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Scientific Attitude Of Teachers: A Comparative Study Of Jammu & Kashmir And Ladakh

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Abstract
The primary objective of this investigation is to find out the scientific attitude of secondary school teachers of Jammu & Kashmir and Ladakh. The study is descriptive- survey in nature. The method of stratified random sampling was used to select a sample size of 600 secondary school teachers, with 300 teachers from each UT. The data was collected from different secondary school teachers by using Scientific Attitude scale (2006) standardized and developed by Shailaja Bhagwat. The data was examined with the help of percentage, mean, S.D. and t-test. The results of the research study showed that 3.66% of Jammu & Kashmir and 2.33% of Ladakhi secondary school teachers have very high scientific attitude. 11.00% of secondary school teachers of Jammu & Kashmir and 7.00% of Ladakhi secondary school teachers were found to have a high scientific attitude. The data further revealed that majority i.e., 63.00% of secondary school teachers in Jammu & Kashmir and 64.33% of secondary school teachers in Ladakh were found to have a moderate scientific attitude. 21.00% of Jammu & Kashmir secondary school teachers and 24.66% of Ladakh secondary school teachers was discovered to have a low level of scientific attitude. A small chunk i.e., 1.33% in Jammu & Kashmir and 1.66% in Ladakhi secondary school teachers was found to have a very low scientific attitude. A significant mean difference was also found between the two groups.

Key Words: Scientific Attitude, Secondary School Teachers, Jammu & Kashmir and Ladakh.

INTRODUCTION

At the beginning of time, when man became conscious of his circumstances and began to reflect on the environmental factors wherein, he found himself immersed, this new found understanding of the physiological world not only altered his perception of his surroundings, but it also altered his outlook on and reaction to the challenges he encountered in his daily life. Science is defined as the systematized reservoir of human thought that has been accumulated as a result of the generalization and interconnection of diverse independent facts. The term "science" derives from the Latin word "Scientia," which literally means "to

know." The Guidelines for Science Education say that science can be defined as "a cumulative and infinite sequence of scientific observations that leads to the development of ideas and theories, with both these ideas and theories based on evidence."

Science is really a body of knowledge that is always growing and growing. It is dedicated to finding out what nature is all about. Because of this, it has had a significant impact on humanity, and it is impossible to envision a future without scientific advancements. In those days, scientific understanding had little impact on the everyday lives of ordinary people. However, since the turn of the century, even the average person has become conscious of the effects of science on society as well as the dawning of a new era in science.

The purpose of learning is to mould the attitude of the student so that it satisfies the requirements and standards of the public sphere. There are a lot of different characteristics that behaviour is measured against. Attitude is among the most significant characteristics. The way in which one thinks about things in this environment, be they a person, a concept, or an object, has a significant impact on how one behaves in response to those things. His attitudes have an impact not only on his ability to learn a topic but also on his development of habits, passions, and other psychological tendencies. According to Petty (1981) "The distinguishing feature of attitudes would be that they convey an appraisal of various objects." The judgement of people, things, situations, actions, and concepts in a good or negative light can both be attitudes. An attitude is "a behavioural propensity that is exhibited by judging an enable precise with some level of favour or dislike," according to one definition. Attitudes can be positive or negative. Thurston said that a person's attitude is made up of all their tendencies and preferences.

As per the International Encyclopedia of Education, a person's science attitude is how he or she feels regarding science in general. With a scientific attitude, an individual is more likely doing the right thing after assessing the pros and cons of different options and making logical arguments supported by evidence. Scientific attitude has been really made up of a quantity of lifestyles or propensities to respond to new or difficult situations in the same way repeatedly. Some of these lifestyles or predispositions are being accurate, intellectually truthful, and open-minded, not making snap decisions, being critical, and always looking for a real causation link. This is a way of thinking. Scientists' ways of thinking are usually associated with their attitudes. These lifestyles are essential not just for scientists but for everyone in their everyday lives and viewpoints. Bhaskara Rao wrote in 1986, "It has now been realized it without improving a scientific attitude, whatever majority of scientific knowledge is useless."

Scientific attitude are ways of thinking that tend to go in a certain direction. One of the goals of teaching science is to help students think more like scientists. That is a very important result of the way science is taught. During the process of learning science, the only way to develop a scientific mindset is through direct experience and careful observation. The teachers must put the children in situations where there is interaction between teacher and students or out in the field where they can see or feel how important it is to create this attitude.

Rationale and Objectives of the Study

Science knowledge does not add much to the growth of a country or even to the system of socialization. Scientific attitude has qualities that are assumed to be right or wrong, but they don't say anything about how they are good or bad. To avoid confusion, scientific attitude might be better called "scientific attributes." Scientific attitude includes being Rational, curious, open-minded, being intellectually honest and Suspended judgment. Our culture is quite scientific. Science is becoming integral to our lives, and we cannot imagine a universe without it. The marvels of science have changed our civilization into a scientific one. Thus, there is little need to justify science's role in a school's general education programme. Science should reduce obstructionism and sex, caste, religious, and linguistic stereotypes. Our country needs more scientists in this age of research and technology. Moreover, it is only conceivable if the teaching of science can attract many pupils, as it satisfies the want to know, fosters democratic behaviour, and promotes scientific attitude and critical thinking.

Teachers should foster a scientific attitude. Only teachers can enthuse students about technology. Through their dedication, many learners acquire lasting scientific curiosity, resilience, and an appreciation for science. So, a teacher, science, or non-science, should have a favorable attitude towards science to impart it to pupils. Attitude displays a person's inner view; hence it's important for schooling. If a person wants something, he will work hard to get it. He avoids objects he dislikes. A teacher's role in developing pupils' scientific attitudes is crucial. Only under the stunning personality and able leadership of the teacher can achieve new heights of glory. In a developing society, teachers have a significant obligation to produce excellent citizens who can carry out their vocation properly and productively. Modern teachers are expected to prepare students to attain their goals. Aspirations and teachers' attitudes affect pupils' scientific attitude. Hence, the current study aims to assess the scientific attitude of secondary school teachers of Jammu & Kashmir and Ladakh, based upon the following objectives:

1. To study the Scientific Attitude of secondary school teachers of Jammu & Kashmir and Ladakh.
2. To compare the scientific attitude of secondary school teachers of Jammu & Kashmir and Ladakh
3. To compare the scientific attitude of male and female secondary school teachers of Jammu & Kashmir and Ladakh

Hypotheses

The following hypotheses were formulated for this research:

H_1. Secondary school teachers of Jammu and Kashmir and Ladakh differ significantly on scientific attitude.

H_2. Male and female secondary school teachers of Jammu & Kashmir differ significantly on scientific attitude

H_3. Male and female secondary school teachers of Ladakh differ significantly on scientific attitude

METHODS

The present research study was conducted by using descriptive method of research. The study was conducted to measure the scientific attitude of secondary school teachers of Jammu & Kashmir and Ladakh. The secondary school teachers of Jammu & Kashmir and Ladakh comprised the sample for the present investigation. The sample of 600 secondary school teachers was selected randomly from different secondary schools of Jammu & Kashmir and Ladakh by using stratified random sampling technique. The breakup of the sample is as under:

1. Jammu and Kashmir secondary school teachers -300
2. Ladakh secondary school teachers -300

The scientific attitude scale (2011) developed by Shailaja Bhagwat was used by the researcher to collect the data. The data was collected through the personal visit of these schools with the help of above- mentioned scale. The data was put into a table as per the manual of the scale. The investigator used percentage statistics, mean, S.D. and t-test to analyze the data and draw the inferences.

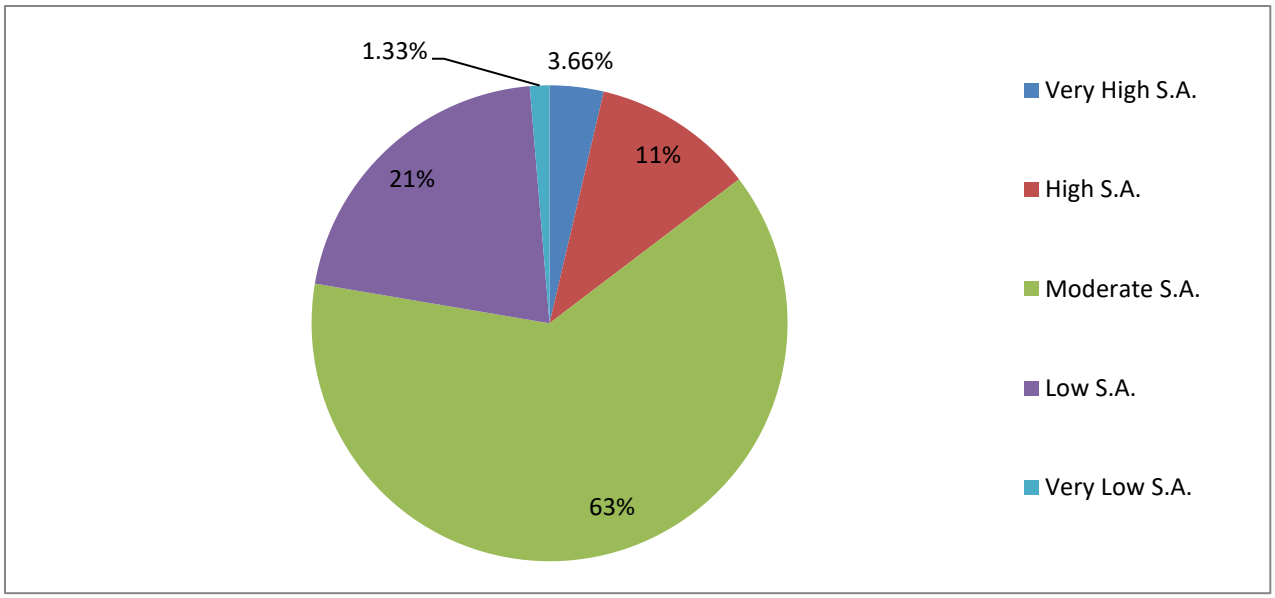
RESULTS

Table 1 showing the percentage distribution of scientific attitude of secondary school teachers of Jammu & Kashmir and Ladakh.

Score obtained on scientific attitude	J&K Secondary school teachers	Percentage	Ladakhi Secondary School Teachers	Percentage	Category
92 and above	11	3.66	07	2.33	Very high
77 to 91	33	11.00	21	7.00	High
62 to 76	189	63.00	193	64.33	Moderate
57 to 61	63	21.00	74	24.66	Low
42 and below	04	1.33	05	1.66	Very low

A quick glance from the above table reveals the level of scientific attitude of secondary school teachers in Jammu and Kashmir and Ladakh. The statistical data reveals that 3.66% of Jammu & Kashmir and 2.33% of Ladakhi secondary school teachers were found to have very high scientific attitude. 11.00% of secondary school teachers of Jammu & Kashmir and 7.00% of Ladakhi secondary school teachers were found to have a high scientific attitude. The data further reveals that a good percentage of 63 of secondary school teachers in Jammu & Kashmir and 64.33% of secondary school teachers in Ladakh were found to have a moderate scientific attitude. 21% of Jammu & Kashmir secondary school teachers and 24.66% of Ladakh secondary school teachers were found to have a low level of scientific attitude. A small chunk of 1.33% of Jammu & Kashmir and 1.66% of Ladakhi secondary school teachers were found to have very low scientific attitude.

Scientific attitude of secondary school teachers of Jammu & Kashmir



Scientific attitude of secondary school teachers of Ladakh.

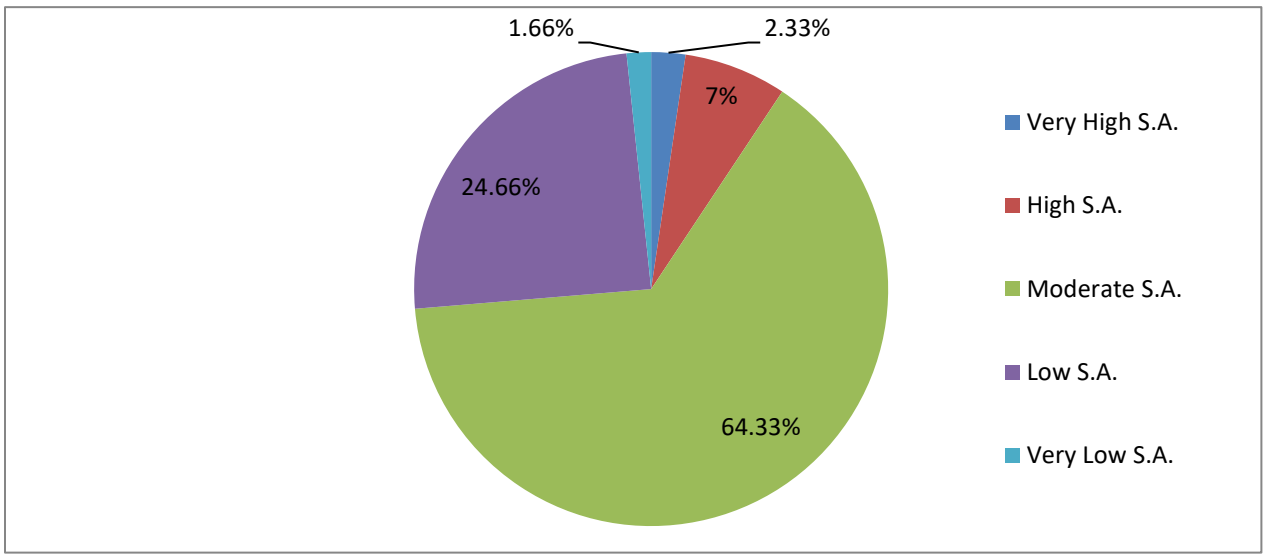


Table 2 showing the mean comparison of scientific attitude among secondary school teachers of Jammu & Kashmir and Ladakh.

Group	N	Mean	S. D.	t-value	Level of Significance
J&K	300	91.01	10.33	2.53	Significant at 0.05 Level
Ladakh	300	88.96	9.92		

The table 2 shows the mean comparison between secondary school teachers in Jammu & Kashmir and Ladakh on scientific attitude. The data shows that there is significant mean difference between the two groups, which confirms that the groups differ significantly at 0.05 level of significance. The mean difference favours the teachers of Jammu & Kashmir, which means that Jammu & Kashmir teachers have higher degrees of scientific attitude as compared to teachers of Ladakh.

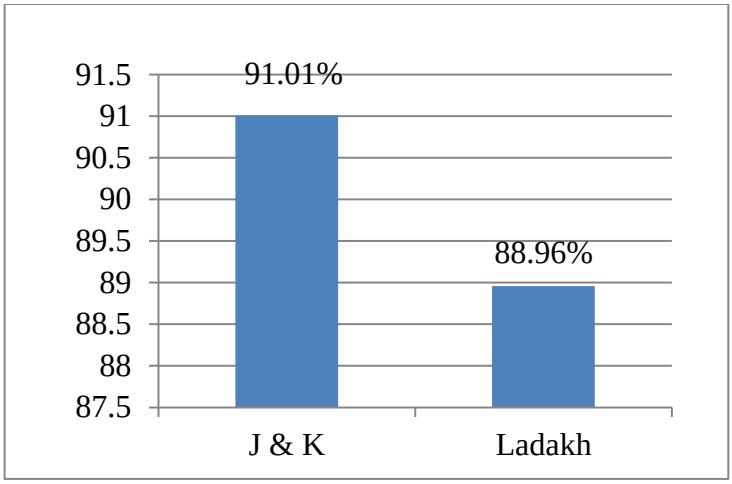


Table 3 showing the mean comparison of scientific attitude between male and female secondary school teachers of Jammu & Kashmir.

Group	N	Mean	S. D.	t-value	Level of Significance
Male	**150**	**89.06**	**9.31**	**0.14**	**Not Significant**
Female	**150**	**88.91**	**8.93**		

A quick glance of the table 3 shows a comparative analysis of male and female secondary school teachers of Jammu & Kashmir. The data revels that there is no significant mean difference between the two groups, which confirms that the groups have almost similar scientific attitude. Though the mean difference favours male school teachers of Jammu & Kashmir, but the difference failed to arrive at any confidence level.

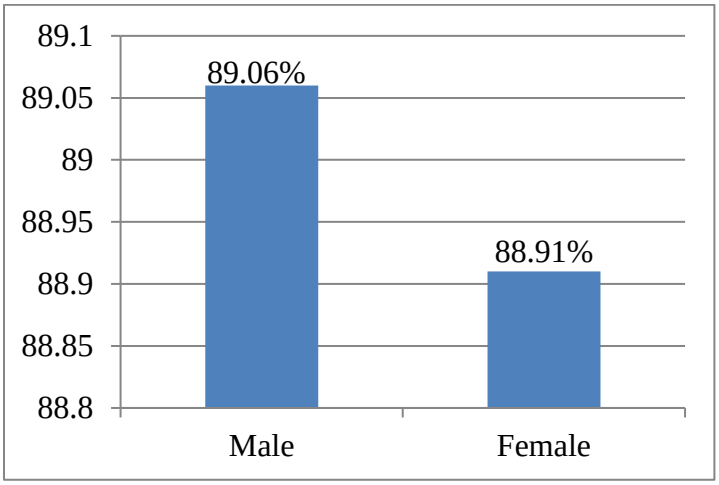
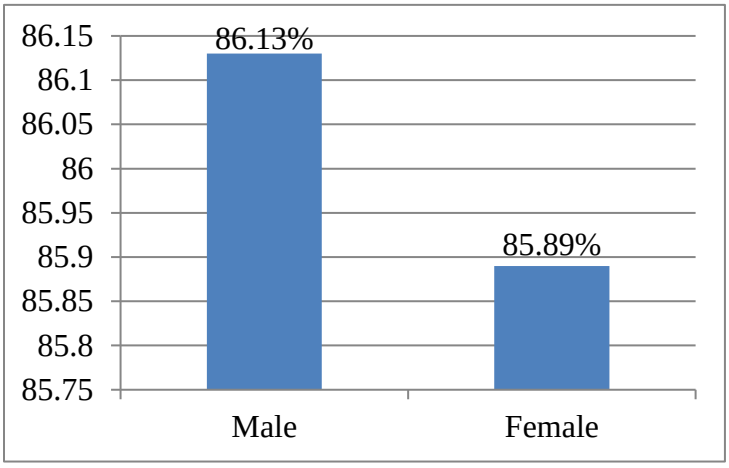


Table 4 showing the mean comparison of scientific attitude between male and female secondary school teachers of Ladakh.

Group	N	Mean	S. D	t-value	Level of Significance
Male	150	86.13	8.37	0.25	Not Significant
Female	150	85.89	7.91		

A quick look at the table 4 shows a comparative analysis of male and female secondary school teachers of Ladakh. The data reveals that there is no significant mean difference between the two groups which confirms that both the groups are equal on scientific attitude. The mean difference favours the male teachers of Jammu & Kashmir, but the difference failed to arrive at any confidence level.



Major findings of the study

On the basis of the statistical data, the following findings have been drawn from the present investigation:

1. In this study, Table 1 presents the results showing that a good percentage of 63.00 secondary school teachers in Jammu and Kashmir and 64.33% of Ladakhi secondary school teachers were found to have a moderate scientific attitude. The data also reveals that 3.66% of Jammu and Kashmir and 2.33% of Ladakhi secondary school teachers were found to have a very high scientific attitude. The data further reveals that 1.33% of Jammu and Kashmir and 1.66% of Ladakhi secondary school teachers have a very low scientific attitude.
2. The table 2 presents the results, which shows that there is a significant mean difference between Jammu & Kashmir and Ladakh and confirms that secondary school teachers in Jammu and Kashmir have higher degrees of scientific attitude as compared to secondary school teachers in Ladakh.

3. The table 3 reveals that there is no significant mean difference between male and female secondary school teachers in Jammu and Kashmir, which shows that both male and female secondary school teachers have almost the same scientific attitudes.
4. The table 4 reveals that there is no significant mean difference between male and female secondary school teachers in Ladakh, which shows that both male and female secondary school teachers have the same scientific attitude.

Educational implications

1. According to the findings of this study, majority of the secondary school teachers were found to have moderate level of scientific attitude therefore in every school, modern scientific magazines, journals, science films, and videos should be available to teachers and students. Science exhibitions and fairs should also be held to get people interested in science education.
2. Teachers' scientific attitudes can also be developed by exposing them to an environment in which they can freely explore the scientific world. By doing so, teachers will feel more at ease studying science and will be able to enhance their scientific temper.
3. Secondary school teachers can build scientific attitudes through the deliberate planning of scientific activities, such as involving them in scientific discussions and developing an innovative and engaging experiment.
4. The school environment is a big part of how teachers learn to think scientifically and come up with new ideas in science. A well-equipped science lab with scientific models and a library with scientific literature could give the school the right facilities and infrastructure.
5. In the classroom, teachers may employ appropriate methodologies and the most recent technologies for science education. Good science teaching methodology includes methods such as learning by doing, self-discovery, problem solving, and experimentation. These methods develop logical thinking, judgement, and acceptance of facts after proper verification, which contribute directly to the development of scientific attitude.
6. There is a need to incorporate different models of teaching science after analyzing teaching learning situations in classrooms. Few of these models can be psychological models, interaction model, behaviour modification models etc.

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