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## EVALUATION OF SCIENTIFIC ATTITUDE AMONG STUDENT TEACHERS



**S. Raja kumar**

**Assistant Professor, GRT College of Education, Tiruttani, Tamilnadu.**

### ABSTRACT:

Scientific Attitude is essential for the student teachers to develop the right kind of scientific attitude and scientific temper among them, which will be enormously supportive in teaching scientific attitude to their students during the classroom teaching. The present investigation is an attempt has been made to study the Scientific Attitude of student Teacher in Madurai District, Tamil Nadu, India. The tool scientific attitude inventory developed and standardized by Asokan and it was slightly modified by the researcher. The result reveals that the student Teachers have moderate level of Scientific Attitude and the Scientific Attitude differs significantly with respect to their Arts and Science stream and Parents occupation.

**KEY WORDS:** *Scientific Attitude, Teacher Education Students, Madurai District*

### INTRODUCTION

In actual fact of scientific attitude is a composite of a number of mental habits, or of tendencies to react again and again in certain ways to a novel or problematic situation. These habits or tendencies include accuracy, rational truthfulness, open-mindedness, suspended judgment, criticalness, and a tendency of looking for true cause and effect relationships. It is a cognitive idea; scientific attitudes are normally connected with the mental processes of scientists. These habits are significant in the day by day life and thinking, not only of the scientist, but of each one. Scientific attitudes possess attributes thought to be either true or false and do not express an evaluative excellence.

The student teachers doing bachelor of education should understand that promote of scientific attitude is one of the objectives of teaching science. It is very important outcome of the process of science education, scientific attitude is vital to enable the students to adjust themselves and live as



efficient citizens of scientific society. Studies carried out have shown that the teachers' method of science teaching and his personality greatly accounted for the students' positive attitude towards science and that, without significance and personal effort in learning science by the students, they can hardly perform well in the subject. The teacher should develop positive connection with students and anxiety classroom activities that involve active teaching-learning process and student's participation in the class. Attitude of students can be influenced only by the attitude of the teacher and his method of teaching. Hence it is necessary for the student teachers to develop scientific attitude among themselves which will be extremely helpful in inculcating scientific attitude to their students throughout the classroom teaching.

### Objectives of the Study

1. To analyze the Scientific Attitude of student teacher.
2. To compare the Scientific Attitude between male and female student teachers.
3. To compare the Scientific Attitude of student teachers with respect to age.
4. To compare the Scientific Attitude between Undergraduate and Post Graduate student teachers.
5. To compare the Scientific Attitude between Arts and science student teachers.
6. To compare the Scientific Attitude between urban and rural area student teachers.
7. To compare the Scientific Attitude of student teachers with respect to Parents educational qualifications.
8. To compare the Scientific Attitude of teacher education students belonging to three level of Parental occupation.
9. To compare the Scientific Attitude with respect to family income of student teachers.
10. To compare the Scientific Attitude between Government aided and private student teachers.

### Hypotheses of the Study

1. The overall Scientific Attitude of teacher education students is high.
2. There exists no significant difference in the Scientific Attitude between the male and female student teachers.
3. There exists no significant difference in the Scientific Attitude of student teachers with respect to age.
4. There exists no significant difference in the Scientific Attitude between Undergraduate and Post Graduate student teachers.
5. There exists no significant difference in the Scientific Attitude between Arts and science group student teachers.
6. There exists no significant difference in the Scientific Attitude between urban and rural area student teachers.
7. There exists no significant difference in the Scientific Attitude with respect to the parent's educational qualification of student teachers.
8. There exists no significant difference in the Scientific Attitude respect to the parent's occupation of student teachers.
9. There exists no significant difference in the Scientific Attitude with respect to the family income of student teachers.
10. There exists no significant difference in the Scientific Attitude between Government aided and private college student teachers.

### Method of Study

In order to realize the above said objectives, normative survey method was employed in this research.

### Tools Used

In this study, the tool name scientific attitude inventory originally developed by Asokan In order to establish reliability Chronbach Alpha reliability coefficient was calculated to be 0.7654. The intrinsic validity coefficient was established by taking the square root of reliability coefficient which is 0.8683. Thus the tool is found to be reliable and valid. The tool was slightly modified in term of language translated into the Tamil to English, naming the dimension and marking the positive and negative items by investigator. This can be used to measure scientific attitude among the student teacher.

### Sample of the study

Random sampling technique has been used in the selection of the sample and 297 student Teacher in Madurai District, Tamil Nadu, India.

### Statistical Techniques Used For Data Analysis

- i. Descriptive analysis (Mean and Standard Deviation)
- ii. Differential analysis (t value & f ratio)

**Table 1 Mean and Standard Deviation of Overall Scientific Attitude With respect To Entire Sample**

Variable	Sample	Mean	SD	Mean percentage
Scientific Attitude	297	161.67	15.58	75

The results inferred that the Mean and Standard Deviation of Scientific Attitude were 161.67 and 15.588 respectively. The results also indicate that the percentage of Mean scores 75 % and the scientific attitude level is moderate.

**Table 2 Mean, Standard Deviations and t- Value of Overall Scientific Attitude With Respect To Gender, Educational Qualification, Group, Type of Management and Residential Area**

Variable	Sub Variables	N	M	SD	t - Value	Sig. Level
Gender	Male	150	163.19	16.33	1.699	NS
	Female	147	160.12	14.68		
Educational qualification	UG degree	191	161.65	14.78	0.031	NS
	PG degree	106	161.71	17.01		
Group (Stream)	Arts	101	157.66	14.05	3.23	0.01
	Science	196	163.73	15.96		
Type of College Management	Govt. Aided	147	162.22	15.60	0.599	NS
	Private.	150	161.13	15.60		
Residential Area	Rural	112	160.7	15.72	0.837	NS
	Urban	185	162.26	15.51		

The result of statistically analyzed demographic variables reveals that there is no significant difference in the level of scientific attitude of the sample with respect to Gender, Group, type of management and Residential area of the students; the results shows that significant difference exist in the level of 0.01 scientific attitude with respect to Group of Students studied.

**Table 3** Mean, Standard Deviations and F-Ratio of Overall Scientific Attitude With Respect To Age, Parental Qualification, Parental Occupation, Parental Annual Income

Variable	Sub Variables	N	M	SD	F ratio	Sig. Level
Age	19 -22 years	128	161.64	14.101	0.939	NS
	23- 26 years	121	162.73	15.886		
	Above 27 years	48	159.08	18.41		
Parental Qualification	Uneducated	36	159.78	17.72	1.672	NS
	Up to Hr. Sec	202	161.0	15.57		
	UG/PG	59	164.8	14.00		
Parents Occupation	Self Employed	117	162.6	15.43	4.259	0.05
	Private Sector	102	158.2	15.50		
	Govt. Sector	78	164.6	15.28		
Parents Annual Income	Up to Rs.20000	56	160.92	12.45	1.78	NS
	Rs.21000-50000	149	160.5	16.87		
	Above Rs.50000	98	164.0	15.08		

The result of statistically analyzed demographic variables reveals that there is no significant difference in the level of scientific attitude of the sample with respect to age, parents educational qualification, parents occupation and family annual income of the students; the result shows that significant difference exist in the level of scientific attitude with respect to parental occupation.

### Major findings

1. The student teachers scientific attitude is moderate.
2. The Results Exist indicates that the mean value of Scientific Attitude with respect to Gender is higher for male (163.19) and lower for female (160.12). From the table it is also inferred that the t-value of male and female do not differ significantly at 0.05 level in Scientific Attitude.
3. The Results Indicates that the mean value of Scientific Attitude is higher for Post Graduate students (161.71) and lower for Under Graduate students (161.65). From the table it is also inferred that the t-value of Under Graduate and Post Graduate students do not differ significantly at 0.05 level.
4. The results show that the mean values of Scientific Attitude are higher for Science students (163.73) and lower for Arts students (157.66). From the table it is also inferred that the t-value of Science and Arts students differ significantly at 0.01 level in Scientific Attitude.
5. The result indicates that the mean values of Scientific Attitude are higher for Science students (163.73) and lower for Arts students (157.66). From the table it is also inferred that the t-value of Science and Arts students differ significantly at 0.01 level in Scientific Attitude.
6. The result exist that value of Scientific Attitude with respect to Type of management is higher for students studying in Aided colleges (162.22) and lower for students who are studying in Private colleges (161.13). From the table it is also inferred that the t-value of students studying in Aided and Private Colleges do not differ significantly at 0.05 level in Scientific Attitude.



7. The result indicates that the Scientific Attitude with respect to age was higher (162.73) for the students belonging to 23-26 years of age and the same was lower (159.08) for those who belongs to 27 years and above. Further, the F-ratio calculated for the Scientific Attitude with respect to age shows that the students do not differ significantly even at 0.05 level.

8. The results show that the Scientific Attitude with respect to Father's educational qualification was higher (164.81) for the students whose father have completed Undergraduate the same was lower (159.78) for the students whose father is uneducated. Further, the F-ratio calculated for the Scientific Attitude with respect to Father's educational qualification shows that the students do not differ significantly even at 0.05 level.

9. 8.The result Indicates that the Scientific Attitude with respect to Father's occupation was higher (164.65) for the students whose father employed in Government sector and the same was lower (158.23) for the students whose father is employed in private sector. Further, the F-ratio calculated for the Scientific Attitude with respect to Father's occupation show that the students differ significantly at 0.05 level.

10. The result exist that the Scientific Attitude with respect to Family annual income was higher (164.09) for the students whose father's income is Rs.50000 and above and the same was lower (160.55) for the students whose father's income is between Rs.21000 .Further, the F-ratio calculated for the Scientific Attitude with respect to Family annual income show that the students do not differ significantly at 0.05 level.

### CONCLUSION AND DISCUSSION

The result reveals that the scientific attitude of teacher education students is moderate and it is differ significant with respect to teacher education student studied group(Arts/Science) and Parents occupation, other demographical variables exert do not significant at any level.

The study also revealed that students of science and arts stream were science group more scientific attitude than the arts group of student teachers the probable reason behind it might be the difference in curriculum of these stream of study which are based on more realistic education and observation as compared to arts. It was also found that students with higher pedagogic achievement had greater scientific attitude. The findings of the study are on the line with the findings of previous researches (Swami 2012, Pillai 2012, Sharma 2005 and Anand 2002).

The scientific attitude of teacher education students belonging to their parental occupation is higher for the students whose fathers have worked in govt. sector, because those students may get proper guidance from their parents and they may have a good interaction with colleague and scientific knowledge.

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**S. Raja kumar**

Assistant Professor, GRT College of Education, Tiruttani,  
Tamilnadu.



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