UNIT 4 TYPES OF RESEARCH AND METHODS OF RESEARCH

Structure

4.0 INTRODUCTION

Now you have a good idea about what research is, what are the bases for the conduction and experiment in tests, and how research process works? Now, it is time to turn to another related issue; how do psychologists actually perform the task of adding to our knowledge of human behaviour? There are a number of ways to investigate into the answer of research questions. The kind of methods researchers use depends on kind of questions they want to answer. This unit begins with discussion of two types of researches i.e. non-experimental researches and experimental researches. Non-experimental researches will cover various kinds of researches along with examples, namely; historical research, correlation research, qualitative research and *expost facto* researches. Further, you will learn about experimental researches which are conducted to establish the cause

and effect relationship. This is followed by the details of main types of experimental researches i.e. true experimental researches and quasi experimental researches. Then, you will learn how true experimental researches differ from quasi experimental researches.

We now need to enquire into various methods of psychological researches for obtaining data that may be used to arrive at an evidence report. Various kind of non-experimental methods which are used to answer the questions, such as naturalistic observation, survey method, case study, content analysis, field studies are described. Finally, besides non-experimental methods, this unit will explain you the experimental methods i.e. laboratory experiment and field experiment.

4.1 OBJECTIVES

After reading this unit, you will be able to:

- Explain the types of researches;
- Differentiate between experimental and non-experimental researches;
- Explain true experimental researches and quasi experimental researches;
- Describe advantages and disadvantages of each method which are used in psychological research;
- Differentiate laboratory experiments from field experiments;
- Explain the differences between basic and applied researches; and
- Identify experimental and non experimental researches and methods.

4.2 TYPES OF RESEARCH

The types of research differ mostly on three dimensions:

1) the nature of the question asked;

2) the method used to answer it; and

3) the degree of precision the method brings to answering the questions.

One way in which these methods do not necessarily differ, however is in the content or the focus of the research. In other words, if you are interested in the effects of television viewing in children, your research can be non-experimental, wherein you survey watching habits. If experimental, you may expose children models to the TV and one group non viewing of TV and look at the effect of the exposure on their behaviour.

The most general way of classifying research is to divide it into fundamental or pure or basic research and applied research. A fundamental research is the formal and systematic process where the researcher aims to develop a theory or a model by identifying all the important variables in a situation and by discovering broad generalisations and principles about those variables. It utilizes a careful sample so that its conclusion can be generalised beyond the immediate situation. For example biological psychologists explore the links between brain and mind; developmental psychology studies our changing abilities from womb to tomb and the personality psychologists investigate our inner traits.

Applied research, as its name implies, applies the theory or model developed through the fundamental research to the actual solution of the problems. Applied research tackles practical problems, as for example, industrial/ organisational psychologists study and

advise on behaviour in the workplace. They use psychology concepts and methods to help organisations select and train employees. They boost morale of the employees and also their productivity. They design products and answer people's responses to them.

Besides the fundamental research and the applied research another type of research has recently been popular in the fields of social psychology, industrial psychology, and education. This is known as 'action research'.

In action research the researcher emphasises a problem which is immediate, urgent and has local applicability. Thus, the researcher here focuses upon the immediate consequences and applications of a problem and not upon general or universal application nor upon the development of a theory or a model. A teacher may undertake a research to know the reasons underlying unhealthy class-room habits so that immediate outcome may benefit the local class- room students. There are number of researches, given hereunder:

Types of research

Types of research →	
↓	↓
Non-experimental	Experimental
↓	↓
Historical, Descriptive, Correlational, Qualitative , Expost facto	True experimental, Quasi experimental

The above table is being explained below:

4.3 NON-EXPERIMENTAL RESEARCH

A non experimental research is one where independent variables can not be manipulated. The researcher does not have complete control over the conditions of the non experimental research studies. For example, if you want to survey the television-watching behaviour of adolescents, you could do so by having them maintain a diary in which they record what shows they watch and with whom. This descriptive study provides information about their television-watching habits but says nothing about why they watch what they do. You are not in any way trying to have an impact on their television watching behaviour or investigate why they might watch particular shows. This is non-experimental in nature because no cause-and-effect relationships of any type are being hypothesized or investigated. Nonexperimental or descriptive research describes the characterististics of an existing phenomenon. Census of any contrary, current unemployment rate of working single parents who have children under age 5 etc. are the examples of descriptive research. A second characteristic of non-experimental is that the data collection procedure often must forfeit some degree of control in return for obtaining the data. For example the researcher may decide to study public records that may be almost, but not exactly in the form we desire or researcher may have to keep a questionnaire start to help gain the cooperation of subjects.

4.3.1 Historical Research

Historical research relates past events to one another or to current events. Basically, historical research (or historiography) answers the question: what is the nature of events that have happened in the past? For example, one might want to examine trends in treatment of mental illness or how attitudes toward work and families have changed. All of these questions require the detective work of a historian, finding and collecting relevant data and then, just as with any other research endeavour, testing a hypothesis. In fact,

like any other researcher, the historian collects data, analyses them, and then comes to conclusions about the tenability of the hypothesis. One significant difference between historical research and other types of research is the type of data collected and the method of collection.

Researchers who do historical research often accomplish this goal through the use of primary sources (original documents or information from people who have personally experienced an event) and secondary sources (second hand documents or information from people who may have some knowledge about the event but did not experience it first hand). Even if these sources are readily available, however, one of the greatest challenges doing such research is in knowing how much faith the researcher can put on the accuracy of the sources.

Examining the trends in achievement level of Indian children compared with American children is an example of historical research.

4.3.2 Descriptive Research

Descriptive research describes and interprets what is. It is concerned with conditions or relationships that exist, the practices that prevail, the beliefs or attitudes that are held, the processes that are going on; effects that are being felt or trends that are developments. The approach is directed towards identifying various characteristics of research problems and to create observations conducive to further research. Descriptive research describes characteristics of an existing phenomenon. Descriptive research provides a broad picture of a phenomenon you might be interested in exploring. Current employment rates, census of any country, number of working single parents are examples of descriptive research.

4.3.3 Correlational Research

Descriptive and historical research provides a picture of events that are currently happening or have occurred in the past. Researchers often want to go beyond mere description and begin discussing the relationship that certain events might have to one another. The most likely type of research to answer questions about the relationship among variables or events is called correlational events. Correlational research provides some indication as to how two or more things are related to one another or, in effect what they share or have in common or how well a specific outcome might be predicted by one or more pieces of information. Correlational research uses a numerical index called the correlation coefficient as a measure of the strength of this relationship. For example, if you are interested to find out the relationship between the number of hours spent in studying and their achievement, then you would be doing correlational research, because you are interested in the relationship between these two variables. If you are interested in finding out the best predictors of success in a school you would be doing a type of correlational research that includes prediction.

One of the most important points about correlational research is that it examines relationships between variables but in no way implies that one causes changes in the other. In other words, correlation and prediction examine associations but not causal relationships, wherein a change in one factor directly influences a change in another.

4.3.4 Qualitative Research

The general purpose of qualitative research methods is to examine human behaviour in the social, cultural, and political contexts in which they occur. This is done through a variety of tools, such as interviews, historical methods, case studies, and ethnography

and usually results in qualitative (or non-numeric) primary data. In other words, the qualitative researcher is more (but not only) interested in the contents of an interviewee's speech than in the number of times (frequency) a particular comment is made.

Qualitative research is relatively new to the social and behavioural sciences and, to a large extent its increasing popularity is due to a degree of dissatisfaction with other available research methods. Some scientists feel that the traditional experimental model is just too restrictive and narrow, preventing underlying and important factors and relationships from being revealed. But what's so valuable about this set of tools is that it allows you to answer a whole new set of questions in a whole new way.

Qualitative research is the interpretive study of a specific issue or a problem in which the researcher is central to the research process. It's a naturalistic inquiry, which unfolds in a non-manipulative fashion. It lacks the predetermined constraints on outcome variables. Qualitative methods yield data in the form of words than numbers. Qualitative studies provide rich description and explanation of processes in specific local contexts. They provide a feel of the processes by focusing on the chronological flow or sequence of events leading to certain outcomes or consequences. The whole phenomenon is studied with a strategy of a detailed or elaborate (thick) description. Throughout the conduct of qualitative study interpretation and reflection on the part of researcher is required.

Qualitative data can come from a variety of sources and can take a variety of forms. The data may be used as a supplement to quantitative data or may be used in their own right. Qualitative data can be obtained through a variety of methods such as case studies, interviews, discourse analysis, narratives, and ethnography and participant observation.

4.3.5 Ex-Post Facto Research

In this kind of research, the independent variable or variables have already occurred in which the researcher starts with observation of a dependent variable or variables. He then studies the independent variables in retrospect for their possible relations to and effects on the dependent variable or variables. The most important difference between experimental research and ex-post facto research is control. In the former, the investigator has a manipulative control on the independent variable, whereas in the latter this control is not possible, more than this, randomization is not possible. In the ex-post facto research, the researcher must take things as they are and try to collect data and analyse them in that context.

In an ideal social scientific research, the possibility of finding random samples of subjects and randomly assigning them to groups and treatment to group would always be possible. However, these possibilities do not exist in the real situation. The ex-post facto research could be of a large scale or a small scale. This type of research has three weaknesses:

1) the inability to manipulate the independent variables,

2) lack of power to randomize, and

3) the risk of improper interpretation.

In other words, compared to experimental research, other things being equal, ex-post facto research lacks control. This lack is a basis for the third weakness: the risk of improper interpretation. Therefore, committing unequivocally to experimentation or to ex-post facto research may be poor policy; Ex-post facto research may not have particular hypothesis as a predicted relationship may be quite spurious. Therefore, ex-

post facto research that is conducted without hypothesis, without predictions, research in which data are just collected and then interpreted is even more dangerous in its power to mislead.

Self Assessment Questions

Multiple Choice Questions

1) In a naturalistic observation , the phenomenon in which the behaviour of the subjects being observed changes because they are being watched is called:

   a) Observer Bias b) Participant Observation

   c) Observer Effect d) Representative Sampling

2) The main disadvantage of a case study is that it is not easily done due to the large number of subjects detailed enough for most research questions generalizable to other similar conditions biased.

3) Fields experiments are concerned with:

   a) casual relationships

   b) direction of relationships

   c) natural setting

   d) all of these

4) Results are obtained under artificial conditions is a limitation of method:

   a) observational

   b) clinical

   c) experimental

   d) none

5) Which one is not the limitation of laboratory experiment:

   a) artificial environment

   b) lack of internal validity

   c) study of all variables not possible

   d) extraneous factors

6) Which one is not a non-experimental research

   a) field study

   b) field experiment

   c) case study

   d) survey

7) Directly asking a sample of people questions about their behaviour is:

   a) observation

b) survey

c) case experiment

d) experiment

8) Which method examines existing records to confirm hypothesis:

a) survey

b) archival research

c) case study

d) experiment

9) The investigator simply observes and records what happens in the natural environment in the:

a) naturalistic observation

b) the survey method

c) the clinical approach

d) experimental method

10) Results of which methods cannot be generalise to the population at large:

a) survey

b) experiment

c) case study

d) field study

4.4 EXPERIMENTAL RESEARCH

You already know that correlational research can help to establish the presence of a relationship among variables but does not provide any reason to believe that variables are causally related to one another. How does one find out if characteristics, behaviour, or events are related in such a way that the relationship is causal one? There are two types of research that can answer that question: true experimental research and quasi-experimental research.

4.4.1 True Experimental Research

In true experimental research, participants are assigned to groups based on some criterion, often called the treatment variable or treatment condition. For example, you want to compare effects of two different techniques for reducing obsessive-compulsive disorder behaviour in adults. The first technique includes behavioural therapy and the second does not. Once adults are assigned to groups and the programs are completed, you will want to look for any differences between the two groups with regard to the effects of the therapy on the number of obsessive-compulsive behaviours. Because assignment to the groups is determined by the researcher, the researcher has given assignment to the groups as determined by the researcher, and thus the researcher has complete control over the factors to which the adults are exposed. This is the ideal model for establishing a cause and effect relationship because the researcher has clearly

defined the possible cause and can keep very close tabs on what is happening. Most important, however is that the researcher has complete control over the treatment.

4.4.2 Quasi-Experimental Research

In quasi-experimental study, the researcher does not have a such a high degree of control because people have already been indirectly assigned to those groups (e.g., social class, type of abuse, gender, type of injury) for which you are testing the effects. In these researches participants are preassigned to groups based on some pre-determined characteristics or quality. Differences in gender, race, age, grade in school, neighborhood of residence, type of job, and even experiences are examples. These groups assignments have already taken place before the experiment begins, and the researcher has no control as to who is assigned to each groups.

The most important use of the quasi experimental method occurs where researchers cannot, in good conscience, assign people to groups and test the effects of group membership on some other outcome. For example, researchers who are interested in the effects of parental unemployment on children could not very well encourage mothers or fathers to quit work. Rather, they would seek out families where parents are already unemployed and then conduct the research.

Quasi-experimental research is also called post hoc, or after-the-fact, research because the actual research takes place after the assignment of groups (e.g., employed versus unemployed, malnourished versus non malnourished, male versus female). Because assignment has already taken place, the researcher has a high degree, but not the highest degree, of control over the cause of whatever effects are being examined. For the highest degree of control to occur, the true experimental model needs to be followed.

4.5 METHODS OF RESEARCH

Methods of research can be classified into two categories: Non-experimental methods and experimental methods

4.5.1 Non-Experimental Methods

4.5.1.1 Naturalistic Observation

Sometimes all researchers need to know is what is happening to a group of animals or people. The best way to look at his behaviour of animals or people is to watch them behave in their normal environment. In naturalistic observation a scientist observes behaviour in real world settings and makes no effort to manipulate or control the situation. Researchers conduct naturalistic observation at homes, day-care centers and so on. For example, if someone wanted to know how adolescents behave with members of the opposite sex in a social setting the researcher might go the mall on a weekend night.

The most important advantage of naturalistic observation is that it allows researchers to get a realistic picture of how behaviour occurs because they are actually watching that behaviour. In many cases animals or people who know they are being watched will not behave normally anyway in a process called the observer effect so often the observer needs to remain hidden from view. In these cases researcher might use one way mirror, or they might actually become participant in the group. This technique is called participant observation.

One of the major disadvantages of the naturalistic observation is the possibility of observer bias. That happens when the person doing the observing has a particular opinion about

what he or she is going to see or expects to see. Sometimes that person sees only those actions that supports that expectation and ignores actions that don't fit.

Another disadvantage is that each naturalistic setting is unique and unlike any other. Observations that are made at one time in one setting may not hold true for another time even if the setting is similar because the conditions are not going to be exactly the same time after time, researchers don't have that kind of control over the natural world.

4.5.1.2 Archival Research

In this method the researchers do not actually collect data themselves but they obtain data from public records, archives and so on. The researches merely analyses the data attempts to draw certain conclusions from them. The method can be valuable in many respects. For instance there is no other way to collect data on suicides and homicides.

Archival Data are those that are present in existing records or archives. The researcher simply examines or selects the data for analysis. Archival research may already exist or logistics or ethics may make it infeasible to conduct an experiment relating the variables of interest.

Archival research has limitations; First most archival data are collected for naturalistic reasons. Governments are private agencies collect the data for their own purpose and such data often do not suit the purposes of the scientist. Second because archival research is by nature carried out after the fact ruling out alternative hypotheses for particular observed correlations may be difficult. A researcher who relies on archival data is at the mercy of any biases that may have occurred in collecting the data. Police records are notoriously subject to bias. Many categories of crime are seldom reported to the police.

4.5.1.3 Content Analysis

Content analysis sometimes known as document analysis is a method of systematic, examination of communications or of current records or documents. Instead of questioning respondents according to some scale items or observing their behaviour directly the content – analyser takes the communications or documents prepared by the respondents and systematically find out the frequency or proportion of their appearances.

In content or documents analysis the primary sources of data are: letters, autobiographies, diaries, compositions, records, reports, printed forms, themes or other academic work, books, periodicals, bulletins or catalogues, syllabus, court decisions, pictures, films, cartoons etc. It is the obligation of the researchers to establish the trustworthiness of these data that have been drawn. Content analysis can also be used with responses of projective test with all kinds of verbal materials and with materials specially produced for research problems.

Merits and Demerits

- First content analysis is applicable to a wide variety of materials such as creativity, attitude, and ethnocentrisms, stereotypes, curriculum changes values, interest, religiosity, college budgets etc.
- Second content analysis can also be used to examine the effect of experimental manipulation upon the dependent variables. If the investigator wants to study the effect of practice upon the improvement of handwriting of children, content analysis may be of no less importance than any experimental design.

- Third content analysis is also used to validate other methods of observation. Suppose one wants to validate a self-discloure inventory. It is expected that people in general would not like to give personal information against which the test can be validated. But subjects can be asked some projective-type of questions and the responses can be content-analysed. Subsequently the test can be validated against the content- analysed response.
- Despite these merits content analysis should be used with caution because of the complexities involved.

4.5.2 Surveys

Survey methods are widely used gathering scientific information. It involves collection of data by asking questions and recording people's answers to them. They are used for various purposes on frequent goal of this kind of research is to estimate population characteristics. For example the goal of survey might be to determine the percentage of people who hold supporting of opposing positions on particular social issues, such as provision of reservation for women in job. The census and public opinion done by various agencies are good examples of surveys.

Surveys can also be used to test hypotheses about the relationships among variable. One may try to find out the effect of some event on people's behaviour. For example surveys have been conducted after the earth quack at Bhuj in Gujarat to find out the impact of earthquake on people's lives.

In undertaking surveys the researcher defines the study population and draws the sample. The sample must be representative of the population. Researcher use different procedures of sampling. They can use random sampling in which every member of the population has a equal and independent chance of being included in the sample. Usually the researcher use stratified random sampling in which two or more sub samples are represented according to some predetermined proportion as they exist in the population. Some times groups are selected by using clusters or groupings from a larger population. This is known as cluster sampling. The sample size is also determined because the ability to generalise depends on the sample size used in the survey.

Depending upon the ways of collecting data survey methods can be classified into different categories namely personal interview, mail questionnaire, telephone survey, internet survey, web survey, etc.

Advantages:

- Survey methods have wide scope. In other words through survey method a great deal of information can be obtained by studying the larger population
- It is more accurate. As Kerlinger (1986) has put it." The accuracy of properly drawn samples is frequently surprising, even to experts in the field. A sample of 600 to 700 individuals or families can give a remarkably accurate portrait of a community its values attitudes and beliefs.
- Survey methods has been frequently used in almost all the social sciences. Hence the method has inter-disciplinary value. In fact such researches provide raw materials for a vast increasing " gross disciplinary research" (Cambell & Katona,1953).
- Survey method is considered a very important and indispensable tool for studying social attitudes, beliefs, values etc. with accuracy at the economic rate.

Disadvantages:

- Survey methods remains at the surface and it does not penetrate into the depth of the problem being investigated.
- Survey method are time consuming, and demand a good amount of expenditure.
- Although it is true that survey research is accurate, it is still subject to sampling errors. In survey research there is always the probability of one chances in a twenty or hundred with an error, more serious than minor fluctuation of a chance, may occur and distort the validity of the result obtained.
- Survey method demands expertise, research knowledge and sophistication on the part of the researcher. In other words the researcher must know the techniques of sampling, questionnaire construction, interviewing and analysis of data.

4.5.3 Field Studies

Field studies are ex-post scientific inquiries aimed at discovering the relations and interactions among sociological, psychological and educational variables in real social structures. In scientific studies, large or small, they systematically pursue relations and test hypotheses, that are ex-post facto, that are made in actual life situations, will be considered field ex-post factor, that are made in actual life situations, will be considered field studies. The investigator in a field stud looks at the social or institutional situation and then studies the relations among the attitudes, values, perceptions, and behaviours of individuals and groups in the situation. He ordinarily manipulates no independent variables.

Katz (1953) has divided field studies into two board types – exploratory and hypothesis testing. The exploratory types seek what is, rather than predict relations to be found. They have three purposes : (1) to discover significant variables in the field situation, (2) to discover relations among variables (3) to lay a ground work for later, more systematic and rigorous testing of hypothesis.

It is well to recognise though that there are activities preliminary to hypothesis testing in scientific research. In order to achieve the desirable aim of hypothesis testing, preliminary methodological and measurement investigation must often be done. The second sub-type of exploratory field studies, research aimed at discovering or uncovering the relations, is indispensable to scientific advancement in the social sciences.

The field studies are strong in realism, significance, strength of variables, theory orientation and heuristic quality. The realism of field studies is obvious. They are highly heuristic. Any researcher knows that one of the research difficulties of the field studies is to keep himself contained within the limits of his problem. Hypothesis is frequently fling themselves at one. The field is rich in discovery potentiality. After starting to gather data, he might stumble upon many interesting notions that can reflect the course of investigation.

Despite these strengths, the field study is a scientific weakness of laboratory experiments. Its most serious weakness of course is its ex-post facto character. Anther methodological weakness is lack of precision in the measurement of field variables. Other weakness of field studies are practical problems: feasibility, cost, sampling, and time. The field researcher therefore, needs to be salesman, administrator and entrepreneur as well as investigator.

4.5.4 Case Study

The case study is one of the important types of non-experimental research. The case study is not a specific technique rather it is one way of organising social data for the purpose of viewing social reality. It tends to preserve the unitary character of a social object being studied. It tends to examine a social unit as a whole. The unit may be a person a family a social group a social institution or even a community (Goode & Hatt 1981, Best & Kahn 1992).

A case study may utilise interview, observation, and psychological tests. It is a valuable research strategy in the fields of clinical psychology and human development. Using case study a researcher is able to have an in-depth look at one person. Those unique aspects of a person's life which cannot be duplicated for practical or ethical reasons are captured by case study. With the help of case study you can try to understand fantasies hopes fears traumatic experiences upbringing or anything that helps to understand a person's mind and behaviour. Case studies provide a narrative or detailed description of the events that takes place in a person's life. Freud's insight that led to the development of psychoanalytic theory emerged from his observation and reflections on individual cases. It should be remembered that the person studied as a case is unique and our judgments are of unknown reliability. Case studies provide detailed in-depth depictions of people's lives but we need to exercise caution when generalizing from individual cases. They are like naturalistic observations and all one can do is to describe the course of events.

The problem of validity of single case study is very serious. It is therefore recommended that researchers should use objective measurement techniques multiple sources of information and frequent assessment of relevant variables. The uses of case study as a research strategy requires that the cases must be chosen that represent the variable in question and one must have sufficient access to the cases. Careful planning of data-collection is very necessary. Throughout the data-collection process the investigator is required to maintain a chain of evidence linking the various data sources having bearing on the research questions.

Self Assessment Questions

1) Detailed and in-depth description of people lives can be obtained through survey methods. T/F
2) Census is an example of correlational research. T/F
3) Survey helps to understand population. T/F
4) A case study may utilise observation and interview. T/F
5) Observer bias is one of the important problem associated with survey method. T/F
6) Case study method is most useful in clinical setting. T/F
7) Opinion polls are the examples of survey methods. T/F
8) Social behaviour under the war condition can be studied by the field study method. T/F
9) Quasi-experimental research involves random assignment of subject to different groups. T/F
10) Descriptive research does not have the characteristics of manipulations. T/F

4.6 EXPERIMENTAL METHODS

4.6.1 Laboratory Experiments

As you know a laboratory experiment is one of the most powerful techniques for studying the relationships between variables under controlled condition. It may be defined as the study of a problem in a situation in which some variables are manipulated and some are controlled in order to have an effect upon the dependent variable. The variables which are manipulated are known as independent variables and the variables which are controlled, are known as extraneous or relevant variables. Thus in a laboratory experiment the effect of manipulation of an independent variable upon the dependent variable is observed under controlled conditions. Festinger & Katz (1953:137) have defined a laboratory experiment as "one in which the investigator creates a situation with the exact conditions he wants to have and in which the controls some, and manipulates other variables".

Kerlinger (1986), there are three main purposes of the laboratory experiment. First, a laboratory experiment purports to discover a relationship between the dependent variable and the independent variable under pure, uncontaminated and controlled conditions. When a particular relationship is discovered, the experimenter is better able to predict the dependent variable. Second, a laboratory experiment helps in testing the accuracy of predictions derived from theses or researches. Third, a laboratory experiment helps building the theoretical systems by refining theories and hypotheses and thus, provides a breeding ground for scientific evaluation of those theories and hypotheses.

A laboratory experiment has some strength and weakness you have already read in the previous unit II, you may refer this for the detailed thereof.

4.6.2 Field Experiment

A field experiment is very similar to a laboratory experiment. A field experiment may be defined as a study carried out in a more or less realistic situation or field where the experimenter successfully manipulates one or more independent variables under the maximum possible controlled conditions. Experimenter manipulates one or more independent variable in natural setting for determining their effect upon behaviour, the procedure is known as field experiment.

Field experiment has number of Strengths which are given below:

1) A field experiment deals with the realistic life situation. Hence it is more suited for studying social changes, social processes and social influence.

2) One principle of research is that the more realistic the situation, the stronger is effect of the variables under study. In a field experiment this principle is fully satisfied. Thus, one can say that in the field experiment, since it deals with a realistic situation, the variables have stronger and more obvious effects.

3) Is derived from the above two points. When variables are stronger because of more realistic situations, an experimenter can make better and more sound generalisations on the basis of the obtained results. In other words, this tends to increase the external validity of the field experiment. For example, when one carried out a field experiment by taking small groups of workers from a factory, and reaches the conclusion that absenteeism among workers is primarily due to the poor financial incentive, this can be safely generalized with respect to the workers of other factories as well because the experiment has been carried on actual workers in a factory.

4) A field experiment is well-suited for testing a broad hypothesis and theories and for obtaining answers to practical questions.

The principles **weaknesses of field experiments** are as given below:

1) Since a field experiment is carried out in a realistic situation, there is always the possibility that the effect of independent variables is contaminated with uncontrolled environmental variables.

2) The unexpected noise and gathering may affect the dependent variable and thereby, contaminate the influence of the independent variable. In a laboratory experiment this problem does not arise because of the fully controlled laboratory situation. However, if the situation is somehow fully controlled in a field experiment, it would prove to be a more powerful tool than the laboratory experiment.

3) In many field situations the manipulation of independent variables may be difficult due to non-cooperation of subjects. Children are to be exposed to frustrating situations; they may not like it and may restrain their children from being exposed to field situation.

4) In a field experiment it is not possible to achieve a high degree of precision or accuracy because of some uncontrolled environment variables.

5) Field experiment requires that the investigator has high social skills to deal effectively with people in a field situation.

4.7 LET US SUM UP

Psychological researches have been classified depending upon the extent to which they satisfy requirement of a scientific procedure based on the purpose for which it is undertaken. There are two types of psychological researches – Non-experimental and experimental research. In non-experimental researches, the independent variable is not manipulated, the researcher does not have complete control over the conditions of the non-experimental research study. Non-experimental researches are covered descriptive, historical correlational, qualitative and ex- post facto research. Experimental researches are controlled manipulation of the variables that allows the researcher to determine the cause and effect relationship. The unit has described the two types of experimental research i.e. true experimental research and quasi-experimental research. Moreover this unit has described the major methods of non-experimental researches namely – naturalistic observation, case studies, content analysis, achieves, field studies etc. Finally two research method of the experimental research i.e. laboratory experiment and field experiment are highlighted.

4.8 UNIT END QUESTIONS

1) Describe the various types of non-experimental researches.

2) What do you mean by experimental researches? Discuss the types of experimental research.

3) Compare experimental research and non experiment research with relevant examples.

4) Compare field experiment and laboratory experiment with example.

5) What is survey research? Discuss advantage and disadvantage of survey research.

4.9 GLOSSARY

Descriptive : Describe the characteristics of an existing phenomenon.

Historical : Relate events that have occurred in the past to current events.

Correlational : Examine the relationship between variables.

Qualitative : To examine human behaviour and the social cultural and political contexts within which it occurs.

True Experimental : To test for true cause and effect relationship.

Quasi Experimental : To test for casual relationship without having full control.

Naturalistic Observation : observational research of subjects in their natural environment carried out to disturb the subjects as little as possible.

Archival Method : study method that examines existing records to obtain date and test hypotheses.

Case Study : study of one individual in great detail

Observer Bias : tendency of observer to see what they expect to see.

Laboratory Experiments : the techniques for studying the relationship between the variables under control condition

Field Experiment : a study carried out in more or less realistic situation where the experimenters manipulate independent under the maximum possible control condition.

Ex-Post Facto Research : investigator attempts to trace an effect which has already occurred to its probable causes

Survey : assessing public opinion or individual characteristics by the use of questionnaire and sampling methods.

Self Assessment Questions

Answers: 1. (a) 2 (b) 3 (d) 4 (c) 5. (a) 6. (b) 7 (b) 8. (b) 9. (a) 10. (c)

True/False

Answers: 1.F, 2.F, 3.T, 4 T, 5.F, 6.T, 7.T, 8.T, 9.F, 10.T

4.10 SUGGESTED READINGS

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