslim students significantly differ in their level of scientific temper. The urban Hindu students possess higher scientific temper. It was also revealed that there was no significant difference between Hindu and Muslim urban students regarding aversion to superstitions.
13. It was indicated that there is no significant difference between Government school Hindu and Muslim students on level of scientific temper. However there is significant difference on dimension II- aversion to superstitions. The Government school Hindu students possess more aversion to superstitions.
14. It was observed that private school Muslim students possess more scientific temper than Private schools Hindu students. But there was no difference between two groups on a world view perspective of scientific temper.
15. It was revealed that 9th class and 10th class, Hindu and Muslim students significantly differ independently in their level of Scientific Temper. 10th class Hindu and Muslim students possess higher scientific temper than their 9th class counterparts.
16. It was indicated that there is no difference in the level of scientific temper due to sex difference. Hindu male and female students as well as Muslim male and female students possess same level of scientific temper independently.
17. It was revealed that rural and urban Hindu students are significantly differing on their level of scientific temper. Urban Hindu students possess higher scientific temper. Similarly rural and urban Muslim students differ on their level of scientific temper.
18. It was indicated that Hindu students from Government and Private Schools differ in their scientific temper Hindu students from Private school possess higher scientific

temper. Similarly Muslim students from Government and Private schools differ in their level of scientific temper. Private school Muslim students possess higher level of scientific temper.

Conclusion :

The above findings reveals that the students of Hindu reflect higher level of scientific temper and the 10th class students possess much more favourable scientific temper. There is no difference in the level of scientific temper due to sex difference. Students from schools situated in urban areas have much higher level of scientific temper and Private school students possess higher level of scientific temper. It was revealed that there is no significant difference in the level of scientific temper of female Hindu & Muslim students. There is no difference in the level the scientific temper of rural Hindu & Muslim students, while urban Hindu students possess higher scientific temper. Private school Muslim students possess more scientific temper than private school Hindu students. Urban Hindu and Muslim students possess higher scientific temper than their rural counterparts and private school Hindu & Muslim students possess higher level of scientific temper than govt. school students.

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