

Vol 3 Issue 3 April 2013

Impact Factor : 0.2105

ISSN No : 2230-7850

Monthly Multidisciplinary
Research Journal

Indian Streams Research Journal

Executive Editor

Ashok Yakkaldevi

Editor-in-chief

H.N.Jagtap

IMPACT FACTOR : 0.2105

Welcome to ISRJ

RNI MAHMUL/2011/38595

ISSN No.2230-7850

Indian Streams Research Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial Board readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

International Advisory Board

Flávio de São Pedro Filho Federal University of Rondonia, Brazil	Mohammad Hailat Dept. of Mathmatial Sciences, University of South Carolina Aiken, Aiken SC 29801	Hasan Baktir English Language and Literature Department, Kayseri
Kamani Perera Regional Centre For Strategic Studies, Sri Lanka	Abdullah Sabbagh Engineering Studies, Sydney	Ghayoor Abbas Chotana Department of Chemistry, Lahore University of Management Sciences [PK]
Janaki Sinnasamy Librarian, University of Malaya [Malaysia]	Catalina Neculai University of Coventry, UK	Anna Maria Constantinovici AL. I. Cuza University, Romania
Romona Mihaila Spiru Haret University, Romania	Ecaterina Patrascu Spiru Haret University, Bucharest	Horia Patrascu Spiru Haret University, Bucharest, Romania
Delia Serbescu Spiru Haret University, Bucharest, Romania	Loredana Bosca Spiru Haret University, Romania	Ilie Pintea, Spiru Haret University, Romania
Anurag Misra DBS College, Kanpur	Fabricio Moraes de Almeida Federal University of Rondonia, Brazil	Xiaohua Yang PhD, USA
Titus Pop	George - Calin SERITAN Postdoctoral Researcher	Nawab Ali Khan College of Business Administration

Editorial Board

Pratap Vyamktrao Naikwade ASP College Devrukh,Ratnagiri,MS India	Iresh Swami Ex - VC. Solapur University, Solapur	Rajendra Shendge Director, B.C.U.D. Solapur University, Solapur
R. R. Patil Head Geology Department Solapur University, Solapur	N.S. Dhaygude Ex. Prin. Dayanand College, Solapur	R. R. Yalikal Director Managment Institute, Solapur
Rama Bhosale Prin. and Jt. Director Higher Education, Panvel	Narendra Kadu Jt. Director Higher Education, Pune	Umesh Rajderkar Head Humanities & Social Science YCMOU, Nashik
Salve R. N. Department of Sociology, Shivaji University, Kolhapur	K. M. Bhandarkar Praful Patel College of Education, Gondia	S. R. Pandya Head Education Dept. Mumbai University, Mumbai
Govind P. Shinde Bharati Vidyapeeth School of Distance Education Center, Navi Mumbai	Sonal Singh Vikram University, Ujjain	Alka Darshan Shrivastava Shaskiya Snatkottar Mahavidyalaya, Dhar
Chakane Sanjay Dnyaneshwar Arts, Science & Commerce College, Indapur, Pune	G. P. Patankar S. D. M. Degree College, Honavar, Karnataka	Rahul Shriram Sudke Devi Ahilya Vishwavidyalaya, Indore
Awadhesh Kumar Shirotriya Secretary, Play India Play (Trust),Meerut	Maj. S. Bakhtiar Choudhary Director,Hyderabad AP India.	S.KANNAN Ph.D , Annamalai University,TN
	S.Parvathi Devi Ph.D.-University of Allahabad	Satish Kumar Kalhotra
	Sonal Singh	

**Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India
Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.isrj.net**



A STUDY OF SCIENTIFIC TEMPERAMENT AMONG SCIENCE STUDENTS AT HIGHER SECONDARY LEVEL

SAPNA SHARMA

Assistant Professor, Faculty of Education, Banasthali Vidyapith, Rajasthan

Abstract:

Scientific temperament a spirit of inquiry and involves the process of logical reasoning. It tries to find out the cause and the rational justification of an event objectively. The attitude of questioning is the first significant expression of scientific temperament. The scientific temperament is the human nature which starts with the cognition of one's own self in the reality and correlates the same with all that is conceived and perceived in the ecology through the pursuit of observation, analysis, and synthesis. Scientific temperament attempts to explain the cause effect relationship between two or more events. Thus a man with scientific temperament would not like to take for granted and believe in such irrational beliefs and superstitions. The use and application of scientific temperament is concerned not only, with the use of scientific instruments and techniques in the laboratories but it is a commitment to rational and objective methods of inquiry.

INTRODUCTION

This education is influenced by Macaulay's attempt to create "a class of persons, Indian in blood and colour but English in taste, in opinion, in morals and in intellect. To that class we may leave it to refine the vernacular dialects of the country, to enrich those dialects with terms of science borrowed from the western nomenclature."

Thus it is by nurturing this scientific temperament that human individuals can be liberated from irrational beliefs and superstition and they are able to build up an impressive, intellect and rational infrastructure in order to solve the various types of problems.

The question arises that at higher secondary level the students who are studying Science. Have they any scientific temperament does the environment of school. Status of Teacher, Background of students are responsible to develop scientific temperament among students.

Shine (1982) studied scientific attitude to secondary school students, Ghosh (1986) found Boys and Girls have no difference in scientific attitude. Shukla & Sharma (1988) studied on sex differences in scientific creativity. Shrivastava (1992) studied creativity in relation to scientific attitude among Higher Secondary students. Rawat Ruchi (1996) studied scientific temperament among science and social science students. Shaik Liyakath Ali (2009) studied scientific attitude of Class VIII students of Urdu & Telugu Medium of Instruction.

Going through the Studies and to find out the answer of above question researcher identified the following research problem.

STATEMENT OF RESEARCH PROBLEM

"A study of Scientific Temperament among Science students of higher secondary level."

Title : A STUDY OF SCIENTIFIC TEMPERAMENT AMONG SCIENCE STUDENTS AT HIGHER SECONDARY LEVEL
Source: Indian Streams Research Journal [2230-7850] PREETI SAPNA SHARMA yr:2013 vol:3 iss:3

OBJECTIVE OF THE STUDY –

Objectives of the study are as follows -

To study the scientific temperament among science students of higher secondary level

To study the scientific temperament of science student at higher secondary level in reference to sex.

HYPOTHESIS

There is no significant difference in the scientific temperament of Boys and Girls.

OPERATIONAL DEFINITION OF TERM USED

(a) Scientific temperament – In the present study it connotes an individual mental disposition related to six means of Human behaviour as - Scientific attitude, Scientific habit, Scientific thinking, Scientific perception, Scientific literacy, Scientific method.

(b) Higher Secondary level - In present study higher secondary level means the students of XII class.

METHOD OF STUDY

Method of study is survey method.

TOOL

In present study scientific temperament inventory developed by Dr. Anita Singh and Dr. Hari Koon Singh is adopted.

There are 70 items in the inventory. The tool has content and cross validity and reliability of tool is .97
Categorization of the items based on the six aspects of temperament are follows –

Items No.	Aspects of Scientific Temperament
1-12	Scientific Attitude
13-23	Scientific Literacy
24-35	Scientific Thinking
36-42	Scientific Habit
43-53	Scientific Method
54-70	Scientific Perception

The method adopted for scoring is as follows -

1.Favourable items marking 'often' score	-	2
2.Favourable items marking 'Sometime' score	-	1
3.Favourable items marking 'Never' score	-	0
4.Unfavourable items marking 'Never' score	-	2
5.Unfavourable items marking 'Sometime' score	-	1
6.Unfavourable items marking 'often' score	-	0

The scores of Scientific Temperament (in all aspects) are categorized as follows

S.No.	Scientific Temperament Scores	Category
1	125 and above	Very high
2	110-125	High
3	90-110	Average
4	75-90	Low average
5	50-75	Low
6	Below 50	Very low

POPULATION AND SAMPLE

The students of Class XII who had adopted science in their XI class are considered as population and 200 students of Class XII are selected randomly.

STATISTIC USED IN STUDY

Level of scientific temperament of higher secondary level was examined through descriptive statistic, Histogram, Polygon, Men, D and 't' test is used to find out significant difference.

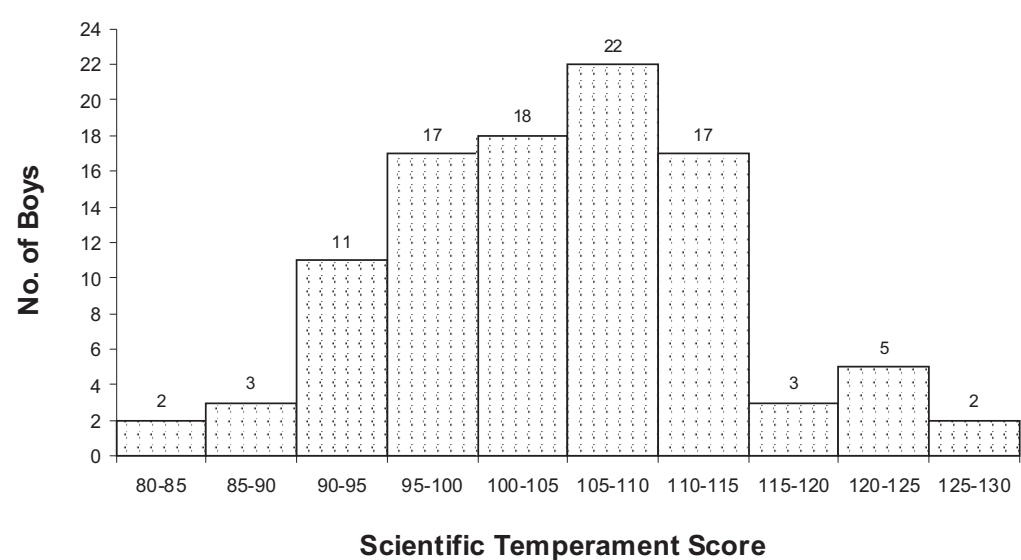
ANALYSIS AND INTERPRETATION

The tool was administrated on selected sample and collected data was analyzed and interpreted as follows -

Table 1 : Scientific Temperament Scores (In class interval) of boys

S.No.	Scientific temperament scores in Class Interval	No. of Boys
1	125-130	2
2	120-125	5
3	115-120	3
4	110-115	17
5	105-110	22
6	100-105	18
7	95-100	17
8	90-95	11
9	85-90	3
10	80-85	2

From the table no. 1 it is clear that no. of boys having scientific temperament scores from 105-110 is 22 which is maximum. It can be said that maximum boys have scientific temperament of average and higher level. 5 boys have scientific temperament of low average level. It is shown in a form of histogram. (Graph 1)

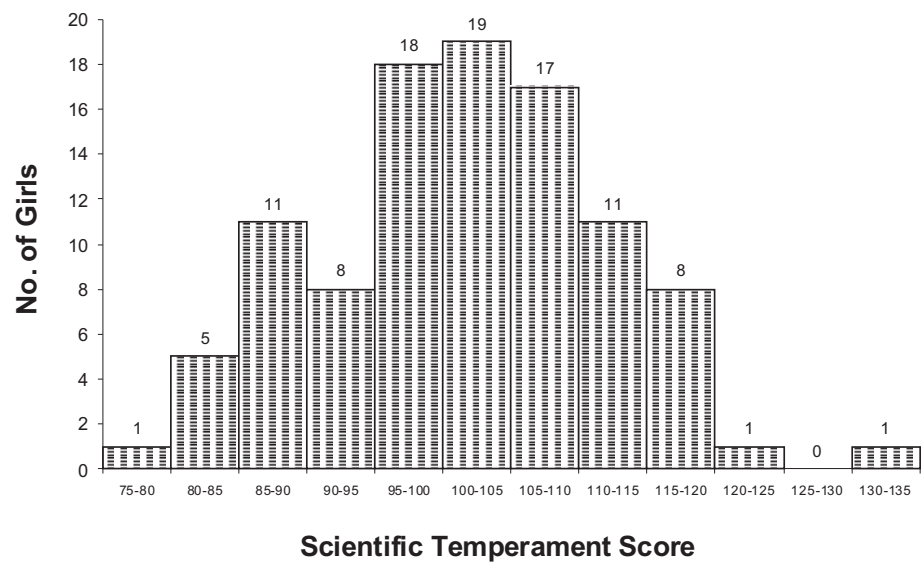


Graph 1 Histogram of Scientific Temperament Scores of Boys

Table 2 : Scientific Temperament Scores (In class interval) of girls

S.No.	Scientific temperament scores in Class Interval	No. of girls
1	130-135	1
2	125-130	0
3	120-125	1
4	115-120	8
5	110-115	11
6	105-110	17
7	100-105	19
8	95-100	18
9	90-95	8
10	85-90	11
11	80-85	5
12	75-80	1

From the table no. 2 it is clear that no. of girls having scientific temperament scores from 100-105 is 19 which is maximum. Therefore it can be said that maximum girls have scientific temperament of average level. 17 girls have scientific temperament of low average level. It is show in histogram. (Graph 2)



Graph 2 : Histogram of Scientific Temperament Scores of Girls

Table 3 : Scientific Temperament scores of Boys and Girls

S.No.	Scientific Temperament Scores (Class Interval)	Mid Point	No. of Boys	No. of Girls
1	129.5-134.5	132	0	1
2	124.5-129.5	127	2	0
3	119.5-124.5	122	5	1
4	114.5-119.5	117	3	8
5	109.5-114.5	112	17	11
6	104.5-109.5	107	22	17
7	99.5-104.5	102	18	19
8	94.5-99.5	97	17	18
9	89.5-94.5	92	11	8
10	84.5-89.5	87	3	11
11	79.5-84.5	82	2	5
12	74.5-79.5	77	0	1
			f= 100	f= 100

From the table 3 scientific temperament scores of boys & girls are presented in a Polygon (Graph 3)

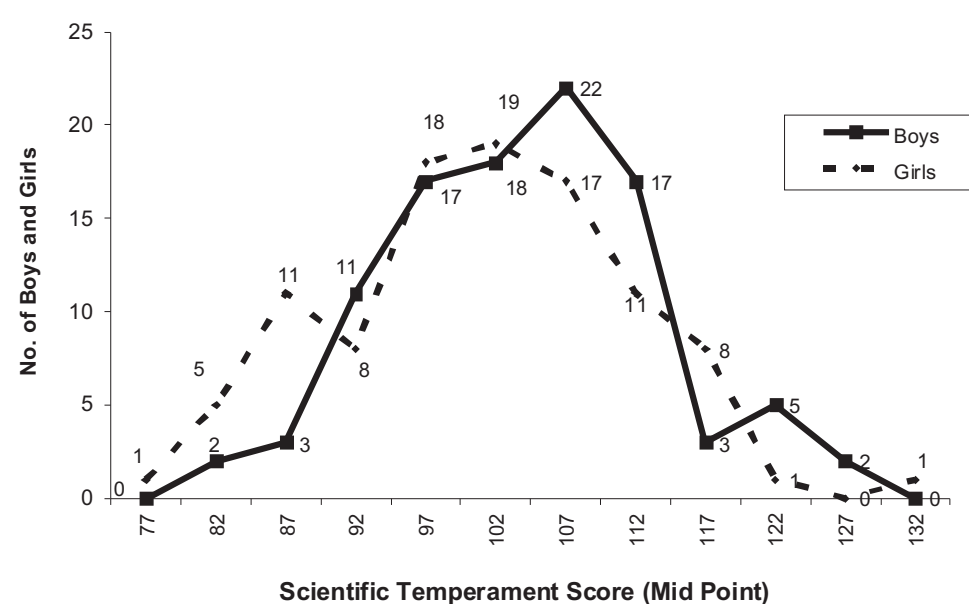


Table 4 : Scientific Temperament of Boys and Girls

Sample	N	M	S	D	D	t-value
Boys	100	$M_1=103.95$	$S_1=9.375$	1.058	1.40	0.75
Girls	100	$M_2=101.05$	$S_2=10.433$			

M=Mean;

S= Standard deviation

$D=M_1-M_2$

D = Standard error of difference of two mean;

df= degree of freedom

From the table value of t is .75. The table value of t at .01 level is 2.60 and at .05 level 't' value is 1.97. Here calculated value of 't' is very low then the value of 't' at .05 & .01 level. So it can be said that there is no significant difference in the mean scores of scientific temperament of boys and girls.

CONCLUSION AND DISCUSSION

In the present study it is clear that scientific temperament vary in boys and girls. The level of scientific temperament vary in boys and girls but the difference is not significant. So sex difference does matter in developing scientific temperament.

EDUCATION IMPLICATIONS

This study may be useful in developing content, curriculum for enhancing the scientific temperament among students. By evolving innovative teaching techniques and their application in real classroom, scientific temperament can be developed.

DELIMITATION

Their study is delimited to XII class science students
In this study only six aspects of scientific temperament are considered.

REFERENCE

- I.Agarwal, J. S. (1994): "*Essentials of Educational Psychology*", Vikas Publishing House, New Delhi.
- II.Agarwal J.C. (1995): "*Educational Research – An Introduction*", Arya Prakashan, New Delhi.
- III.Ansari, M.S. (2000) : "*Essentials of Measurement and Evalution*", International Publishing House, Meerut.
- IV.Datta, Shrivastava, (1985); "*Science and Society*", Vikas Publication House, Ghaziabad
- V.Gupta S.P., Alka, (2005) : "*Statistical method in Behavioural Science*," Sharda Pustak Bhawan, Allahabad
- VI.Kaul Lokesh (1981): "*Methodology of Educational Research*", Vikas Publishing, New Delhi.

JOURNALS

- (1)Gafoor, K. Ryni : Scientific Attitude : Does it differ with academic achievement, gender subject of Study community and parents Education, Edutracks : Neel Kamal Publication, Pvt, Ltd. Hyderabad, Vol. No. 9 May (2006)
- (2)P.K. Aruna and P. Usha "Influence of cognitive style, intelligence and classroom climate on process outcomes in science," Edutracks : Neelkamal Publication pvt. Ltd. Hyderabad Vol. 5 No. 10, (June 1998).
- (3)R. Shahaya Marg, Paul Raj "Scientific Attitude of Upper Primary Students towards science learning." Edutracks : Neelkamal Publication Pvt. Ltd. Hyderabad, Vol. 8, No. 2, (Oct 2008)
- (4)Shaik Liyakhath Ali "Scientific Attitude of Class VII Urdu and Telgu Medium School", Edutracks : Neelkamal Publication Pvt. Ltd. Hyderabad, Vol. 9, No. 11, (Sep. 2009).

Publish Research Article International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished research paper.Summary of Research Project,Theses,Books and Books Review of publication,you will be pleased to know that our journals are

Associated and Indexed,India

- ★ International Scientific Journal Consortium Scientific
- ★ OPEN J-GATE

Associated and Indexed,USA

- Google Scholar
- EBSCO
- DOAJ
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Databse
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database

Indian Streams Research Journal
258/34 Raviwar Peth Solapur-413005,Maharashtra
Contact-9595359435
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com
Website : www.isrj.net