



## Effectiveness of Activity based method on the basis of Achievement in motion in science of class VIII students of Searsole Raj High School, Raniganj, West Bengal

Tapas Kumar Chattopadhyay

Date of Submission: 01-10-2024

Date of Acceptance: 12-10-2024

From title given above, achievement in motion in science is the dependent variable. The study is to be conducted on class VIII students of Searsole Raj High School, Raniganj, West Bengal. The group on which the research is to be conducted is given. The effective of Activity based method is to be studied. So Activity based method is the treatment. As students belong to a same school the finding cannot be extended to other school(s) of Raniganj. This title is complete as it gives information about the variable, group and type of research.

### I. Introduction:-

It is a known fact that necessity is the mother of invention. The necessity comes in the form of a problem. The problem is the base of research. As Action Research the term of which was coined in the 1940s by Kurt Lewin, a German-American social psychologist is a method of systematic enquiry that teachers undertake as researchers of their own practice to improve the quality of their decisions and actions here the attempts will be made to teach motion from science through Activity based method because most of the students faced difficulty in solving questions related to motion. It indicates that the teacher has to do experiment to see the effect of Activity based method on achievement in motion in science. While doing this Action Research the problems of the students will be studied scientifically, systematically

and carefully in order to guide, correct and evaluate their decisions and actions.

### II. Purpose:-

- It is a mean of remedying problem diagnosed in specific situations, or improving in some way a given set of circumstances.
- It is a mean of in-service training. Thereby equipping the teacher with new skills and methods sharpening his analytical powers and heightening his self-awareness.
- It is a mean of injecting additional or innovatory approaches to teaching and learning into an ongoing system which normally inhabits innovations and change.
- It is a mean of improving the normally poor communication between the practicing, teacher and academic researcher.
- It is a mean of providing a preferable alternative to more subjective approach to problem solving in a classroom.

Action Research is done through a cycle and it is designed into four steps. The research is started by planning for an action. Then the plan is implemented as an action in classroom and the action is then observed. The reflection is done to analyse the data obtained during the action. The following diagram display a model of Action Research cycle.



Most models present Action Research as a cycle starting with a question and ending with more questions.

Finishing the first cycle the cycle begins once more with the revision incorporated in a new action which is itself observed and so on. This process allows teachers who wish to investigate events in their own classroom to take constructive steps towards solving immediate problem systematically reflecting on the outcomes. Thus the goal of Action Research are achieving local understanding and developing viable solutions to problem.

### III. Review of Related Literature:-

The effect of teaching aids in Mathematics on achievement in Mathematics of class IX students of Government Middle School No. 1, New Delhi was studied in Action Research Module 2, 2020-21 supplied by Central Institute of Educational Technology (C.I.E.T.) .

The following steps have been taken by the teacher to do the Action Research *i.e.*

- i) Statement of the problem
- ii) Objective
- iii) Formulation of hypothesis
- iv) Research Method –  
(a) Sample; (b) Tools (c) Experimental Design (d) Data collection (e) Data Analysis

The effect of teaching aid was found to be significantly helpful in improving the ability of the

student.

### IV. Objective of the Study:-

After finding the title of Action Research the teacher has to write objective of the study. The objective of the study gives direction to the whole study. On the basis of the above title one objective may be formulated. More objective will help the researcher to find out solution of various aspects of the problem. For the above mentioned title of Action Research one objective has been formulated which can be written as given in the following.

To compare mean score of achievement in motion in science of Class VIII students before and after having taught Activity based method.

### V. Hypothesis of the Study:-

Hypothesis is a tentative solution of a problem. The researcher has to formulate hypothesis for the above stated objective of Action Research and there must be basis of formulating hypothesis. The basis of formulating hypothesis is Review of Related Literature and Theory. Here researcher follow the various science book published by the N. C. E. R. T. at secondary level and also follow the various science book published by the W. B. B. S. E. and also follow the various teaching modules publisher by N. C. E. R. T. X. for teaching science at upper primary level. Now on the basis of above Review of Related Literature the researcher has to



formulate hypothesis in Null form. For the above mentioned objective, the following Null hypothesis can be formulated. There is no significant difference between mean scores of achievement in motion in science of students before and after having taught through Activity based method.

#### **Delimitations:-**

The following are the delimitations of Action Research.

1. The reason will be conducted by the teacher, Searsole Raj High School, Raniganj.
2. It will be conducted on class VIII students of Searsole Raj High School, Raniganj.
3. The teacher wants to study the effect of Activity based method in achievement in motion in science.

#### **VI. Methodology:-**

Here the researcher will follow the following method to conduct Action Research.

- (a) Sample (b) Tools (c) Experimental Design (d) Procedure of Data Collection  
(e) Data Analysis.

#### **Sample:**

Purposive Sampling Technique is used to select the sample for Action Research. It is clear from the above title that Action Research is to be conducted on those students of class VIII who faced difficulty in solving problems relating to motion. Therefore, for the above mentioned study Purposive Sampling Technique is to be used to select sample.

#### **Tools:**

In the above Action Research achievement in motion in Science Test will be the tools for the study. This test will be prepared by the teacher only. The teacher will decide number of questions to be included in the test, type of questions and duration of test maximum marks *etc.* which cover the full content of the topic. Various types of questions such as Objective type, Short answer type, MCQ may be prepared for Action Research. No. of questions depend on the subject matter and must represent to the whole topic chosen for Action Research. Most tools used in Action Research is developed by the teacher who conduct the Action Research. So tools used in Action Research are unstandardized.

#### **Experimental Design:-**

Action Research is experimental in nature. In this topic, one title and one objective is given for Action Research. For this Action Research the suitable

Experimental Design is Pre-test

– Post-test Single Group Design. The layout of the design is given below.

$$Q_1 \times Q_2$$

$Q_1$  = Pre-Test of Variable of the Action Research  
Treatment

$Q_2$  = Post Test of Variable of the Action Research

It is clear from the above lay out that to start with achievement in motion in Science Test is to be administrated in motion in Science Test is to be administrated to all students of Searsole Raj High School where Action Research is to be conducted. This is denoted by  $Q_1$  = Pre-achievement in motion in science.

Now the teacher teaches motion topic to the students through Activity based method for one period of 45 Mnts. Per day for 30 days. Here X = Treatment *i.e.* Activity based method.

After 30 days, the same achievement in motion in Science Test is to be administrated before started teaching with the help of Activity based method =  $Q_2$  *i.e.* Post-test Achievement in motion in science.

During the process of treatment many variables may play there role and it may be visible in the Post-Achievement in motion in Science Test. One has to be very careful in understanding the change in achievement in motion in science. Thus the teacher will get score of achievement in motion in science before as well as after treatment.

#### **Procedure of Data collection:-**

Here it is evident that Action Research is to be conducted on the students of class VIII of Searsole Raj High School, Raniganj by science teacher who experienced that many students fail to solve problems of motion in science. The teacher first administers the Achievement in motion in science Test developed by the teacher.

After this the teacher teaches motion with the help of Activity based method at the rate of 45 mnts. Per day for 20 days.

Teacher only has to decide the activity to be done by the student in order to understand motion. At the end of the treatment the same achievement in motion in science Test will be administrated to collect data. This is known as Post achievement in motion in science Test,

The duration of pre-test and post-test is decided by the teachers and it should be same for both pre-test as well as post-test. Thus the teacher will get score of achievement in motion in science before as well as after treatment.



#### **Data Analysis:-**

Data collected through the use of pre-test – post-test single group design are to be analysed with the help of correlated t-test or paired samples t-test. The teacher can also use Statistical Package for Social Science (SPSS) to analyse the data.

#### **Procedural steps for conducting Action Research:- 1<sup>st</sup> Step:**

Identify an issue, interest or problem.  
Effectiveness of Activity based method on the basis of achievement in motion in science of class VIII students of Searsole Raj High School, Raniganj, West Bengal. This is the title of Action Research.

#### **2<sup>nd</sup> Step:**

In this step teacher will formulate the objective of the research *i.e.* to compare mean score of achievement in motion in science of class VIII students before and after having taught through Activity based method.

#### **3<sup>rd</sup> Step:**

Now the teacher will formulate hypothesis in null form *i.e.* There is no significant difference between mean scores of achievement before and after having taught through Activity based method.

#### **4<sup>th</sup> Step: Methodology**

(a) **Sample:-** Action Research is to be conducted on those students of class VIII, Searsole Raj High School, Raniganj, West Bengal who has difficulty in understanding the concept of motion and its application. The group is selected by using Purposive Sampling Technique as the teacher is facing some problems while teaching motion in science to class VIII students. The topic has already been discussed.

(b) **Tools:-** In the above Action Research achievement in motion in science test will be the tools for the study. The test question, time, question type will be prepared by the teacher. The topic has already been discussed.

(c) **Experimental Design:-** Action Research is experimental in nature. Here the suitable Experimental Design is Pre-test – Post-test Single Group Design. The topic has already been discussed.

(d) **Data Collection:-** With the help of Activity based method the teacher will be able to collect data by applying Pre-test – Post-test Single Group Design method. The topic has already been discussed.

(e) **Data Analysis:-** Data are analysed with the help of correlated t-test. The topic has already been discussed.

#### **Bibliography:-**

- [1]. Allwright, Dick., Bailey, Kathleen M. 1991, Focus On The Language Classroom An Introduction To Classroom Research For Language Teachers. Cambridge: Cambridge University Press
- [2]. Cohen, Louis 1993 Research Methods in Education. London: Routledge
- [3]. Muijs D. 2004. Doing Quantitative Research in Education with SPSS. London: Sage Publications

#### **References:-**

- [5]. Text book published by National Council of Educational Research and Training (N.C.E.R.T.) in Science at Upper Primary Level. 2020. New Delhi
- [6]. Text book published by West Bengal Board of Secondary Education (W.B.B.S.E.) in Science at Upper Primary Level. 2020. Kolkata
- [7]. Various Modules published by N.C.E.R.T.X. for teaching Science at Upper Primary Level. 2020-21. New Delhi
- [8]. Various Modules published by Central Institute of Educational Technology, N.C.E.R.T.2020-21. New Delhi
- [9]. Various Videos supplied by Central Institute of Educational Technology, N.C.E.R.T.2020-21. New Delhi
- [10]. Videos and Books Published by SWAYAM

#### **Internet Sources:-**

- a. [www.coe.arizona.edu](http://www.coe.arizona.edu)
- b. [www.repositorio.vahurtado.cl](http://www.repositorio.vahurtado.cl)
- c. [www.utm.edu](http://www.utm.edu)
- d. [www.fanshawe online.ca](http://www.fanshawe.online.ca)