
Research Papers



A Co-relational Study of Scientific Attitude, Creativity and Scholastic Achievement of Secondary School Students

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Abstract

The modern civilization is a scientific civilization. The science has become an integral part of our life. A citizen of modern world sees the countless manifestations of science all around him. In recent times there has been rapid addition of knowledge to the world of science. Science has radically transformed the material environment of the citizens of the modern world. But even more profound is its contribution to culture. Science is liberating and enriching the mind and enlarging the human spirit. Science is no longer confined to a few seriously devoted persons.,

Nobody questions its inclusion as a subject in the school curriculum. Science inculcates certain special values which no other subject can provide. Science learning provides training in scientific method and also helps to develop a scientific attitude of mind in the learner.

The most important objective of school science instruction is to make the pupil aware of the scientific method of procedure and to inculcate scientific attitude of mind. The school will not only give the pupil adequate scientific knowledge and requisite skills to meet the problem of existence but also train them in proper scientific methods of investigating problems and create a scientific attitude in them. The methods of investigation are as important as the facts themselves. The science teacher should always promote an attitude of discovery. An independent and impartial experimentation help the pupils to develop a logical mind; critical judgment and the habit of solving problems independently to find

answers to their own questions. The scientific way of handling any problem and 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 evidences. Even an educator like John Dewey has emphasized method and attitude as objectives of formal education.

The assumption that creativity is not a divine gift but it is possessed by all in greater or smaller proportion and this ability can be nurtured through proper training, is substantiated by researches. It has also been proved that creativity is not identical with intelligence. Educationists have subsequently to acknowledge these findings and reciprocate the demands they are making on education. Traditional aims and objectives of education need to be reconsidered and redefined Intellectual development must be supplemented by stimulating and promoting the development of

creative abilities. Torrance asserts that “The future of our civilization depends upon the quality of the creative imagination of our next generation.”

The development of scientific attitude is one of the objectives of teaching science. It is very significant outcome of the process of science education scientific attitude is essential to enable the students to adjust themselves and live as efficient citizens of scientific society. The learner should be in the process of developing personal philosophy based on truth, understanding logic rather than one based on superstitions, intuition or wishful thinking. So, to promote scientific attitude among pupils, research in this field is required to be done.

There is an urgent need for giving serious thought to the inclusion of creative development as one of the major objectives of education today. Conventional methods like rote-learning or those based on convergent thinking have become outdated in this context. Experiments of More (1561) and Ornstein (1961) have shown that creative learning is more economical and teaching techniques which utilize student's creative abilities, and promote more effective & efficient learning.

Statement of the Problem:

A Co-relational Study of Scientific Attitude, Creativity and Scholastic Achievement of Secondary School Students .

Operational Definitions:

1) Scientific Attitude:

Scientific attitude is a tendency to react consistently to a novel or problematic situation.

2) Creativity: Creativity is a mental and social process involving the discovery of new ideas or concepts.

3) Scholastic achievement:

The marks obtained by students in previous annual examination.

Scope and Limitations:

For this study the secondary schools from Nagpur, Wardha, Bhandara, Chandrapur, Amaravati, Akola & Buldhana districts of Vidarbha region have been selected.

1) This research is confined to Vidarbha region only.

2) Pupils studying in 9th grade are selected between the age group of 14 to 15.

3) In this research following three factors of secondary school students have been considered.

i) Creativity

ii) Scientific Attitude.

iii) Scholastic Achievement.

Objecitves :

1) To study scientific attitude of the secondary school students.

2) To study creativity of the secondary school students.

3) To study scholastic achievement of the secondary school students.

4) To study correlation between scientific attitude, creativity and scholastic achievement of the secondary school students.

5) To compare scholastic achievement between urban and rural secondary school students.

6) To compare scholastic achievement between boys and girls of secondary school students.

Sample:

500 students studying in class IX were selected randomly from different secondary schools from seven districts of Vidarbha, that constituted the sample of the study.

In that, 250 students from urban area (125 boys & 125 girls) and 250 students from rural area (125 boys & 125 girls) have been studied.

Tools:

The following standardized tools were selected and finally used for data collection.

1. Creativity Test - (TCW by Dr. Baquer Mehdi)

2. Scientific Attitude Scale (SAS by Dr. Avinash Grewal)

3. Cumulative Record Card

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Analysis of data:

.The mean, SD, & 't' test and 'r' correlation have been calculated.

Table Showing |r| & P.E. |r|

	Factor	Scientific attitude and creativity			Creativity and scholastic achievement			Scientific attitu scholastic achie		
		r	P.E. r	>, <	r	P.E. r	>, <	r	P.E. r	
1	Total student	0.220	0.028	r > P.E. r	0.050	0.03	r > P.E. r	0.109	0.029	
2	Rural student	0.142	0.062	r > P.E. r	0.085	0.042	r > P.E. r	0.202	0.041	
3	Urban student	0.708	0.021	r > P.E. r	0.268	0.039	r > P.E. r	0.300	0.038	
4	Boys	0.224	0.04	r > P.E. r	0.141	0.042	r > P.E. r	0.124	0.041	
5	Girls	0.100	0.04	r > P.E. r	0.179	0.041	r > P.E. r	0.055	0.042	

Conclusions:

1) Low correlation is found between scientific attitude and creativity of secondary school students.

- 2) No significant relation is found between creativity and scholastic achievement of secondary school students.
- 3) There is negative correlation between scientific attitude and scholastic achievement of secondary school students.
- 4) The secondary school students are found to possess average level of scientific attitude and creativity.
- 5) There is no significant correlation between scientific attitude of boys and girls.
- 6) There is no significant correlation between creativity of boys and girls.
- 7) There is no significant difference between scholastic achievement of boys and girls.
- 8) There is low correlation between scientific attitude and creativity with scholastic achievement of boys.
- 9) Low correlation is found between scientific attitude and creativity with scholastic achievement of girls.
- 10) There is significant difference between scientific attitude of rural and urban students. It means that scientific attitude of urban student is more as compared to rural students.
- 11) The urban students are creative as compared to rural students.
- 12) No distinction is noticed between scholastic achievement of rural and urban students.
- 13) Low significant correlation is found between scientific attitude and creativity of rural students.
- 14) The moderate correlation is found between scientific attitude and creativity of urban student.
- 15) The low correlation is found between creativity and scholastic achievement of rural students.
- 16) The low correlation is found between scientific attitude and scholastic achievement of rural students.
- 17) There is negative correlation between scientific attitude and scholastic achievement of girls.
- 18) The scholastic achievement of boys is better than that of girls.
- 19) The creativity of girls is comparatively more than that of boys.
- 20) The scientific attitude of boys is comparatively more than that of girls.

Discussion:

The secondary students are found to possess average creativity. The urban students are found to

possess a little bit of higher level of scientific attitude and creativity as compared to rural students.

But as far as scholastic achievement is concerned, there is no distinction between the scholastic achievement of urban and rural students.

Scientific attitude and Creativity are not necessarily related with Sex. The scientific attitude and creativity of boys and girls is average and there is hardly any difference in the level of scientific attitude and creativity possessed by them. This result states that, if opportunities are given to either sex, they can compete each other in any area.

The scholastic achievement of boys is somewhat better as compared to that of girls. The possible reason for this might be the parental encouragement and favorable attitude towards the boys.

The secondary school students are found to possess average scientific attitude. This outcome is identical to that of Bhaskara Rao (1990).

A positive correlation is found among scientific attitude, creativity and scholastic achievement. Now, it is right time for the identification of necessary factors for the promotion of scientific attitude and creativity in school children.

Suggestions:

1. Various programmes should be organised at school level to promote creativity among school students
2. The programmes like science clubs, hobby clubs, exhibitions etc. should be organised to promote scientific attitude among school students.
3. There is need to include creative development as one of the major objectives of education.

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