

A Comparative Study of Scientific Temper and Academic Achievement of Kashmiri and Pakhtoon Students

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Abstract: The present study was carried out to find out the scientific temper and academic achievement of Kashmiri and Pakhtoon students. Nadeem and Khalida's Scientific Temper Scale (STPS) was administered on a group of 120 students. Mean, S.D and test of significance were calculated and the result revealed significant mean differences between the two groups under investigation. The investigator for the present piece of research followed the exact procedure as advocated by most of the imminent researchers in the field of education and psychology. For this purpose the data received from the above mentioned samples was analysed statistically using most widely used methods i.e., mean, Standard Deviation and t-test. All the calculated values shown at appropriate section were analysed later.

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Key Words: Scientific Temper, Academic Achievement, Kashmiri Student, Pakhtoon Student.

Introduction

Science is a way of understanding the world, a perspective and a pattern of thinking that begins early in one's life. Scientific advances over the last fifty years have led to revolutionary changes in health, nutrition and communication, and generally enhancing socio-economic development and the quality of our lives. 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. It is essential for the wellbeing of our society that all citizens develop "science literacy", an appreciation of science, the benefits of technology, and the population risks associated with advances in both. In an effort to boost the interest of students in basic sciences, the Department of Science and Technology (DST), Government of India has announced 2004 as the year of Scientific Awareness"(YSA2004).

The mental attitude which is behind the method of acquiring reliable and practical knowledge may be called as "Scientific Temper". It means an attitude, emphasizing that nothing in the world should be taken for granted or accepted on the basis of blind faith without it being subjected to the test of reason. The scientific temper stresses investigation seeks proof without any bias or prejudice. The man with such a temper studies a subject with openness of mind and impartiality, because he wants to know and observe a thing as it is and not as he wishes it to be. With this impersonal approach towards a problem, the observation that an explorer makes and the conclusions he arrives at are verifiable by any one at

any time and at any place. This is so because a law, principle or phenomenon in nature is universal and not confined to any individual or place. In other words we can describe scientific temper as an attitude of mind characterized by curiosity, open-mindedness, rationality, aversion to superstitiousness, objectivity of intellectual belief and suspended judgments.

Need and Importance of Present Study

Science has several rewards, but the greatest is that it is the most interesting, difficult pitiless, exciting and beautiful pursuit that mankind has devised so far. In fact, if one were 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, since scientific knowledge is universal in nature while the fruit of science have some site specificity.

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 minds. This trend have to be reversed and the teacher and taught both have vital and responsible roles in this endeavor. 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 devise 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 wellbeing and progress of the nation, the research in science education is urgently addressed to the problem of developing scientific temper in the students and this can be studied when we assess the impact of science teaching in terms of building up of scientific temper. Thus from the above discussion, the need of the present study is justified.

Statement of the problem

The problem of the present study was formulated as under:

“A comparative Study of Scientific Temper and Academic achievement of Kashmiri and Pakhtoon students”

Objectives

The objectives of the present study were as under:

1. To measure the Scientific temper of Kashmiri and Pakhtoon school going boys and girls.
2. To measure the academic achievement of Kashmiri and Pakhtoon school going boys and girls.
3. To compare the scientific temper of boys and girls of Kashmiri and Pakhtoon schools.
4. To compare the academic achievement of boys and girls of Kashmiri and Pakhtoon schools.

Hypotheses

1. There is a significant mean difference between Kashmiri and Pakhtoon students on scientific temper.
2. There is a significant mean difference between Kashmiri boys and girls on scientific temper.
1. There is a significant mean difference between Pakhtoon boys and girls on scientific temper.
2. There is a significant mean difference between Kashmiri boys and Pakhtoon boys on scientific temper.

3. There is a significant mean difference between Kashmiri girls and Pakhtoon girls on scientific temper.
4. There is a significant mean difference between Kashmiri and Pakhtoon students on academic achievement.
5. There is a significant mean difference between Kashmiri boys and girls on academic achievement.
6. There is a significant mean difference between Pakhtoon boys and girls on academic achievement.
7. There is a significant mean difference between Kashmiri boys and Pakhtoon boys on academic achievement.
8. There is a significant mean difference between Kashmiri girls and Pakhtoon girls on academic achievement.

Sample

The sample of the present study comprised of 120 Kashmiri and Pakhtoon students (both boys and girls) drawn from the government schools.

Tool used

The tools for the present study were selected in a manner to achieve optimum level of confidence by the investigator for the accomplishment of the objectives of the study. The investigator selected the following tools to collect the relevant data.

1. Scientific Temper Potentiality Scale.
2. Aggregate percentage of marks as indicator of academic achievement.

Statistical Treatment

The data collected was subjected to the following statistical treatment:

1. Mean
2. S.D
3. t-test

Analysis and Interpretation

In order to achieve the objectives formulated for the present study, the data collected has been tabulated as under.

Table 01: Showing Significance of mean difference between Kashmiri and Pakhtoon students on scientific temper scale:

Group	N	Mean	S.D	t-value	Level of significance
Kashmiri	60	30.5	7.39	1.15	Not Significant
Pakhtoon	60	29.3	3.22		

The above table shows the mean difference between Kashmiri and Pakhtoon students towards the scientific temper and results reflect that the difference is not significant as our calculated t-value (1.15) is less than the tabulated t-value at .01 and .05 level of significance. The results specify that Kashmiri and Pakhtoon students exhibit similar scientific attitude.

Table 02: Showing Significance of mean difference between Kashmiri boys and girls on scientific temper:

Group	N	Mean	S.D	t-value	Level of significance
Kashmiri Boys	30	29.26	8.53	1.35	Not Significant
Kashmiri Girls	30	31.83	6.03		

The above table shows the significance of mean difference between Kashmiri boys and girls towards scientific temper and reveals that the difference is not significant, as our calculated t-value (1.35) is less than the tabulated t-value at .01 and .05 level of significance. This confirms that the attitude of boys and girls towards science is similar.

Table 03: Showing Significance of mean difference between Pakhtoon boys and girls on scientific temper:

Group	N	Mean	S.D	t-value	Level of significance
Pakhtoon Boys	30	29.26	2.09	0.57	Not Significant
Pakhtoon Girls	30	29.66	2.98		

The above table shows the significance of mean difference between Pakhtoon boys and girls towards scientific temper and reveals that the difference is not significant, as our calculated t-value (0.57) is less than the tabulated t-value at .01 and .05 level of significance. This confirms that the attitude of boys and girls towards science is similar.

Table 04: Showing Significance of mean difference between Kashmiri boys and Pakhtoon boys on scientific temper:

Group	N	Mean	S.D	t-value	Level of significance
Kashmiri boys	30	29.26	8.53	0.12	Not significant
Pakhtoon boys	30	29.06	2.09		

The above table shows the significance of mean difference between Kashmiri boys and Pakhtoon boys towards the scientific temper and depicts that the difference is not significant, as our calculated t-value (0.12) is less than the tabulated t-value at .01 and .05 level of significance. This confirms that the attitude of Kashmiri boys and Pakhtoon boys towards science is similar.

Table05: Showing Significance of mean difference between Kashmiri girls and Pakhtoon girls on scientific temper:

Group	N	Mean	S.D	t-value	Level of significance
Kashmiri girls	30	31.83	6.03	1.64	Not significant
Pakhtoon girls	30	29.66	4.05		

The above table shows the significance of mean difference between Kashmiri girls and Pakhtoon girls towards the scientific temper and depicts that the difference is not significant, as our calculated t-value (1.64) is less than the tabulated t-value at .01 and .05 level of significance. This result specifies that the Kashmiri girls and Pakhtoon girls have similar intelligence.

Table 06: Showing Significance of mean difference between Kashmiri and Pakhtoon students on academic achievement:

Group	N	Mean	S.D	t-value	Level of significance
Kashmiri	60	64.04	20.04	1.28	Not Significant
Pakhtoon	60	60.02	18.04		

The above table shows the significance of mean difference between Kashmiri and Pakhtoon students on academic achievement and depicts that the difference is not significant, as our calculated t-value(1.28)is less than the tabulated t-value at .01 and .05 level of significance. This confirms that both Kashmiri and Pakhtoon students show similar academic achievement.

Table07: Showing Significance of mean difference between boys and girls of Kashmiri schools on academic achievement:

Group	N	Mean	S.D	t-value	Level of significance
Kashmiri Boys	30	56.06	9.69	1.36	Not Significant
Kashmiri Girls	30	52.04	12.33		

The above table Shows the Significance of mean difference between Kashmiri boys and girls on academic achievement and depicts that the difference is not significant, as our calculated t-value(1.36) is less than the tabulated t-value at .01 and .05 level of significance .This confirms that both boys and girls show similar academic achievement.

Table 08: Showing Significance of mean difference between boys and girls of Pakhtoon school s on academic achievement:

Group	N	Mean	S.D	t-value	Level of significance
Boys	30	54.04	10.22	1.37	Not Significant
Girls	30	58.0	12.24		

The above table Shows the Significance of mean difference between boys and girls of Pakhtoon on academic achievement and depicts that the difference is significant, as our calculated t-value(1.37) is less than the tabulated t-value at .01 and .05 level of significance. The results confirm that the Pakhtoon boys and girls show similar academic achievement.

Table 09: Showing Significance of mean difference between Kashmiri boys and Pakhtoon boys on academic achievement:

Group	N	Mean	S.D	t-value	Level of significance
Kashmiri boys	30	56.06	9.69	0.77	Not Significant
Pakhtoon boys	30	54.04	10.22		

The above table Shows the Significance of mean difference between Kashmiri boys and Pakhtoon boys on academic achievement and depicts that the calculated t-value (0.77)is less than the tabulated t-value at .01 and .05 level of significance at .01 level. The results confirm that the Kashmiri boys and Pakhtoon boys show similar academic achievement.

Table 10: Showing Significance of mean difference between Kashmiri girls and Pakhtoon girls on academic achievement:

Group	N	Mean	S.D	t-value	Level of significance
Kashmiri girls	30	52.04	12.33	1.86	Not Significant
Pakhtoon girls	30	58.02	12.24		

The above table shows the significance of mean difference between Kashmiri girls and Pakhtoon girls on academic achievement and depicts that the difference is not significant, as our calculated t-value (1.86) is less than the tabulated t-value, at .01 .05 level of significance. This confirms that the Kashmiri girls and Pakhtoon girls show similar academic achievement.

Conclusions

On the basis of analysis, interpretation and discussion certain meaningful conclusions have been drawn which are given below.

1. It has been found that the attitude of Kashmiri students and Pakhtoon students towards science is similar.

2. The attitude of Kashmiri and Pakhtoon girls towards science is similar.
3. The attitude of Kashmiri boys and Pakhtoon boys towards science is similar.
4. The attitude of boys and girls of Pakhtoon and Kashmiri school towards science is similar.
5. It has been found that Kashmiri students showed better academic achievement than Pakhtoon students.
6. Kashmiri boys showed better academic achievement than Pakhtoon boys.
7. Kashmiri girls showed better academic achievement than the Pakhtoon girls.
8. Boys and girls of Kashmiri schools showed similar academic achievement.

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