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## **MODULE 2**

### **STEPS OF ACTION RESEARCH**

#### **INTRODUCTION**

Action Research is primarily concerned about finding solutions of problems related to different aspects of classroom teaching. In order to find solutions of problems related to classroom teaching or to improve own teaching, teacher himself or herself identifies the problem and finds the solution as per own capability and competency. Action Research is done by the teacher who is part of the problem whose solution is being researched upon. The person, who is not the part of the problem, cannot do Action Research. Action Research is primarily conducted by the teacher to find solution of classroom related problems so that maximum students get benefited.

#### **OBJECTIVES**

After reading this module, the reader will be able to

1. Write the meaning and definition of Action Research.
2. Give examples of Action Research.
3. List characteristics of Action Research.
4. Write Title of Action Research.
5. List steps of Action Research in proper sequence.

#### **MEANING OF ACTION RESEARCH**

Normally, it is observed that the same teacher teaches the whole class using same method of teaching but different students understand to the different extent. There might be different reasons. The Action Research is done in the context of the classroom problems. In Education, Action Research is primarily done to improve the activities related to teaching – learning process. The problem may relate to any aspect of classroom instruction. During teaching, you may face problems which effect teaching-learning process. The problems primarily may relate to time, situation, place, method of teaching etc. whose solution is to be found out through Action Research. For example, problems related to classroom discipline, English pronunciation or Hindi pronunciation, profit and loss problems in Mathematics, difficulty in understanding concepts in different subjects, etc. In Action Research the emphasis is on getting solution of the problem. For Action Research, the teacher or researcher may have problem related to any aspect of classroom and activities are to be carried out systematically to find solution of problem related to any aspect of classroom.

#### **DEFINITION OF ACTION RESEARCH**

Action Research refers to a process wherein activities are carried out systematically to find solution of problem related to any aspect of teaching.

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## **EXAMPLE OF ACTION RESEARCH**

The following are two examples of Action Research:

1. While teaching Mathematics to middle class students, teacher observed that some of the students could not solve the given problems but some could solve the given problems. Those who could solve problems were asked to help those students who could not solve the given problem. This continued till students were able to solve problems themselves. Thus cooperative learning was found to be beneficial by the teacher.
2. Computer teacher while teaching programming to students found that some of the students had difficulty in programming. Teacher asked one of the students who could write correct programme to explain it to the whole class. This was followed with discussion. The teacher observed that students could write correct programme themselves. In this way cooperative learning was found to be useful by the computer teacher.

## **CHARACTERISTICS OF ACTION RESEARCH**

1. Action Research is a process.
2. In Action Research, different activities are carried out.
3. Action Research is systematic.
4. Action Research helps in finding solution of problems encountered by the teacher.
5. Action Research is cooperative in nature.
6. There is a possibility in bringing improvement in the situation.
7. Action Research aims at finding solution to immediate problems.
8. Methodology of Action Research is flexible.
9. Action Research is self-evaluated.
10. Generalization is not the aim of the Action Research.
11. Action Research is cyclic in nature but not like a straight line.

## **TITLE OF ACTION RESEARCH**

You know that the title of the book is broad. Research paper also has a title which is longer than the title of book. Similarly, the title of research is longer than the title of book. Sometime the length of title of research paper and Research might be quite close to each other. There are some words which are used only in the title of research but not title of research paper. The words used in writing title of research are “A Study of.....”, “Effectiveness of.....”, “A study of Effect of.....”etc. From the appropriate title of research, the reader must get information about Variable, population and type of research or method of research. If such information is not given in the research title, then the research title is incorrect. Thus, title of Action Research must give information about the variable, group on which Action Research is done and type of research or method of research. Let us analyze the following two titles of Action Research and judge their appropriateness.

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1. A study of effect of English Conversation on English Speaking of Class VIII students of Government Middle School, Saket, New Delhi.
  2. A study of effect of ETV Programme in Science on Achievement in Science of Class VI students of Demonstration School, Regional Institute of Education, Ajmer

From **title 1**, as give above, it is clear that effect of English Conversation on English Speaking is to be studied. So English Speaking is the dependent variable and English Conversation is the independent variable. The group on which this research is to be conducted is Class VIII students of Government Middle School, Saket, New Delhi. The teacher uses English Conversation in the classroom so as to see whether student's English Speaking skill develops. It indicates about the type of research or method of research. This title gives information about the variable, group and type of research. Thus title 1, given above, of Action Research is appropriate.

From **title 2**, as given above, one can say that ETV programme in Science is the independent variable and Achievement in Science is the dependent variable. The group on which this research is to be conducted is Class VI students of Demonstration School, Regional Institute of Education, Ajmer. Since effect of ETV Programme is to be studied, so it indicates the type of research or method of research. Title 2 gives information about the variable, group and type of research. Thus title 2 of Action Research is appropriate.

## **STEPS OF ACTION RESEARCH**

Action research is to be carried out systematically, so there are steps to be followed. The steps are as given below:

1. Identification of Problem
2. Formulation of Hypothesis
3. Method of Research
4. Data collection
5. Data Analysis

The details of each step are given below:

### **1. Identification of Problem**

In this step, the researcher has to first select or decide the variable related to which the Action Research is to be conducted. After selecting the variable, the researcher has to write the title of Action Research. Lastly, the objective(s) of Action Research is/are to be written. Now the first step of Action Research is completed.

There are different Sources of Problem but in for conducting Action Research the problem or variable must be related to the school context or teaching which the teacher faces day-to-day in the classroom. The teacher plays an important role in selecting the problem or variable.

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Problem may relate to different aspect, such as,

- Students coming late to school
- Students stealing small things
- Students indiscipline
- Students not interested in some subjects
- Students run away from school
- Students not attentive in the class
- Student's academic achievement
- Students failure in Mathematics
- Students make punctuation mistakes while writing, etc.

**(i) Statement of Problem or Title writing**

After selecting the variable, statement of the problem is to be written. The title of Action research is too narrow. From the title of Action Research, the reader must get information related to variable, group and type of research or method of research. Title, which does not give all the three information, is not appropriate. In the following four appropriate title of Action Research are given. Whenever teacher wants to conduct Action Research, he/she must write title similar to the following:

1. A study of Effect of Teaching Aids in Mathematics on Achievement in Mathematics of Class IX students of Government Middle School No.1, New Delhi
2. A study of Effect of Yoga on Stress of class IX students of Central school No.1, New Delhi
3. A study of Effect of Classroom Assignment on Achievement in Hindi of class VIII students of Demonstration School of Regional Institute of Education, Bhopal
4. A study of Effect of Dictation in English on Achievement in English of class V students of Central School, NCERT, New Delhi
5. A study of Effect of ETV Programme on Achievement in Mathematics of students

From **title 1**, as given above, one can note that Achievement in Mathematics is the dependent variable. This study is to be conducted on Class IX students of Government Middle Schools No.1, New Delhi. The group on which the research is to be conducted is given. The effect of Teaching Aids is to be studied. So Teaching Aids is the treatment. In this students belong to a particular school, so the finding cannot be extended to other schools of New Delhi. This title is complete as it gives information about the variable, group and type of research.

From **title 2**, as given above, Stress is the dependent variable and Yoga is the independent variable. This study is to be conducted on class IX students of Central school No.1, New Delhi. It is an Action Research because its finding cannot be extended to other schools of New Delhi. This title is complete as it gives information about the variable, group and type of research.

From **title 3**, one can see that Achievement in Hindi is the dependent variable. Classroom Assignment is the independent variable. The finding will be restricted to class VIII students

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of Demonstration School of Regional Institute of Education, Bhopal only. So it is the title of an Action Research. This title is complete as it gives information about the variable, group and type of research.

From **title 4**, one can see that Achievement in English is the dependent variable. Dictation in English is the independent variable. The finding will be restricted to class V students of Central School, NCERT, New Delhi only. So it is the title of an Action Research. This title is complete as it gives information about the variable, group and type of research.

Lastly from **title 5**, one can see that Achievement in Mathematics is dependent variable and ETV Programme is the independent variable. This study is to be conducted on students but students belong to which school, city, country etc. is not given in the title. So this title only gives information related to variable and partial information about the group. The type of research is experimental but in the absence of complete information about the group, it is difficult to decide the group on which Action Research is to be conducted. This title is not appropriate as the complete information about the group is not given. Thus this is not appropriate title of Action Research.

## **(ii) Objectives Writing**

Under Identification of Problem, one must select the variable and write the title of the Action Research. This must be followed by Objective(s) writing. Objectives must be worded pin-pointedly so that the researcher or teacher gets direction. After reading Objectives, the teacher or researcher will decide the sampling technique to be used for selecting the sample. The objectives will include the variables. Keeping in mind the nature of variable, the teacher can decide the tool to be used for collecting data. The quality of Action Research depends on the wording of Objectives. Majority of times, researchers are not able to write pin-pointed Objectives. In other words, sometime the Objectives are vaguely worded which does not give clear direction to researcher. To understand the wording of objectives, the objectives have been written for titles 1 to 4 given before.

### **Objective**

- Related to **title 1**, the following objective may be written. Researcher can write more than one objective.
    1. To compare mean scores of Achievement in Mathematics of students before and after Teaching with the help of Teaching Aids.
  - Related to **title 2**, the following objective has been written.
    2. To compare mean scores of Stress of students before and after Yoga Practice.
  - Related to **title 3**, the following objective has been written.
    3. To compare mean scores of Achievement in Hindi of students before and after doing Classroom Assignments.
  - Related to **title 4**, the following objective has been written.
    4. To compare mean scores of Achievement in English of students before and after giving Dictation in English.
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## II. FORMULATION OF HYPOTHESIS

In chapter 1, you have studied that Hypothesis is the tentative solution of the problem. Another definition is, Hypothesis is the intelligent guess about the solution of problem. Since Hypothesis is the intelligent guess or tentative solution, so there must be a base. Without base one cannot formulate Hypothesis. The bases of Formulation Hypothesis are Review of Related Literature and Theory. Keeping these bases in mind, one can formulate Hypothesis either in Null Hypothesis Form or Directional / Alternative Form. On the basis of Review of Related Literature, if the researcher finds that no research has been completed related to the variable under study, then the researcher has to formulate Hypothesis in the Null form. On the other hand, if researcher finds that researches have been conducted but these are a few which may not be a strong base for giving direction, so under such condition the researcher has to formulate Hypothesis in the Null form only. Further, if large numbers of researches have been conducted related to a variable, on analyzing the findings, one comes to know that 80% of researches give one direction, 5% of them give another direction and 15% give different direction, then the researcher must formulate Hypothesis in the Directional Form or Alternative Form. On the other hand, if researcher is unable to get clear direction on the basis of Review of Related Literature, then the researcher has to formulate Hypothesis in the Null Form. Normally, on the basis of Review of Related Literature, Hypothesis is formulated in the Null form. It is possible that the researcher is conducting a research on a variable for which there is a Theory. If so, then the researcher must formulate Hypothesis in the directional or Alternative Form. As for every Hypothesis, there has to be a base so it must be written in the present tense. Further, in formulating Hypothesis, significant word has to be used because whatever change the researcher observes after the treatment is not due to chance but it is due to the Treatment or deliberate attempt made by the researcher.

For the four Objectives given before, the following Hypothesis may be formulated in the Null Form.

- For **first Objective**, the following Hypothesis in the Null Form may be formulated as
    1. There is no significant difference in mean scores of Achievement in Mathematics of students before and after Teaching with the help of Teaching Aids.
  - For **second Objective**, the following Hypothesis in the Null Form may be formulated as
    2. There is no significant difference in mean scores of Stress of students before and after Yoga Practice.
  - For **third Objective**, the following Hypothesis in the Null Form may be formulated as
    3. There is no significant difference in mean scores of Achievement in Hindi of students before and after doing Classroom Assignment.
  - For **fourth Objective**, the following Hypothesis in the Null Form may be formulated as
    4. There is no significant difference in mean scores of Achievement in English of students before and after Dictation in English.
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### III. METHODOLOGY

Under Methodology, the researcher or teacher should give information about Sample, Tool, Experimental Design, Procedure of data Collection, and Data Analysis. One should write the Methodology explicitly under different headings as given before so that any researcher can follow the same steps if he wants to do similar Action Research as he also might be facing the similar problem in his class. The details which the researcher should give under different heads are given separately in the following captions.

#### Sample

Sample is the small representative portion of Population. There are different Sampling Techniques which are classified as Non-Probability Sampling and Probability Sampling. Non-Probability Sampling techniques are Purposive Sampling, Incidental Sampling, Judgement Sampling, Quota Sampling, Convenient Sampling, and Snowball Sampling. On the other hand, Probability Sampling Techniques are Random Sampling, Stratified Random Sampling, Stratified proportionate Random Sampling, Cluster Sampling, Multistage Sampling and Systematic Sampling. Of the two types of Sampling Techniques, in Action Research only Purposive Sampling is the most appropriate because the teacher or researcher conducts the research on the same students of the class where he is facing the problem. As the teacher is teaching the students the subject, s/he knows students to a great extent. The knowledge about each student will help the teacher in conducting Action Research.

Let take each topic and try to understand the group in the context of their environment and the sampling technique which can be used for selecting sample from the group. By now you have understood that the group size for the Action Research is too small and further sampling may not be required. So the researcher has to take all students of the group for conducting Action Research.

The **first title** is “A study of Effect of Teaching Aids in Mathematics on Achievement in Mathematics of Class IX students of Government Middle School No.1, New Delhi”

From the **first title**, it is evident that the Action Research is to be conducted on Class IX students of Government Middle School No.1, New Delhi. All students belonging to Class IX and studying in Government Middle Schools No.1 situated in New Delhi are taken up for Action Research. The group is selected by using Purposive Sampling Technique because the teacher is facing some problem while teaching Mathematics to class IX students.

The **second title** is “A study of Effect of Yoga on Stress of class IX students of Central school No.1, New Delhi”

From the **second title**, it is evident that this Action Research is to be conducted on Class IX students of Central School No.1, New Delhi. All students belonging to Class IX and studying in Central School No.1 situated in New Delhi are taken up for Action Research. The group is selected by using Purposive Sampling Technique because the teacher observes that the students are stressed most of the time. The teacher wants to study the effect of Yoga on Stress of Class IX students.

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The **third title** is “A study of Effect of Classroom Assignment on Achievement in Hindi of class VIII students of Demonstration School of Regional Institute of Education, Bhopal”

From the **third title**, it is evident that this Action Research is to be conducted on Class VIII students of Demonstration School of Regional Institute of Education, Bhopal. All students of Class VIII studying in Demonstration School of Regional Institute of Education, Bhopal are taken up for Action Research. The group is selected intentionally by using Purposive Sampling Technique because the teacher teaching Hindi found some students are not performing well in the tests.

The **fourth title** is “A study of Effect of Dictation in English on Achievement in English of class V students of Central School, NCERT New Delhi”

From **fourth title**, it is evident that the teacher wants to do Action Research on Class V students of Central School, NCERT New Delhi. This Action Research is to be done by the teacher of Central School who is teaching English to Class V students and felt that the performance of students is not satisfactory as they are not able to write correct spelling of some words. Due to this, teacher might have thought of trying his/her idea of helping students for improving the spelling. For trying out his/her idea, s/he will take class V students of her/his school. Thus, the group has been selected using Purposive Sampling Technique.

Thus, it is clear that for conducting Action Research, the most appropriate Sampling Technique to be used is Purposive Sampling. It is important to know the characteristics of all members of the group taken up for Action Research.

### **Tool**

By now you must have understood that there must be at least one variable in the Action Research related to which the data are to be collected. For collecting data one must use appropriate tool. The quality of data depends on the quality of tool used. Different characteristics of tool are Validity, Reliability, Objectivity, Sensitivity, and Usability. Tool can be Standardized and Unstandardized. Each teacher administers test in his/her class. Also annual examination is conducted in each institution. All papers used in the tests and annual examinations are unstandardized. In case of unstandardized tools Validity and Reliability are unknown. Due to this, if a student scores 100% marks in any subject, one cannot say that this student knows everything. There is a procedure of standardizing a tool which is beyond the scope of this material.

For Action Research, the teacher or researcher develops the tool as per the variable. From the **first title**, it is evident that Achievement in Mathematics is the variable and for assessing it, Achievement in Mathematics Test has to be developed. Keeping in mind the Content of Mathematics, the teacher can write multiple choice question and short answer type question. In Mathematics, there are word problems and students make mistakes in solving word problems. So there should be different types of questions in the test. The teacher has to decide the chapters which he wants to take up for Action Research and the questions must be from the chapters taken up for Action Research. The total number of items, time of answering, maximum score etc. are to be decided by the teacher conducting the Action Research.

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From the **second title** it is evident that Stress is the variable related to which the data are to be collected. The school teacher may not be competent to develop tool for assessing Stress of students, so he has to select tool which is appropriate for assessing Stress of Class IX students. Tool for assessing Stress can be obtained from Guidance and Counselling Cell/ Unit or it can be taken from any Department of Psychology or Education of any College or University. In case, the tool is not available for assessing Stress than the teacher cannot conduct Action research.

From the **third title**, it is evident that Achievement in Hindi is the variable related to which the data are to be collected. This Action Research is to be conducted on Class VIII students. There must be some portion of Hindi Syllabus related to which the teacher wants to conduct Action Research. The content is to be decided by the teacher. Suppose the teacher feels that the students do not understand some concepts of Grammar. So the teacher has to develop Achievement in Hindi Test where the questions must be related to different concepts of Grammar which students fail to understand and make mistakes. The total number of items, time of answering, maximum score etc. are to be decided by the teacher conducting the Action Research. Thus the teacher has to develop Achievement in Hindi Test and it may not be standardized as the teacher may not know the procedure of its development and standardization. Mostly in Action Research, unstandardized tools are used.

From **title four**, it is clear that Achievement in English is the variable related to which the data are to be collected. For collecting data, the teacher or researcher must develop Achievement in English Test. This test has to be developed by the teacher who wants to conduct Action Research. The teacher selects the content, decides type and number of items, duration of test, maximum marks, etc. The Achievement in English Test is to be developed by the concerned teacher only.

Thus you must have understood that in Action Research most of the time the teacher has to develop tool which he/she has to use in conducting Action research. Tools used in Action Research are mostly unstandardized.

### **Experimental Design**

Action Research is experimental in nature. For conducting experimental research, Experimental Design is a must. Experimental Designs are classified into three categories, such as, Pre-Experimental Design, Quasi- Experimental Design, and True Experimental Design. In Action Research Pre-Experimental Design is used because the teacher conducts the research by taking her/his class students because s/he wants to find the solution of problem encountered by her/him in the class. The findings of Action Research cannot be generalized because the group taken for Action Research may not represent the population. In case a researcher is working for a degree, s/he should not conduct Action Research. Further, for Social Science Researches, the appropriate designs are Quasi- Experimental Designs. True Experimental Designs are not applicable in Social Sciences. These are applicable in disciplines like, Sciences, Engineering, Pharmacy, etc. because randomization is easy to use.

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Pre- Experimental Designs are most useful in Action Research. Among different Pre-Experimental Designs, Pretest-Posttest Single Group Design is mostly used in conducting Action Research. For conducting Action Research, the teacher or researcher takes students of the class on whom he wants to do Action Research. From the **first title** of Action Research, it is evident that this Action Research is to be conducted on Class IX students of Government Middle School No.1, New Delhi. In case there are many sections of Class IX than the teacher has to take the students from that section of class IX which s/he teaches and on whom the Action Research is to be conducted. On all students of the selected section, Achievement in Mathematics Test developed by the teacher or researcher is to be administered. This constitutes Pre- Achievement in Mathematics. Teacher analysis the responses of the students on the test and teaches the topics with the help of Teaching Aids. The topics to be taught and the duration of teaching are to be decided by the teacher only. The treatment duration should not be too short. It should be long enough so that the effect of the treatment is visible. At the end of the Treatment, the same Achievement in Mathematics Test is to be administered. This constitutes Post-Achievement in Mathematics. During the process of treatment, many variables may play their role and it may be visible in the Post-Achievement in Mathematics Test. One has to be very careful in understanding the change in Achievement in Mathematics. Thus the teacher or researcher will get score of Achievement in Mathematics before as well as after the treatment.

From the **second title**, it is evident that this Action Research is to be conducted on Class IX students of Central School No.1, New Delhi. In this research Stress is the variable. The teacher after selecting the Stress Scale, s/he has to administer it on all Class IX students. This constitutes the Pre- Stress. This group is given training in Physical Exercises and asked all the students to do the Physical Exercises for 30 days at the rate of 30 minutes per day. At the end of 30 days, the same Stress Scale is administered on all students of the group. This constitutes Post-Stress. Thus the teacher will have Stress scores before as well as after the treatment.

From the **third title**, it is evident that this Action Research is to be conducted on Class VIII students of Demonstration School of Regional Institute of Education, Bhopal. Achievement in Hindi is the variable. The teacher has already decided the content of Hindi which he/she wants to take for the Action Research and prepared Achievement in Hindi Test. This test is to be administered on all students of class VIII-B because she wants to do Action Research on students of class VIII-B. This constitutes Pre- Achievement in Hindi. Now teacher gives classroom work as per her planning and students do it as per the instruction of the teacher. This continues for, say, 20 days at the rate of one period per day. At the end of 20 days, the teacher administers the same Achievement in Hindi Test which was administered before the treatment and it constitutes Post- Achievement in Hindi. Thus, the teacher or researcher will have scores of Achievement in Hindi before as well as after the treatment.

From **fourth title**, it is evident that the teacher wants to do Action Research on Class V students of Central School, NCERT New Delhi. In this Action Research, Achievement in English is the variable. The teacher has already developed Achievement in English Test. This

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test has to be administered on those students of Class V on whom the teacher wants to do Action Research. This constitutes Pre- Achievement in English. Now the students are given Dictation in English for 15 days. At the end of the treatment of 15 days, the same Achievement in English Test is to be administered again which was administered before the treatment and it will constitute Post-Achievement in English. Thus the teacher will have score of Achievement in English before as well as after the treatment.

#### IV. PROCEDURE OF DATA COLLECTION

Data collection is a must in each and every research. Research is incomplete in the absence of data. The quality of research to a great extent depends on Procedure of Data Collection. The Procedure of Data Collection is systematic in nature. The researcher must write Procedure of Data Collection in minute details so that any person interested in conducting the same study can do so. By now you must have understood that the findings of Action Research cannot be generalized because the group, on which Action Research is done, does not represent the population to which the group belongs. For such as state of affairs, the following might be some of the reasons:

1. Action Research is done by the teacher who is interested in finding the solution of problem encountered by him. Each teacher may encounter different problems and thus each teacher has to do Action Research so as to get the solution of the problem.
2. Mostly researchers use Pretest-Posttest Single Group Design for conducting Action Research. In Action Research one cannot say with confidence that same will be the finding if the same Action Research is done by another teacher. Thus the findings of Action Research can not be generalized.
3. Mostly tool used in Action research is developed by the teacher who conducts the Action Research. So the tools used in Action Research are unstandardized.
4. The group taken for Action Research does not represent the population. Thus findings of different Action Research on the same aspect cannot be generalized.

In spite of above mentioned limitations of Action Research, it is still useful for teachers because the teacher can find the solution of problem encountered by them in the classroom or school. On the basis of the findings of Action Research the teacher can bring change in different aspects of teaching. Thus Action Research is very useful for teachers, principals and administrators.

Let us understand the Procedure of Data Collection in the context of the before mentioned four problems of Action Research.

From the **first title** of Action Research, it is evident that this Action Research is to be conducted on Class IX students of Government Middle School No.1, New Delhi. Teacher teaches Mathematics to class IX students, s/he might have noticed that the students are not able to solve Problems of Profit and Loss although teacher has taught them. Teacher might have solved many numerical problems of Profit and Loss but students were unable to solve Problems of Profit and Loss when given as home work. Teacher, while checking home-work, might have found the types of mistakes which most of students might have done. Keeping in

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mind the types of mistakes, the teachers should develop the Achievement in Mathematics Test by keeping in mind the content of Profit and Loss chapter. In the test, suppose the teacher decide to write 20 questions covering all aspects of Profit and Loss where students have problems. This test is administered on those students of Class IX who are not able to solve problems related to Profit and Loss. The responses of students on this Achievement in Mathematics Test are analysed and further try to pinpoint the problems of students. Now the teacher teaches of Profit and Loss with the help of Teaching Aids. Suppose s/he teaches this topic for 15 days at the rate of one period of 30 minutes per day. At the end of 15 days, the same Achievement in Mathematics Testis administered. This constitutes Post-Achievement in Mathematics Test. During the process of treatment, many variables may play their role and it may be visible in the Post-Achievement in Mathematics Test. One has to be very careful in understanding the change in Achievement in Mathematics. Thus the teacher or researcher will get score of Achievement in Mathematics before as well as after the treatment.

From the **second title**, it is evident that this Action Research is to be conducted on Class IX students of Central School No.1, New Delhi. In this research Stress is the variable. The teacher after selecting the Stress Scale, s/he has to administer it on all Class IX students. This constitutes the Pre- Stress. This group is given training in one Physical Exercises and asked all the students to do this Physical Exercises for 30 minutes. The teacher may ask students to do the same Physical Exercise for 30 minutes on the second day. On the third day, the teachers may demonstrate another Physical Exercise which may be appropriate for controlling Stress. The students after observing this exercise will practice it for 30 minutes. For another two days the students may do both the exercises as per the instructions by the teacher. Now the teacher may demonstrate another Physical Exercise and ask students to practice it for 30 minutes. Like this it continues for 30 days. At the end of 30 days, the same Stress Scale is administered on all students of the group. This constitutes Post-Stress. Thus the teacher will have Stress scores before as well as after the Treatment.

From the **third title**, it is evident that this Action Research is to be conducted on Class VIII students of Demonstration School of Regional Institute of Education, Bhopal. Achievement in Hindi is the variable. The teacher has already decided the content of Hindi which he/she wants to take for the Action Research and prepared Achievement in Hindi Test. This test is to be administered on all students of class VIII-B because she wants to do Action Research on students of class VIII-B. This constitutes Pre- Achievement in Hindi. Now teacher gives classroom work as per her planning and students do it as per the instruction of the teacher. This continues for, say, 20 days at the rate of one period per day. Since it is a class work so, it has to be done in the School only. At the end of 20 days, the teacher administers the same Achievement in Hindi Test which was administered before the treatment and it constitutes Post- Achievement in Hindi. Thus the teacher or researcher will have scores of Achievement in Hindi before as well as after the Treatment.

From **fourth title**, it is evident that the teacher wants to do Action Research on Class V students of Central School, NCERT New Delhi. In this Action Research, Achievement in English is the variable. The teacher has already developed Achievement in English Test. This test has to be administered on those students of Class V on whom the teacher wants to do

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Action Research. This constitutes Pre- Achievement in English. Now the students are given Dictation in English for say 15 minutes. The dictation taken by the students has to be checked by the teachers and the mistake done by students has to be pointed out. After checking the dictation, the teacher can find out the common mistakes done by students as well as individual mistakes. Keeping the mistakes in mind, the teacher plans another dictation and gives it to students for 15 minutes. Now the teacher checks dictation of each student and try to find out the mistakes done by each students as well as the common mistakes. This continues for 15 days and at the end of the 15 days treatment, the same Achievement in English Test is administered again which was administered before the treatment and it will constitute Post-Achievement in English. Thus the teacher will have score of Achievement in English before as well as after the Treatment.

#### **V. DATA ANALYSIS:**

In each of the above cited four Action Research problems, the data were collected before as well as after the Treatment. The data can be analysed with the help of Correlated t-test or Paired Samples t-test. It can be done with the help of SPSS package or Excel.

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