

ROLE OF SCIENCE TEACHER IN DEVELOPING SCIENTIFIC ATTITUDE AMONG SECONDARY SCHOOL STUDENTS

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INTRODUCTION

The main aim of education is to modify the behavior of child according to the needs and expectation of the society. Behavior is composed of so many attributes. The entire personality and development of child is influenced by the nature of his attitudes.

Learning of a subject and acquisition of habits, interest and other psychological dispositions are all affected by his attitudes. Therefore it is important for a teacher to understand the meaning and nature of attitudes, the factors responsible for its development in a child.

ATTITUDE

ALLPORT- He defined three main features of attitudes

- a) It is preparation of readiness for favorable or unfavorable responses.
- b) It is organized through experience.
- c) It is activated in the presence of all objects and situations with which the attitude is related.

SCIENTIFIC ATTITUDE

Science the beginning of the present century science educators has included the development of scientific attitude among the general aims of science education. Some writers label this attitude as “scientific mindedness” (Burnett, 1944) that habit of scientific thinking” (Noll, 1933 or “the spirit of science” (Educational policies commission, 1966) and it is most often characterized by a list of component attitudes such as objectivity, and a willingness to suspend judgment if there is insufficient evidence” (Okay, 1982).The scientific attitude, by its very name, tends to be associated solely with the area of science. There is a person who has a scientific point of view (1) looks for the nature causes of event; (2) is open-minded toward the work and opinion of other and towards information related to his problem; (3) bases opinions and conclusions on adequate evidence; (4) evaluate techniques and procedures used and information obtained; (5) is curious concerning the things he observes.

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SIGNIFICANCE OF THE STUDY

The sole responsibility of developing scientific attitude among the students lies on the teacher who can manipulate all situations to instill in pupils a scientific attitude and at the same time present himself a role model. This will create a favorable and permanent impression on the students to adopt the same attitude which the teacher has. Who else can develop scientific attitude in children better than science teacher but the pre-requisite is that the science teachers should set an example for the students with a developed scientific attitude and should full of enthusiasm because an enthusiasm helps in context of a) Effective curriculum Transaction by making provisions for optimum physical facilities and providing opportunities for practical work. Therefore, active desire of teachers to cultivate habits and action can gradually lead to acquisition of scientific attitudes.

STATEMENT OF THE PROBLEM

Role of Science Teacher in Developing Scientific Attitude among Secondary School Students

OBJECTIVES

1. To know the opinion of science teacher about the different characteristics that help in developing scientific attitude among secondary school students.
2. To study the opinion of science teacher about the role of teaching facilities and training programs in inculcating the scientific attitude among secondary school students.
3. To compare the opinion of Govt. and private schools.

HYPOTHESIS

1. Teacher with scientific temper and scientific bend of mind develops scientific attitude among secondary school students.
2. Available of teaching facilities and training, programmers enhances teacher's role in developing scientific attitude among secondary school students.
3. There is no difference in the opinion of Government of Private schools teachers about the role of developing scientific attitude among the students.

VARIABLES

INDEPENDENT VARIABLE

1. Scientific attitude

DEPENDENT VARIABLE

1. Achievement

LIMITATIONS OF THE STUDY

1. The study is limited to secondary school Science Teacher.
2. The study is limited to Government & Private schools (English medium).
3. The study is limited to Khammam.

METHODOLOGY

SAMPLE

A sample of 50 science teachers was selected from 20 schools of Khammam District (10 private & 10 Govt. English medium High schools only).

SAMPLING TECHNIQUE

In the present study random sampling method was used which means that every member of the sample is selected from the total population in such a manner that all members of the population have essentially the same probability of being selected. It is an unbiased cross section of the population.

METHOD OF DATA COLLECTION

The researcher personally visited the schools and administered the questionnaires to each of the respondents, building rapport with them and explained them about the study and clarified their doubts if they had any regarding the questionnaires.

DATA ANALYSIS

For the study the researcher has chosen the appropriate statistical technique for data analysis.

STATISTICAL TECHNIQUES USED

The results are calculated based on the frequency and percentage.

INTERPRETATION OF THE DATA

Table 1: Knowledge Achievement & Scientific Attitude

Opinion	Frequency	Percentage
SA	22	44.0
A	16	32.0
U	5	10.0
D	4	8.0
SD	3	6.0
Total	20	100

Out of 50 respondents 22(44.0%) strongly agree 16(32.0%) agree 5(10.0%) are undecided 4(8.0%) disagree 3(6.0%) strongly disagree with the above statement.

The analysis of the above statement shows that teacher should work towards the knowledge achievement as well as the scientific attitude development. Hence the hypothesis-1 is duly accepted.

Table 2: Teacher’s Scientific Attitude:

Opinion	Frequency	Percentage
SA	27	54
A	11	22
U	6	12
D	5	10
SD	1	2
Total	50	100

Out of 50 respondents 27(54.0%) strongly agree 11(22.0%) agree 6(12.0%) are undecided 5(10.0%) disagree 1(2.0%) strongly disagree with the statement.

The analysis of the above statement shows teacher’s possession of scientific attitude very important. Hence the hypothesis-1 is duly accepted.

Table 3: Success in Developing Scientific Attitude Depends on science teacher.

Opinion	Frequency	Percentage
SA	10	20
A	20	40
U	4	11
D	11	8
SD	5	10
Total	50	100

Out of 50 respondents 10(20.0%) strongly agree 20(40.0%) agree 4(8.0%) are undecided 11(22.0%) disagree 5(10.0%) strongly disagree with the statement.

The analysis of the above statement shows teacher’s role is very important in building up pupil’s scientific attitude. Hence the hypothesis-1 is duly accepted.

Table 4: the Development of scientific attitude is a Difficult Task

Opinion	Frequency	Percentage
SA	4	8
A	11	22
U	9	18
D	20	40
SD	6	12
Total	50	100

Out of 50 respondents 4(8.0%) strongly agree 11(32.0%) agree 9(18.0%) are undecided 20(40.0%) disagree 6(12.0%) strongly disagree with the statement,

The analysis of the above statement shows scientific attitude development a performable task but not a difficult one. Hence the hypothesis-1 is duly accepted.

Table5: Relating science to other areas of learning

Opinion	Frequency	Percentage
SA	10	20
A	25	50
U	7	14
D	6	12
SD	2	4
Total	50	100

The analysis of the above statements shows that relating science to other areas of learning help in developing scientific attitude. Hence the hypothesis -1 is duly accepted.

Table 6: in service Training programmers' to teachers.

Opinion	Frequency	Percentage
SA	25	50
A	15	30
U	6	12
D	3	6
SD	1	2
Total	50	100

Out of 50 respondents 25(50.0%) strongly agree 15(30.0%) agree 6(12%) are undecided 3(6%) disagree 1(2%) strongly disagree with the statement.

The analysis shows that training programmers help the teacher to develop scientific attitude in students. Hence hypothesis-2 is duly accepted.

Table 7: A.V. Aids & Technology help in developing scientific attitude among students.

Opinion	Frequency	Percentage
SA	28	56
A	12	24
U	3	6
D	2	4
SD	5	10
Total	50	100

Out of 50 respondents 28(56.0%) strongly agree 12(24.0%) agree 3(6%) are undecided 2(4%) disagree 5(10%) strongly disagree with the statement.

The analysis shows that usage of A. V. aids and technology by the teacher inculcate help the teacher to develop scientific attitude in students. Hence hypothesis-2 is duly accepted.

Table 8:supporting the teacher with a good hand book

Opinion	Frequency	Percentage
SA	28	56
A	15	30
U	4	8
D	2	4
SD	1	2
Total	50	100

Out of 50 respondents 28(56.0%) strongly agree 15(30.0%) agree 4(8%) are undecided 2(4%) disagree 1(2%) strongly disagree with the statement.

The analysis shows that supporting the teacher with a good handbook can definitely enhance a teacher role in developing scientific attitude among secondary school students. Hence hypothesis-2 is duly accepted.

Based on the analysis of Q.No's 19, 20 and 21, Hypothesis-2 that availability of teaching facilities and training programmers enhances teachers to develop scientific attitude among students is duly accepted.

Table 9: Knowledge achievement and scientific attitude.

Opinion	Govt		Private	
	Frequency	Percentage	Frequency	Percentage
SA	7	28	7	28
A	10	40	8	32
U	1	4	4	16
D	2	8	6	24
SD	5	20	-	-
Total	25	100	25	100

The analysis shows that Govt. Schools teachers agree with the statement. Hence hypothesis-3 is rejected.

Table 10: Teacher's scientific attitude

Opinion	Govt		Private	
	Frequency	Percentage	Frequency	Percentage
SA	9	36	8	32
A	6	24	9	36
U	5	20	5	20
D	1	4	3	12
SD	4	16		
Total	25	100	25	100

The analysis shows that most Private Schools teachers agree with the statement. Hence hypothesis-3 is rejected.

Table 11: Success in developing scientific attitude depends on science teacher.

Opinion	Govt		Private	
	Frequency	Percentage	Frequency	Percentage
SA	6	24	6	24
A	9	36	8	32
U	1	4	4	16
D	3	12	7	28
SD	6	24	-	-
Total	25	100	25	100

The analysis shows that Govt. Schools teachers agree with the statement. Hence hypothesis-3 is rejected.

Table 12:Development of scientific Attitude is Difficult Task.

Opinion	Govt		Private	
	Frequency	Percentage	Frequency	Percentage
SA	3	12	6	24
A	9	36	8	32
U	4	16	6	24
D	7	28	5	20
SD	2	8	-	-
Total	25	100	25	100

The analysis shows that most Private Schools teachers agree with the statement. Hence hypothesis-3 is rejected.

Table 13:Relating science to other areas of learning.

Opinion	Govt		Private	
	Frequency	Percentage	Frequency	Percentage
SA	8	32	6	24
A	7	28	10	40
U	5	20	5	20
D	0	0	4	16
SD	5	20	-	-
Total	25	100	25	100

The analysis of the table reveals that there is no difference of opinion between the Govt. and private schools. Hence hypothesis-3 is rejected

RESULTS & MAJOR FINDINGS

Most of the teachers opined positively for the statement which had a five point scale (SA, A, U, D, SD). The science teachers agreed and strongly agreed for the statements that a teacher role is very important in building up the student's scientific attitude by possessing the following characteristics.

1. The science teacher should work towards knowledge achievement of the students and also their scientific attitude development.
2. The teacher must first possess a scientific attitude.
3. Scientific attitude of the pupils depend a mainly on science teacher
4. The development of scientific attitude is not a difficult task by the teacher.
5. Relating science to all other areas, of learning is helpful in developing scientific attitude.
6. Other subject's teacher can also develop scientific attitude
7. The science teacher can also develop scientific attitude.
8. Scientist's lives have an impact on child's attitude towards the subjects.

9. Field trips are successful mean of developing scientific attitude in pupils.
10. An effective way of communication a congenial atmosphere also inculcates scientific attitude.
11. Teacher should be enthusiastic, lively and should enjoy teaching so that they can modify the classroom and bring life into a class room.
12. Science should be taught more practically.
13. The teacher should not be superstitious, and believe in hearsay; they should seek-evidence to verify facts.
14. They should praise the pails for their answers, give rewards to them and show satisfaction towards them.
15. Lastly an opinion was also agreed upon that use of technology, A.V. aids and in service training programmers is also vital in developing scientific attitude among secondary school students.

CONCLUSION

The researcher found that teachers support that teachers with a scientific a bend and a scientific temper can successfully develop scientific attitude in secondary school students. Thus, it can be concluding that the science teacher has an importune role to play in molding the child's scientific attitude, a teacher therefore should be Unbiased, broad minded, Non-superstitious, avoid exaggerations, and adapt planned procedures for doing work. Teacher should train the students to transfer their learning to daily life situations and should relate science to other disciplines. Certain reforms should also be made in the present curriculum like.

- a) Unnecessary details and topics not interesting to the students should be deleted.
- b) Moe provisions for teaching science subjects practically should be planned and laboratory work, filed work (marks weight ages) should be given
- c) There should be separate teacher's hand book for guide teachers in classification concepts and showing experiments.
- d) In service training should be provide to secondary school science teachers to orient them towards teaching science inductively. Workshop, in science experiments, if held, will go a long way and guiding the teachers to show experiments in class with ease, confidence and precision.

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