

TO STUDY THE SCIENTIFIC TEMPER AND ACADEMIC ACHIEVEMENT OF SCIENCE AND SOCIAL SCIENCE STREAM ADOLESCENT IN EDUCATIONAL ZONE DANGIWACHA DISTRICT BARAMULLA KASHMIR

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ABSTRACT: *The present study was undertaken to compare the scientific temper and academic achievement of science and social science stream adolescents of eleventh standard in educational zone Dangiwachha Baramulla-Kashmir. Random sampling technique has been used to select the science and social science students from different higher secondary institutions of educational zone Dangiwachha Baramulla-Kashmir. The sample taken for the purpose consists of 100 science and 100 social science adolescent students. Showkat Rashid and Prof. N.A Nadeem scientific temper scale has been selected to collect data for scientific temper. Academic achievement of the selected sample has been taken as the percentage of aggregation marks in 9th and 10th standard. Mean, S.D and t test has been used to analyse the data. The results were found that two groups differ significantly on Curiosity and Objectivity dimension of scientific temper scale. It further revealed that two groups do not differ on Open-mindedness, Rationality, and Aversion to superstition dimension of scientific temper scale. Study also depicted that two groups differ significantly on Academic achievement.*

KEYWORDS: Scientific temper, Academic achievement, Science, Social science, Adolescents

INTRODUCTION

We are living in an era of science and technological development. Science has radically changed man's material and non material development. Science and technology has fostered a new intellectual temper known as scientific temper. Scientific temper describes an attitude which involves the application of logic and the avoidance of bias and preconceived notions. Discussion, argument and analysis are vital parts of scientific temper. The constitution of India upholds cultivations of scientific temper as one of the fundamental duties of citizens. Science is the way of understanding the world, a perspective and a pattern of thinking that begins early in one's life. The role of science promises to be greater in the future because of the ever more-rapid scientific progress. Our society is becoming increasingly dependent on science and technology. The mental attitude behind the method of acquiring reliable and practical knowledge may be called as "Scientific Temper". This phrase has been used in India perhaps because our first Prime Minister, Pt. Jawaharlal Nehru was very fond of using it. He wanted people to possess scientific temper so that could be better scientists better citizens and capable of governing their personal thoughts and actions in a scientific manner.

An academic achievement is something you do or achieve at school, college or university-in class, in a laboratory, library or field work. Academic achievement is the outcome of education-the extent to which a student, teacher or institution had achieved their education goals. Academic achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects or most important procedure knowledge such as skills or declarative knowledge such as factors. In

California the achievement of schools is measured by the academic performs index. Individual differences in academic performance have been linked to difference in intelligence and personality.

NEED AND IMPORTANCE

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 get a strategic priority. One can at this stage ask why should we foster the spirit of enquiry among our students and that too a scientific enquiry? The founding fathers of the Indian Republic gave a great importance of the cultivation of ‘scientific Temper’ among the citizens of this country by suitably incorporating it in our constitution. 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 to be reversed and the teacher and thought both have vital and responsible roles in this Endeavour. Science has several rewards, but the great one is that it is interesting difficult, pitiless, exciting and beautiful pursuit that mankind has devised so far. In fact, one was to consider the best art produced in the last century it can be termed as “Science”. Science education has an important role to play in the all-round cultural and societal development of human kind and for evolving a civilized society. The essence of scientific spirit is to think globally and act locally, as scientific knowledge is universal in nature while fruit of science have some site specificity. Science untangles the threads that create the tapestry of our living world. 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 be always complete and this has to be a societal responsibility too. Great minds that our teachers are, they can contemplate this and devised methods to incorporate scientific temper in our young minds which will go a long way in the technological progress of this country. Therefore, it is justified that for the well being and progress of the nation, the research in science education should urgently address to the problem of developing the scientific temper in students and this can be studied when we assess the impact of science teaching in terms of building up of scientific temper.

DEFINITION OF THE VARIABLE

Scientific Temper: Scientific temper of the present study refers to scores, obtained by students on Showket Rashid and Prof. N.A. Nadeem’s scientific temper scale. It has five dimensions.

1. Curiosity
2. Open mindedness
3. Objectivity
4. Rationality
5. Aversion to superstitions

Academic Achievement: Academic achievement refers to average of aggregate marks obtained by student in 9th and 10th class.

Objectives of the study

The following objectives were formulated for the purpose of proposed investigations.

1. To study the scientific temper of science and social science adolescent.
2. To compare science and social science students on 'curiosity' dimension of scientific temper.
3. To compare science and social science students on 'open mindedness' dimension of scientific temper.
4. To compare science and social science students on 'objectivity' dimension of scientific temper.
5. To compare science and social science students on 'Rationality' dimension of scientific temper.
6. To compare science and social science students on 'Aversion to superstition' dimension of scientific temper.
7. To compare the academic achievement of science and social science adolescent.

METHODOLOGY AND PROCEDURE

In order to achieve the objectives of the present study, the investigator visited three higher secondary institutions of district Bramullah Zone Dangiwachha and collected the data through random sampling technique. The scientific temper scale of Showkat Rashid and Prof. N.A Nadeem was administered to 100 science and 100 social science eleventh standard adolescents to assess their scientific temper status on five dimension that is curiosity, open mindedness, objectivity, rationality, and aversion to superstition in accordance with the instructions provided in the manual of the scale.

Another variable of the present investigation includes academic achievement of science and social science adolescents, which is operationally defined as the marks secured by the sample subjects in their qualifying examination for the past two years. For this, the investigator collected the marks percentage of the sample under study from the office record of the respective schools.

Sample

The investigator collected 200 adolescent students (100 students who have opted science stream and 100 students who have opted social science stream) of 11th standard from different Higher Secondary institution of zone Dangiwachha District Baramulla.

The following higher secondary institutions were selected

S.No.	Name Of Higher Secondary	No. of Science Student	No. of Social Science Student	Total
1	Govt. Higher Secondary Dangiwecha	33	33	66
2	Govt. Higher Secondary Behrampora	33	33	66
3	Govt. Higher Secondary Hadipora	34	34	68
Total				200

Tool Used

The data for the present study has been collected with the help of scientific temper scale constructed by Showket Rashid and Prof. N.A. Nadeem which assesses five dimensions of scientific temper that is Curiosity, open mindedness, objectivity, rationality, and aversion to superstitions.

Academic achievement has been taken at the average achievement marks of the previous classes 9th and 10th.

Statistical treatment

The data collected was statistically analyzed using mean, S.D and t-test.

ANALYSIS, INTERPRETATION AND DISCUSSION

Table 1: Shows mean comparison of Science and Social Science Higher Secondary Institution on Curiosity Dimension of scientific temper

Group	Number	Mean	S.D	t-test	Level of Significance
Science	100	4.68	1.6	4.37	Significant at 0.01 level
Social Science	100	3.5	1.1		

Table 1 shows the mean comparison of science and social science Higher Secondary students on Curiosity dimension of scientific temper. The above table reveals that the two groups differ significantly on curiosity dimension as the calculated t-value (4.37) is greater than tabulated t-value (2.58) at 0.01 level of significance. The mean difference favours the science students which confirms that science student are higher on curiosity dimension of scientific

temper. It further shows that adolescent who have selected science stream are more curious than the students who selected social science stream.

Table 2: Shows mean comparison of Science and Social Science Higher Secondary Institution on Open Mindedness Dimension of scientific temper

Group	Number	Mean	S.D	t-test	Level of Significance
Science	100	4.3	1.6	1.03	insignificant
Social Science	100	4	1.3		

Table 2 shows the mean comparison of science and social science higher secondary students on open mindedness dimension of scientific temper scale. The above table reveals that the two groups do not differ on open mindedness dimension of scientific temper.

Table 3: Shows mean comparison of Science and Social Science Higher Secondary Institution on Objectivity Dimension of scientific temper

Group	Number	Mean	S.D	t-test	Level of Significance
Science	100	5.2	1.5	2.96	Significant at 0.01 level
Social Science	100	4.28	1.7		

Table 6 shows the mean comparison of science and social science Higher Secondary institution on Academic achievement. The above table reveals that the two groups differ significantly on Academic achievement as the calculated Table 3 shows the mean comparison of science and social science Higher Secondary institution on Objectivity dimension of scientific temper. The above table reveals that the two groups differ significantly on Objectivity dimension as the calculated t-value (2.96) is greater than tabulated t-value (2.58) at 0.01 level of significance. The mean difference favours the science students which confirm that science student are higher on Objectivity dimension of scientific temper. it further shows that adolescent who have selected science stream are more objective in thinking and attitude of dealing.

Table 4: Shows mean comparison of Science and Social Science Higher Secondary Institution on Rationality Dimension of scientific temper.

Group	Number	Mean	S.D	t-test	Level of Significance
Science	100	4.44	1.6	1.4	insignificant
Social Science	100	4.02	1.4		

Table 4 show the mean comparison of science and social science higher secondary students on Rationality dimension of scientific temper scale. The above table reveals that the two groups do not differ on Rationality dimension of scientific temper.

Table 5: Shows mean comparison of Science and Social Science Higher Secondary Institution on Aversion to Superstition Dimension of scientific temper.

Group	Number	Mean	S.D	t-test	Level of Significance
Science	100	2.98	1.4	0.81	insignificant
Social Science	100	2.76	1.3		

Table 5 show the mean comparison of science and social science higher secondary students on Aversion to Superstition dimension of scientific temper scale. The above table reveals that the two groups do not differ on Aversion to Superstition dimension of scientific temper.

Table 6: Shows mean comparison of Science and Social Science Higher Secondary Institution on Academic Achievement.

Group	Number	Mean	S.D	t-test	Level of Significance
Science	100	26.2	16	2.19	Significant at 0.05 level
Social Science	100	19.4	15		

t-value (2.19) is greater than tabulated t-value (1.96) at 0.05 level of significance. The mean difference favours the science students which confirm that science student are higher on Academic achievement. It further shows that adolescent who have selected science stream secure more achievement and better performance than social science.

CONCLUSION

The present study was designed to compare Science and Social Science students on scientific temper and academic achievement. A sample of 200 students (100 science & 100 social science) of 11th grade were drawn randomly from different Higher Secondary schools. The data was statistically analyzed by applying t-test. The study revealed that the two groups differ significantly on Curiosity, Objectivity dimension of scientific temper. The study further revealed that the two groups do not differ on open mindedness, rationality, aversion to superstition dimension of scientific temper. The study revealed that two groups differ significantly on academic achievement scores.

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