A STUDY OF RELATIONSHIP BETWEEN UNDERSTANDING OF SCIENCE AND SCIENTIFIC TEMPER OF HINDU AND MUSLIM STUDENTS

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Abstract

The investigor conducted a study for his Ph.D. work and this research paper is the product of that work. This paper is concern with the relationship between Understanding of Science and Scientific 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 Variables : Understanding of Science & Sceintific Temper were measured and correlation beween them were found. The findings of the study are given in detailed paper.

Introduction :

A crucial analysis of the science education programmes clearly indicate that there is a relationship between conceptual understanding of science and scientific temper, provided appropriate teaching -learning interactions are made available to students. In such learning environments students try to search answers of questions and science teachers function as facilitators of learning. It has been accepted that Affective Domains of science education should be given priority because survival of a democratic society needs people with scientific thinking, and scientific thought to make rational, independent and meaningful decisions on socio - scientific issues. Most of the developing countries are facing problems, such as, population explosion, environment degradation and illiteracy.

Therefore, all people need education in science to acquire awareness about their environment and other problems which can be solved through rational and objective decisions.

In this study, the investigator has taken two aspects of science education which are meaningful in developing understanding of science and scientific temper. Whenever a researcher in Education desires to measure some quality in a group or individual, he has to face the problem of choosing the best instrument for this purpose. He has to choose suitable tests which satisfy his needs by some absolute standards.

There are many specific considerations entering into the evaluation of a test. one such purpose may be obtained by seeing the relationshipof understanding of science and Scientific Temper. A person who has understanding of science will react objectively to related scientific problems. Similarly, if a person has positive or favourable scientific temper he will react positively to the related scientific knowledge or information or problems, is approved by commonsense and sanctioned by reasons.

Statement of the Probelm :

The investigator has researched the following problem **"A Study of Relationship between Understanding of Science and Scientific Temper of Hindu and Muslim Students."**

Objective :

To determine the relationship between levels of scientific temper and understanding of science.

Hypotheses :

1. There is no significant relationship between scores of scientific temper scale.
2. There is no significant effect of following on coefficient of correlation between scores of understanding of science and scientific temper :
   (I) Class level of students
   (II) Geographical location of students
   (III) Type of school of students (IV) Sex of students

Definition of Terms :

Understanding of Science

Science is a composite concept which includes from Botany and Zoology to environment related socio-scientific issues. It also includes concepts from different disciplines of science, scientific thinking and values of science. Understanding for this study includes comprehension of concepts of science, nature of scientific activity and inquiry.

Understanding of science has been taken as comprehension of some scientific content, concern for ethical issues related to science, faith in scientific values and responsibility in decision making concerning socio-scientific issues.

Scientific Temper

The world '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 thedevelopment 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		Class		Sex	
		Locale					
Hindu	Muslim	Urban	Rural	9th	10th	Male	Female
600	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:

1. Understanding of Science and its Dimensions
2. Scientific Temper and its Dimensions

Procedure for Analysis

Data has been computerised and following calculations were made:

1. Mean and Standard Deviation
2. Critical Ratio test for significant difference between means
3. Coefficient of correlation

With the help of above statistical treatments, inter group comparisonand relationships has been tested.

Instruments :

The investigator has adapted two instruments, constructed and validated by Leela Pradhan (Kansakar), 1996. These are

1. The Understanding of Science Scale
2. Scientific Temper Scale

Understanding of Science Scale comprises three dimensionsnamely,

I. Concepts of Science

II. Science Policy perspective III. Science Value Perspective

There are 40 items in this scale of which 20 items deals with Concepts of Science: 15 items - Science Policy Perspective and 5 items - Science Value Perspective.

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. There is significant relationship between understanding of science and scientific temper. It was revealed that scientific temper has significant correlation with concepts of science, science policy perspective and science value perspectives. Similarly, there was significant relationship between dimensions of scientific temper and understanding of science.
2. This study has revealed that the total sample of Hindu students have significant relationship between understanding of science and scientific temper. It is true in the case of Muslim students too.
3. This study has revealed that the total sample of 9th class and 10th class students has significant correlation between under-standing of science and scientific temper.
4. There has been no effect of sex on relationship between understanding of science and scientific temper. The relationship be-tween the two was significant.
5. There has been no effect of students of schools situated in urban and rural geographical locales on the relationship between under-standing of science and scientific temper.
6. It was revealed that there has been no effect on students from Private and Government schools on the relationship between understanding of science and scientific temper.

Conclusion :

The above findings reveals that the there is signficant relationship between Understanding of Science & Scientific Temper of Hindu & Muslim students and there has been no effect of sex on relationship between Understanding of Science & Scientic Temper. The relationship between two was significant.

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