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TO STUDY THE SCIENTIFIC ATTITUDE AND SELF EFFICACY OF SECONDARY SCHOOL STUDENTS OF CHANDRAPUR DISTRICT

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ABSTRACT

The purpose of this paper was to study the scientific attitude and self efficacy of secondary school students of Chandrapur district. The population of the study consists of secondary school students of Chandrapur district. Out of the total population 100 students have been taken by random sampling method. The Scientific attitude scale and Self Efficacy test has been used as a tool. Data collected is then analysed by using statistical techniques and final discussion and educational implications have been given.

INTRODUCTION

A well planned science education programme can be a fruitful effort in developing the desired attitudes and shaping the scientific outlook. Recognizing the importance of science and science education Nehru (1938) observed that "it is science alone that can solve the problems of hunger and poverty, of insanitation and illiteracy, of superstition, customs and traditions, of vast resources running off waste, of a rich country inhabited by starving people. Even more than the present, the future belongs to the science and those who make friends with science… ". The societies of the twenty first century will, quite clearly, continue to be shaped by science and technology, quite as importantly, science and technology are indispensable in helping the societies from where they are now to where they aspire to be in the next century. The proper and responsible use of science and technology is an urgent need of all societies, in order to achieve the twin goals of development and of improved quality of life for each society. Teaching of science in schools can and should make a positive difference in the lives of all people. In the past science had struggled hard and long for its rightful place in the school curriculum. There was a time when science was considered as an inferior subject to study and classics and mathematics were given importance. Science education, in one form or another, has a recognized place in school education now.

Watson (1961) observes that there has been a growing tendency to view scientific attitudes as equal to, or superior to, the knowledge objective of science instruction. Science teachers are

becoming aware that if scientific attitudes are to develop from the study of science, they must be taught directly and systematically in the same manner, as mastery of the principles of science is developed. The scientific way of handling any problem and a scientific attitude of mind should be inculcated in all individuals in order that they do not accept things on hearsay, propaganda or superstitious traditions but upon conclusions arrived at on the basis of reason and evidence. Meaningful knowledge, employable and useful skills, rational and scientific attitudes ought to be the consequences of a meaningful science education endeavor.

OBJECTIVES:

The major objectives of the study were : there is any significant difference is Self – efficacy of high and low scientific attitude of boys.

The major objectives of the study were :

- To study whether there is any significant difference is Self – efficacy of high and low scientific attitude of boys.
- To Study whether there is any significant difference in self – efficacy of high and low scientific attitude of girls.
- To Study whether there is any significant difference in self – efficacy of high and low scientific attitude of boys and girls.

HYPOTHESIS: Hypothesis of the study were:

- There will be no significant difference is Self – efficacy of high and low scientific attitude of boys.
- There will be no significant difference in self – efficacy of high and low scientific attitude of girls.
- There will be no significant difference in self – efficacy of high and low scientific attitude of boys and girls.

POPULATION OF THE STUDY:

Students of IX class from secondary school of five district of Vidarbha region had taken for the population of the present study

SAMPLE OF THE STUDY:

200 pupils comprising of both the sexes in equal number was selected by Random sampling.

TOOL USED:
Scientific attitude scale and Self Efficacy test.

RESULTS:
Table 1: Significant difference in self efficacy of high and low scientific attitude of boys.

Scientific Attitude↓	Self Efficacy				
	Mean	SD	Difference	z-value	p-value
Low (upto 42)	32.34	4.35	11.86±1.12	10.50	0.000 S,p<0.05
High (>42)	44.20	7.10			

Table 2: Significant difference in self efficacy of high and low scientific attitude of girls

Scientific Attitude↓	Self Efficacy				
	Mean	SD	Difference	z-value	p-value
Low (upto 42)	38	5.41	9.55±1.65	5.78	0.000 S,p<0.05
High (>42)	47.55	7.65			

Table 3: Significant difference in self efficacy of high and low scientific attitude of boys and girls

Scientific Attitude↓	Self Efficacy				
	Mean	SD	Difference	z-value	p-value
Low (upto 42)	34.31	5.43	11.59±0.97	11.94	0.000 S,p<0.05
High (>42)	45.91	7.57			

Discussion of Scientific Attitude and Self Efficacy Results

Results of boys shows that for Low Scientific Attitude the mean value of Self Efficacy is32.34 4.35± and for High Scientific Attitude the mean value of Self Efficacy is 44.20±7.10. Mean difference among Low and High Self Efficacy is11.86 ±1.12. By using z test the difference between mean value reveals that there is a significant difference among Self Efficacy of Low and High Scientific Attitude(z=10.50, p-value=0.000) i.e. boys having Low Scientific Attitude shows Low Self Efficacy whereas boys having High Scientific Attitude shows High Self Efficacy .Hence on the basis of above results hypothesis that there will be no significant difference in Self Efficacy of boys of low and high Scientific Attitude is not accepted.

Results of girls shows that for Low Scientific Attitude the mean value of Self Efficacy is 38.00 ±5.41 and for High Scientific Attitude the mean value of Self Efficacy is 47.55±7.65. Mean difference among Low and High Self Efficacy is 9.55±1.65. By using z test the difference between mean value reveals that there is a significant difference among Self Efficacy of Low and High Scientific Attitude(z=5.78s, p-value=0.000) i.e. girls having Low Scientific Attitude shows Low Self Efficacy whereas girls having High Scientific Attitude shows High Self Efficacy .Hence on the basis of above results hypothesis that there will be no significant difference in Self Efficacy of girls of low and high Scientific Attitude is not accepted.

Results of boys and girls shows that for Low Scientific Attitude the mean value of Self Efficacy is42.15 ±9.57 and for High Scientific Attitude the mean value of Self Efficacy is 60.55 ±11.05. Mean difference among Low and High Self Efficacy is 18.39±1.42. By using z test the difference between mean value reveals that there is a significant difference among Self Efficacy of Low and High Scientific Attitude(z=12.88, p-value=0.000) i.e. boys and girls having Low Scientific Attitude shows Low Self Efficacy whereas boys and girls having High Scientific Attitude shows High Self Efficacy .Hence on the basis of above results hypothesis that there will be no significant difference in Self Efficacy of boys and girls of low and high Scientific Attitude is not accepted.

Suggestion for curriculum construction :

As the scientific attitude effects the different spheres of life of students it is necessary to develop the scientific attitude among students . For development of scientific attitude following suggestions can be included in the curriculum.

Science and mathematics should be taught and made compulsory to all students during the first 12 years of education.

At the high and higher secondary level more emphasis should be given on practical work, project work,teaching should be looked with vocational courses and technology. In rural areas agriculture and farming technology in urban areas should added to the curriculum.

Suggestion for students :

1. Students should take keen interest in practical work.
2. What ever scientific knowledge they have gained from the books should be applied practically in proper way.
3. Observed the environment and surroundings keenly and learn from it.
4. Subjects should appreciate the nature's beauty and should be keen to understand its value.
5. Students should study the each and every situation, cause and effect. Then they should take decision.

REFERENCES

1. Akpinar, E., Yildiz. E., Tatar, N., & Ergen, O. (2009). Students' attitudes toward science and technology: An investigation of gender, grade level, and academic achievement. Procedia Social and Behavioral Sciences, 1, 2804-2808.
2. Bennett, J. (2001). The development and use of an instrument to assess students' attitude to the study of chemistry. International Journal of Science Education, 23, 833–845.
3. Dani, D.N. (1984). Scientific attitude and cognitive styles of higher secondary students In Buch, M.B.(Ed.). Fourth survey of research in education, New Delhi: N.C.E.R.T.,1991.
4. Darchin, P. (1989). A study of science achievement, science attitude and problem solving ability among the secondary school students in the Aizawl. Fifth Survey of Research in Education. New Delhi: N.C.E.R.T., 1997
5. George,Josemon P. (1997). A study on the relationship between attainment of Biological concepts and attitude towards science of urban and rural secondary school pupils. Unpublished M.Ed.Thesis, Sree Sankaracharya University of Sanskrit, Kalady.

6. Ghosh.S. (1986). A critical study of scientific attitude and aptitude of the students and determination of some determinants of scientific aptitude. In Buch, M.B. (Ed.) Fourth survey of Research in Education. N.C.E.R.T., 1991.

7. Jegede, O. J., & Fraser, B. (1989). Influence of social-cultural factors on secondary school students' attitude towards science. Research in Science Education, 19(1), 155-163.

8. Kulshreshtha, R. (1983). Value orientations, interests and attitudes as correlates of selfconcept among male and female adolescents. In Buch, M.B. (Ed.). Fourth survey of Research in Education. N.C.E.R.T., 1991.

9. Ray, P. (1990). A study of students' attitude towards studies and health as related to their scholastic achievement. Fifth Survey of Research in Education. New Delhi: N.C.E.R.T. ,1997.