

A Study Of Scientific Attitude Of Upper Primary School Students

Dr. Sanjay M. Gupta^{1*}, Alpeshkumar K. Chakravarti²

^{1*}M.Com., M.Ed., PhD.

²M.Sc., M.Ed., M.Phil.

Citation: Dr. Sanjay M. Gupta, Alpeshkumar K. Chakravarti, (2024) A Study Of Scientific Attitude Of Upper Primary School Students, *Educational Administration: Theory and Practice*, 30(6), 132-135
Doi: 10.53555/kuey.v30i6.5130

ARTICLE INFO

ABSTRACT

In present study, the researcher investigated Scientific Attitude of upper primary school students of Ahmedabad district. The main objective of researcher was to study Scientific Attitude of upper primary school students selected from Ahmedabad city. The researcher constructed Scientific Attitude Scale for students of Grade 8. The researcher selected 3170 upper primary school students from Ahmedabad district. After investigation, it is revealed that the students of urban area have more scientific attitude than students of rural area. It is also revealed that the boys have more scientific attitude than the girls.

Key words: scientific attitude, upper primary schools, grade 8, Ahmedabad district, Scientific Attitude Scale.

Introduction

Science has an important role in promoting the quality of life either directly or indirectly. Science not only fulfils the general requirements for its inclusion in the curriculum like intellectual, cultural, moral, aesthetic, utilitarian as well as professional values, science education imparts training in scientific method and also helps in developing scientific attitude of mind. In the learner. The acquisition of knowledge of scientific terms, principles and concepts, their clear understanding, the ability to use such knowledge in various life situations and the development of skills should be the outcomes of science education and training. Moreover, students should develop a proper attitude towards the study of science besides appreciating the importance of science in human life and culture. It also helps in improving their skills and abilities in science. In present study, the researcher investigated Scientific Attitude of upper primary school students of Ahmedabad district.

Objectives of the Study

Objectives of present study are as follow:

1. To study scientific attitude of upper primary school students.
2. To study scientific attitude of upper primary school students in the context of area.
3. To study scientific attitude of upper primary school students in the context of gender.

Hypotheses of the Study

Hypotheses of present study are as mentioned below.

- HO₁ There is no significant difference between mean scores of Scientific Attitude Scale obtained by students of urban area and rural area.
- HO₂ There is no significant difference between mean scores of Scientific Attitude Scale obtained by boys and girls of upper primary schools.
- HO₃ There is no significant difference between mean scores of Scientific Attitude Scale obtained by boys and girls of urban area.
- HO₄ There is no significant difference between mean scores of Scientific Attitude Scale obtained by boys and girls of rural area.

Variables of the Study

The researcher defined independent and dependent variables as mentioned below.

1. Independent Variables

1) Area

- Rural
- Urban

2) Gender

- Boys
- Girls

2. Dependent Variables

Scores of Scientific Attitude Scale are dependent variables.

Definitions of Keywords

Scientific Attitude

According to National Society for the Study of Education (NSSE),

“Scientific attitudes can be defined as open-mindedness, desire for accurate knowledge, confidence in procedures for seeking knowledge and the expectation that the solution of the problem will come through the use of verified knowledge.”

According to Akcay Hakan & Yager Robert (2010),

“Attitude towards science can be defined as the feelings, beliefs and values held about an object that may be the endeavour of science, school science, the impact of science and technology on society, or scientists.”

Limitations of the Study

Following are the limitations of present study.

1. Present study was conducted on Grade-8 students of upper primary schools.
2. The researcher selected school which are situated in Ahmedabad district.
3. Only Gujarati medium schools were chosen for present study.

Research Method

The main objective of researcher was to study Scientific Attitude of upper primary school students selected from Ahmedabad city. The researcher constructed a survey tool for this study and it was applied on randomly selected students from upper primary schools of urban and rural area of Ahmedabad district. Thus, descriptive survey method was used.

Research Tool

The researcher constructed Scientific Attitude Scale for students of Grade 8 of upper primary schools of Ahmedabad district. In final scale, total 48 items were comprised. Each item has five responses: 1) Totally Agree, 2) Agree, 3) Neutral, 4) Disagree and 5) Totally Disagree.

Sample of the Study

The researcher selected 3170 upper primary school students from Ahmedabad district. The final sample of study is given as below.

Table 1.0 Sample of the Study

Area/Gender	Urban	Rural	Total
Boys	796	811	1607
Girls	778	785	1563
Total	1574	1596	3170

Techniques of Statistical Analysis

The researcher constructed four hypotheses as mentioned above. These hypotheses were checked using t-tests. The results of t-tests are mentioned below.

Ho₁, There is no significant difference between mean scores of Scientific Attitude Scale obtained by students of urban area and rural area.

Table 2.0 t-test between mean scores of students of urban and rural area

Area	N	M	SD	SED	t	Significance
Urban	1574	92.135	19.605	0.73	4.13	0.01
Rural	1596	89.11	21.595			

df	0.05	0.01
3168	1.96	2.58

According to above table, calculated t-value is 4.13. For $df=3168$, calculated t-values are 1.96 at 0.05 level and 2.58 at 0.01 level. Calculated t-value is more than table t-values at both levels. Therefore, hypothesis HO_1 is rejected and there is a significant difference between mean scores of Scientific Attitude Scale obtained by students of urban and rural area. Furthermore, mean score of students of urban area is more than mean score of students of rural area. This revealed that students of urban area have more scientific attitude than students of rural area.

HO_2 There is no significant difference between mean scores of Scientific Attitude Scale obtained by boys and girls of upper primary schools.

Table 3.0 t-test between mean scores of boys and girls

Gender	N	M	SD	SED	t	Significance
Boys	1607	97.135	21.455	0.73	17.79	0.01
Girls	1563	84.11	19.745			

df	0.05	0.01
3168	1.96	2.58

According to above table, calculated t-value is 17.79. For $df=3168$, calculated t-values are 1.96 at 0.05 level and 2.58 at 0.01 level. Calculated t-value is more than table t-values at both levels. Therefore, hypothesis HO_2 is rejected and there is a significant difference between mean scores of Scientific Attitude Scale obtained by boys and girls. Furthermore, mean score of boys is more than mean score of girls. This revealed that boys have more scientific attitude than girls of Grade 8 of upper primary schools.

HO_3 There is no significant difference between mean scores of Scientific Attitude Scale obtained by boys and girls of urban area.

Table 4.0 t-test between mean scores of boys and girls of urban area

Urban	N	M	SD	SED	t	Significance
Boys	796	98.64	20.59	0.99	13.15	0.01
Girls	778	85.63	18.62			

df	0.05	0.01
1572	1.96	2.58

According to above table, calculated t-value is 13.15. For $df=1572$, calculated t-values are 1.96 at 0.05 level and 2.58 at 0.01 level. Calculated t-value is more than table t-values at both levels. Therefore, hypothesis HO_3 is rejected and there is a significant difference between mean scores of Scientific Attitude Scale obtained by boys and girls of urban area. Furthermore, mean score of boys of urban area is more than mean score of girls of urban area. This revealed that boys have more scientific attitude than girls of Grade 8 of upper primary schools of urban area.

HO_4 There is no significant difference between mean scores of Scientific Attitude Scale obtained by boys and girls of rural area.

Table 5.0 t-test between mean scores of boys and girls of rural area

Rural	N	M	SD	SED	t	Significance
Boys	811	95.63	22.32	1.08	12.06	0.01
Girls	785	82.59	20.87			

df	0.05	0.01
1594	1.96	2.58

According to above table, calculated t-value is 12.06. For $df=1594$, calculated t-values are 1.96 at 0.05 level and 2.58 at 0.01 level. Calculated t-value is more than table t-values at both levels. Therefore, hypothesis HO_4 is rejected and there is a significant difference between mean scores of Scientific Attitude Scale obtained by boys and girls of rural area. Furthermore, mean score of boys of rural area is more than mean score of girls of rural area. This revealed that boys have more scientific attitude than girls of Grade 8 of upper primary schools of rural area.

Major Findings of the Study

From statistical analysis, following findings could be made.

1. The students of urban area have more scientific attitude than students of rural area.

2. The boys have more scientific attitude than girls of Grade 8 of upper primary schools.
3. The boys have more scientific attitude than girls of Grade 8 of upper primary schools of urban area.
4. The boys have more scientific attitude than girls of Grade 8 of upper primary schools of rural area.

Conclusion

A scientific approach allows children to be curious about learning about the natural environment and investigating biological and physical changes. This prepares them to face their future with responsibility, along with the ability to learn and learn how to learn. In present study, the researcher investigated scientific attitude of primary school students of Ahmedabad district. After investigation, it is revealed that the students of urban area have more scientific attitude than students of rural area. It is also revealed that the boys have more scientific attitude than the girls.

References

1. Anastasi, A. (1957), *Psychological testing*, New York: The McMillian Pub.
2. Baumeister, R. F. (Ed.) (1999). *The self in social psychology*. Philadelphia, PA: Psychology Press (Taylor & Francis).
3. Dabas, N. (2011), *A Study Of Teacher Effectiveness Among Elementary School Teachers Of Haryana In Relation To Their Attitude Towards Teaching And Self-Concept* (unpublished doctoral dissertation), Department of education, Maharshi Dayanand University, Rohtak.
4. Garrett, H. E. (1981). *Statistics in psychology and educational*. Bombay : Vakil Fetter and Simons Pvt. Ltd.
5. Jose, A. (2001), *Adolescents' Creativity, A Study With Reference To The Self-Concept And Achievement Motivation* (unpublished doctoral dissertation), Department of social work, RCSS, Kalamassery, Kerala.
6. Kerlinger, F. N. (1997). *Multiple Regression in Behavioural Research*. Belmont : Wadsworth Publishing Co. Inc.
7. McGrath (1970). *Research methods and design for education*. Seaton: International text book company.
8. Staneson, R. S. (1975), Edited By : Ghanshyam B. Parekh. *Planning and Method of Educational Research*. Ahmedabad : Bharat Prakashan.
9. Sukhia, S. P. & Mehrotra, R. N. (1966), *Elements of Educational Research*, New Delhi: Allied Publishers.
10. Vaughn, G. M. (2010), *Essentials of Social Psychology*, Harlaw: Pearson Education Limited.