



Effect of Awareness Training Model on Academic Achievement of Elementary School Students in Science

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Abstract

The present study was attempted to find out the effect of Awareness Training Model on academic achievement of elementary school students in science. A “Pre-test post-test control group quasi-experimental” design was used. The samples of 70 students were selected via purposive sampling from each government senior secondary school, Bahadurgarh and Tripuri, Patiala. From both schools, Group A and Group B students were given treatment according to the lesson plans prepared by using ATM, and Traditional method for the period of 50 working days respectively. The findings of study were that ATM exhibits significant higher level of academic achievement in science as compare to traditional method. It was recommended that science teachers should endeavour to use awareness training model to encourage the students in order to enhance the academic achievement to make the students capable of solving different problems by themselves or within the groups instead of pre-teaching from the teacher.

Keywords- Effect, Awareness Training Model, Academic Achievement

Introduction:

William Schutz proposed the technique of Awareness Training for increasing an individual's ability to cope with the complexities of living. People at all ages encounter situations that cause various emotional reactions. With some prior experiences and feedback to gain personal and interpersonal and insights, an individual can then make more sense out of the emotional responses that get stirred up. Even young children wrestle with the dynamics of interpersonal relationships dealing with best friends or no friends, learning to trust and to be trustful, and dealing with successes and failures. Recent years have seen an explosion of interest in freeing the human being to develop more fully, particularly in helping people achieve fulfilling interpersonal relations. For many, this quest begins with recognition that most of us are only shadows of what we could be, and that somehow we have surrounded ourselves with invisible barriers that keep us from reaching out and

becoming more than what we are. While there has been much attention to physical development, emotional development, personal expression, and other forms of individual development, it is in the interpersonal realm that the human potential movement has found its fullest expression.

Conventional method of teaching is the approach of teaching in which the teacher is the centre of the classroom activities of teaching-learning process. The terms connected with conventional method are expository, traditional and lecture method. All these terms convey almost the same meaning. Most of the researchers have taken conventional approach as that method of teaching where the lessons are not thoroughly planned, objectives are not thrashed out in behavioral terms, and planning is not used as a part of the teaching programme.

Achievement is synonymous with accomplishment or proficiency of performance. Academic achievement of a student refers to the knowledge attained and skills developed in the curriculum, which are assessed by school authorities with the help of standardized or non-standardized achievement tests. Academic Achievement has been considered as an important factor in the educational life of the students. It encourages the students to work hard and learn more. It is the status or level of a person's learning and his ability to apply what he has learned. The handiest tool in the hands of teacher to measure concept attainment is teacher made Academic Achievement Test. Academic Achievement means an individual's level of skill or range and breath of information and what he/she has accomplished in the designated area of learning or behaviour. Academic Achievement of the students depends upon a number of factors.

Need and Significance of the Study: In order to understand the progressive nature of society and to meet the challenge of time and educational aspirations of the society, there is an urgent need for developing effective methods of teaching. Teaching, in essence means creating an environment for learning. Effective learning occurs when students are actively involved in the process of learning, rather than passive recipients of teacher delivered bodies of knowledge. Through teaching the manner of thinking, feeling and behaviour of students is changed. Teaching widens the adaptability of students to complex environments. It imparts useful information to the students and develops harmonious relationships between the teacher, the students and the subject. It guides the activities of students and trains their emotions. Studies of teacher effectiveness have failed to identify a single pattern of effective teaching. No single teaching model, howsoever attractive it may seem, is a perfect one. Democracy has defined and spelt new meaning to the different areas of teaching learning processes. The present study makes an endeavour to find out the contributions being made by this crystallizing factor in the area of knowledge acquisition and its meaningful application.

Objectives of the Study:

1. To construct the awareness training model for teaching of concepts of

science to sixth class students.

2. To study whether the group taught through awareness training model and group taught through traditional method of teaching differs in mean gain scores on academic achievement.

Hypothesis: There will be no significant difference in mean gain scores on academic achievement of group taught through awareness training model and group taught through traditional method of teaching.

Delimitations of the Study:

1. The study was delimited to sixth class students.
2. The study was delimited to only two Schools.
3. Concept of Academic Achievement was delimited to Academic Achievement in the subject of Science only.
4. Only 5 topics of Science were covered from the syllabus of class sixth.
5. The sample of the study was collected through purposive sampling.
6. The experiment was limited to only 55 days of the academic session.

Sample: The sample selection for the present investigation was done at two stages with multistage purposive sampling i.e. the school sample and the student sample.

Design: In this investigation, 'pre-test post-test control group quasi-experimental' design was followed. Three groups of subjects were matched on the basis of marks secured in environmental science of 5th class examination, general intelligence and their knowledge of science. Two groups, namely group A was treated as experimental groups and the third group B as control group of both the schools.

Tools: In the present study following tools were used to collect the data:

1. Criterion Test in Science: A criterion test based on objective type of items was developed by the investigator. This test was administered as pre-test and post-test to measure the initial and terminal behaviour of the subjects.
2. Lesson Plans: The investigator consulted the several books, including Joyce and Weil (1990) for guidance in the preparation of the lesson plans, in addition to suggestions given by other science teachers.
3. Raven's Standard Progressive Matrices Non- Verbal Test of Mental Ability

Procedure: Phase I pre-test stage: This was the initial stage in which the following test was conducted and scale was used to collect information on group before division of group into group A and group B and also introducing any treatment. The following three types of scores were taken up for the purpose of matching the groups.

1. Academic achievement (marks in environmental science of fifth class) of the students was taken from the school records. The marks secured by the students in the subject of science (examination conducted by the Punjab School Education Board) were taken up.
2. Raven's Standard Progressive Matrices Non Verbal Test of Mental Ability.

3. The criterion test in science (pre-test) was used to measure the initial behaviour of the students.

Phase II treatment stage: In the treatment stage all the two groups was treated as given below:

Group A: This experimental group was treated using the lesson plans prepared in accordance with the Awareness Training Model.

Group B: Unlike the group A, this was the control group. The treatment was given to this group as per the lesson plans prepared by using conventional method of teaching. This treatment was maintained for 55 working days for one period of thirty five minutes for each working day in each institution for each of the groups.

Phase III terminal stage: This was the post-test stage in which criterion test in science (post-test) was administered on group A and group B on the completion of the treatment. In this way the terminal behaviour of the sample was evaluated.

Statistical Techniques: The investigator used the measures of central tendency; dispersion and t-test were employed for analysis of the data.

Analysis: The terminal behaviour of the experimental group A (Awareness Training Model) and control group B (Conventional Method of Teaching) was determined on the completion of the treatment. For this purpose the criterion test in science (post-test) was administered. The values of means and SDs on the post-test score for the three groups are shown in table 1.1.

TABLE 1.1

Means and sd_s of criterion test (post-test) scores of subjects of groups a and b

Group	No. of Subjects	Mean	SD
A	68	100.03	5.94
B	68	84.63	7.57

The mean values for the two groups came out to be 100.03 and 84.63 respectively. These values show that the terminal behaviors regarding the knowledge of science of both groups were different. The means and t-values of criterion test (post-test) corresponding to combination of groups have been presented below in table 1.2.

TABLE 1.2

Comparison of Scores of Criterion Test of Experimental Group and Control Group (Post-test) by t-ratio

Group	No. of Subjects	Mean	σ_{comb}	Mean Difference	SE _D	t	p	Remarks
A Awareness Training	68	100.03	A&					

Model			B	15.40	1.4	10.69	<.0	Significan
B					4	*	1	t
Convention al Method of Teaching	68	84.63	10.2 7					

*Table values of t-value for df (134) are 2.61 and 1.98 to be significant at 0.01 and 0.05 level respectively.

The mean and SD of combination groups A and B is shown in Table 1.2. It was noticed that t-value in groups A and B 10.69, whereby all the two combinations were statistically significant (i.e. groups A and B).

Alternative Hypothesis: There exists a significant independent effect of teaching techniques on the gain scores of subjects on academic achievement in science.

For this, t-test was applied to test the significance of difference between means of gain scores of subjects on criterion test in science, taking two treatments at a time. Mean, SD's and t-value for Awareness Training Model and Conventional Method of Teaching in gain Scores on criterion test in science have been given in table 1.3.

TABLE 1.3
Means, SD_s and t-value for Awareness Training Model and Conventional
Method of Teaching in Gain Scores on Criterion Test in Science

Treatment	N	Mean	SD	σ_{comb}	Mean Difference	SE _D	t-value	p-value	Remarks
A Awareness Training Model	68	21.94	5.16	8.38	13.35	1.17	11.41	<0.01	Significant
B Convention al Method of Teaching	68	8.59	4.96						

Table value of t-value for 134 is 2.62 at 0.01 level

The calculated t-value for finding out the significance of difference in the concept learning between the experimental group A taught by Awareness Training Model and the control group B taught by Conventional Method of teaching was found to be equal to 11.41. The required table value to be significant at 0.01 is 2.62. The calculated t-value for academic achievement in science is higher than the table value at 0.01 level and hence, significant. Therefore, it can be inferred that there exists a significant difference between the experimental group A and the control group B

being taught by Awareness Training Model and Conventional Method of Teaching, respectively, for academic achievement in science.

Since the groups had been matched on their marks secured in environment science of 5th class exam, general intelligence and knowledge of science at pre-treatment stage, it is clear that different terminal behaviors were due to variation in treatment. The mean of scores being 100.03 of the experimental group is greater than that of 84.63 for the control group at post-treatment stage (from table 1.1). It proves that the Awareness Training Model is a more effective method for academic achievement in science than the Conventional Method of teaching.

Educational Implications:

- Awareness Training Model in this direction can be eminent help as it not only is compatible for development of life skills but walks hand in hand with enhancement in academic achievement too. ATM will go a long way in having comprehensive development of elementary school children. ATM works equally well to procure significant enhancement among students in the field of three life skills viz. skill of acquiring knowledge, self awareness skill and assertiveness skill.
- The teachers engaged in the classroom need to be made aware of ATM so that the classroom outcome in the shape of comprehensive development of the students can be attained. The curriculum framers of teacher educators both pre-service and in-service need to be introduce this model in their respective syllabi.
- The model can be of immense use if implemented in the present day Indian school system under the new scheme of continuous comprehensive evaluation (CCE) which aims to enhance life skills among students. This is the new age mantra for not only in Indian educational setup but throughout the globe also. The results of the present investigation are therefore of great importance for curricular planners. The teaching learning transactions can thus be transformed for various life skills.
- In the area of personal values such as leadership, concern for others, honesty, freedom and self control appeared to be the most affected values with the application of ATM. The model can be safely recommended for the acquisition of values and to be put in practice for cultivation and shift of values among students thus proving to be potent tool in the hands of educators, requisite training can be provided to teachers for this purpose. The results may therefore be of great use for teacher educators who can utilize model approach as per requirement of the content and learning outcomes especially for life skills training.
- Teaching and learning can at once be transformed into a fun-filled meaningful activity by following engrossing ATM activities. The model can prove instrumental in attaining our micro as well as macro teaching objectives. The

implications are simple and plain writing on the wall that if system has to change the methods of teaching need to undergo a sea change and ATM is a safe haven in that area. The kind of activities designated through awareness training model may also help in co-operative ventures for teachers-parents co-operation so that total integrated and co-operative approach can be utilized for affecting learning outcomes on other domains of behavior.

Conclusion: Science is a body of knowledge and process of inquiry. Science teaching in school plays important role constructing knowledge, awareness, skills, and attitudes. Understanding and use of skills are more important than the products. Basic skills are foundation for the development of all domains in science. If basic skills are nurtured among the students at early stage, they develop knowledge, understanding, personal and social awareness and attitude. Acquisition of concepts with basic skills cannot be developed through chalk and talk method. Hence, simple experiments, activities and hands on experiences should be used in the teaching learning process. Lecture method needs to be replaced by awareness training model, mode of learning in science for constructing knowledge, awareness and skills. Actual experiences take more time but understanding and interest are increased as a result of awareness.

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