DESCRIPTIVE RESEARCH

Unit Structure

5.0 Objectives
5.1 Meaning of Descriptive Research
5.2 Co relational Research
5.3 Causal-Comparative Research
5.4 Document Analysis
5.5 Ethnography
5.6 Case Study
5.7 Analytical Method.

5.0 OBJECTIVES:

After reading this unit, the student will be able to:

(a) State the nature of descriptive research
(b) Explain how to conduct correlational research
(c) Explain how to conduct correlational research
(d) Explain how to conduct causal-comparative research
(e) Explain how to conduct case study research
(f) Explain the concept of documentary research
(g) Explain how to conduct ethnographic research
(h) Explain the concept of analytical research

5.1 NATURE OF DESCRIPTIVE RESEARCH:

The descriptive research attempts to describe, explain and interpret conditions of the present i.e. “what is”. The purpose of a descriptive research is to examine a phenomenon that is occurring at a specific place(s) and time. A descriptive research is concerned with conditions, practices, structures, differences or relationships that exist, opinions held, processes that are going on or trends that are evident.
Types of Descriptive Research Methods

In the present unit, the following descriptive research methods are described in detail:

1. Correlational Research
2. Causal-Comparative Research
3. Case Study
4. Ethnography
5. Document Analysis
6. Analytical Method.

5.2 CO-RELATIONAL METHOD:

Correlational research describes what exists at the moment (conditions, practices, processes, structures etc.) and is therefore, classified as a type of descriptive method. Nevertheless, these conditions, practices, processes or structures described are markedly different from the way they are usually described in a survey or an observational study.

Correlational research comprises of collecting data to determine whether, and to what extent, a relationship exists between two or more quantifiable variables. Correlational research uses numerical data to explore relationships between two or more variables. The degree of relationship is expressed in terms of a coefficient of correlation. If the relationship exists between variables, it implies that scores on one variable are associated with or vary with the scores on another variable. The exploration of relationship of the relationship between variables provides insight into the nature of the variables themselves as well as an understanding of their relationships. If the relationships are substantial and consistent, they enable a researcher to make predictions about the variables.

Correlational research is aimed at determining the nature, degree and direction of relationships between variables or using these relationships to make predictions. Correlational studies typically investigate a number of variables expected to be related to a major, complex variable. Those variables which are not found to be related to this major, complex variable are omitted from further analysis. On the other hand, those variables which are found to be related to this major, complex variable are further analysed in a causal-comparative or experimental study so as to determine the exact nature of the relationship between them.
In a correlational study, hypotheses or research questions are stated at the beginning of the study. The null hypotheses are often used in a correlational study. 

Correlational study does not specify cause-and-effect relationships between variables under consideration. It merely specifies concomitant variations in the scores on the variables. For example, there is a strong relationship between students’ scores on academic achievement in Mathematics and their scores on academic achievement in Science. This does not suggest that one of these variables is the cause and the other is the effect. In fact, a third variable, viz., students’ intelligence could be the cause of students’ academic achievement in both, Mathematics and Science.

**Steps of a Correlational Research**

1. Selection of a Problem: Correlational study is designed (a) to determine whether and how a set of variables are related, or (b) to test the hypothesis of expected relationship between among the set of two or more variables. The variables to be included in the study need to be selected on the basis of a sound theory or prior research or observation and experience. There has to be some logical connection between the variables so as to make interpretations of the findings of the study more meaningful, valid and scientific. A correlational study is not done just to find out what exists: it is done for the ultimate purpose of explanation and prediction of phenomena. If a correlational study is done just to find out what exists, it is usually known as a ‘shot gun’ approach and the findings of such a study are very difficult to interpret.

2. Selection of the Sample and the Tools: The minimum acceptable sample size should be 30, as statistically, it is regarded as a large sample. The sample is generally selected using one of the acceptable sampling methods. If the validity and the reliability of the variables to be studied are low, the measurement error is likely to be high and hence the sample size should be large. Thus it is necessary to ensure that valid and reliable tools are used for the purpose of collecting the data. Moreover, suppose you are studying the relationship between classroom environment and academic achievement of students. If your tool measuring classroom environment focuses only on the physical aspects of the classroom and not its psycho-social aspects, then your findings would indicate a relationship only between academic achievement of students
and the physical aspects of the classroom environment and not the entire classroom environment since the physical aspects of the classroom environment is not the only comprehensive and reliable measure of classroom environment. Thus the measurement instruments should be valid and reliable.

3. Design and Procedure: The basic design of a correlational study is simple. It requires scores obtained on two or more variables from each unit of the sample and the correlation coefficient between the paired scores is computed which indicates the degree and direction of the relationship between variables.

4. Interpretation of the Findings: In a study designed to explore or test hypothesized relationships, a correlation coefficient is interpreted in terms of its statistical significance.

**Correlational research is of the following two types:**

(a) **Relationship Studies**: These attempt to gain insight into variables that are related to complex variables such as academic performance, self-concept, stress, achievement motivation or creativity.

(b) **Prediction Studies**: These are conducted to facilitate decisions about individuals or to aid in various types of selection. They are also conducted to determine predictive validity of measuring tools as well as to test variables hypothesized to be predictors of a criterion variable.

Some questions that could be examined through correlational research are as follows:

1. How is job satisfaction of a teacher related to the extent of autonomy available in job?
2. Is there a relationship between Socio-Economic Status of parents and their involvement with the school?
3. How well do Common Entrance Test Scores for admission to B.Ed. reflect / predict teacher effectiveness?
Check Your Progress - I

(a) State the meaning of correlational research.

(b) Explain the steps of correlational research.

5.3 CAUSAL-COMPARATIVE RESEARCH:

It is a type of descriptive research since it describes conditions that already exist. It is a form of investigation in which the researcher has no direct control over independent variable as its expression has already occurred or because they are essentially non-manipulable. It also attempts to identify reasons or causes of pre-existing differences in groups of individuals i.e. if a researcher observes that two or more groups are different on a variable, he tries to identify the main factor that has led to this difference. Another name for this type of research is ex post facto research (which in Latin means “after the fact”) since both the hypothesised cause and the effect have already occurred and must be studied in retrospect.

Causal-comparative studies attempt to identify cause-effect relationships, correlational studies do not. Causal-comparative studies involve comparison, correlational studies involve relationship. However, neither method provides researchers with true experimental data. On the other hand, causal-comparative and experimental research both attempt to establish cause-and-effect relationships and both involve comparisons. In an experimental study, the researcher selects a random sample and then randomly divides the sample into two or more groups. Groups are assigned to the treatments and the study is carried out. However, in causal-comparative research, individuals are not randomly assigned to
treatment groups because they already were selected into groups before the research began. In experimental research, the independent variable is manipulated by the researcher, whereas in causal-comparative research, the groups are already formed and already different on the independent variable.

Inferences about cause-and-effect relationships are made without direct intervention, on the basis of concomitant variation of independent and dependent variables. The basic causal-comparative method starts with an effect and seeks possible causes. For example, if a researcher observes that the academic achievement of students from different schools. He may hypothesise the possible cause for this as the type of management of schools, viz. private-aided, private-unaided, or government schools (local or state or any other). He therefore decides to conduct a causal-comparative research in which academic achievement of students is the effect that has already occurred and school types by management is the possible hypothesised cause. This approach is known as *retrospective causal-comparative research* since it starts with the effects and investigates the causes.

In another variation of this type of research, the investigator starts with a cause and investigates its effect on some other variable. i.e. such research is concerned with the question ‘what is the effect of X on Y when X has already occurred?’ For example, what long-term effect has occurred on the self-concept of students who are grouped according to ability in schools? Here, the investigator hypothesises that students who are grouped according to ability in schools are labelled ‘brilliant’, ‘average’ or ‘dull’ and this over a period of time could lead to unduly high or unduly poor self-concept in them. This approach is known as *prospective causal-comparative research* since it starts with the causes and investigates the effects. However, retrospective causal-comparative studies are far more common in educational research.

Causal-comparative research involves two or more groups and one independent variable. The goal of causal-comparative research is to establish cause-and-effect relationships just like an experimental research. However, in causal-comparative research, the researcher is able to identify past experiences of the subjects that are consistent with a ‘treatment’ and compares them with those subjects who have had a different treatment or no treatment. The causal-comparative research may also involve a pre-test and a post-test. For instance, a researcher wants to compare the effect of “Environmental Education” in the B.Ed. syllabus on student-teachers’ awareness of
environmental issues and problems attitude towards environmental protection. Here, a researcher can develop and administer a pre-test before being taught the paper on “Environmental Education” and a post-test after being taught the same. At the same time, the pre-test as well as the post-test are also administered to a group which was not taught the paper on “Environmental Education”. This is essentially a non-experimental research as there is no manipulation of the treatment although it involves a pre-test and a post-test. In this type of research, the groups are not randomly assigned to exposure to the paper on “Environmental Education”. Thus it is possible that other variables could also affect the outcome variables. Therefore, in a causal-comparative research, it is important to think whether differences other than the independent variable could affect the results.

In order to establish cause-and-effect in a causal-comparative research, it is essential to build a convincing rational argument that the independent variable is influencing the dependent variable. It is also essential to ensure that other uncontrolled variables do not have an effect on the dependent variable. For this purpose, the researcher should try to draw a sample that minimises the effects of other extraneous variables. According to Picciano, “In stating a hypothesis in a causal comparative study, the word “effect” is frequently used”.

**Conducting a Causal-Comparative Study**

Although the independent variable is not manipulated, there are control procedures that can be exercised to improve interpretation of results.

**Design and Procedure**

The researcher selects two groups of participants, accurately referred to as *comparison groups*. These groups may differ in two ways as follows:

(i) One group possesses a characteristic that the other does not.

(ii) Each group has the characteristic, but to differing degrees or amounts.

(iii) Definition and selection of the comparison groups are very important parts of the causal-comparative procedure.

(iv) The independent variable differentiating the groups must be clearly and operationally defined, since each group represents a different population.
(v) In causal-comparative research the random sample is selected from two already existing populations, not from a single population as in experimental research.

(vi) As in experimental studies, the goal is to have groups that are as similar as possible on all relevant variables except the independent variable.

(vii) The more similar the two groups are on such variables, the more homogeneous they are on everything but the independent variable.

Control Procedures

- Lack of randomization, manipulation, and control are all sources of weakness in a causal-comparative study.
- Random assignment is probably the single best way to try to ensure equality of the groups.
- A problem is the possibility that the groups are different on some other important variable (e.g. gender, experience, or age) besides the identified independent variable.

Matching

- Matching is another control technique.
- If a researcher has identified a variable likely to influence performance on the dependent variable, the researcher may control for that variable by pair-wise matching of participants.
- For each participant in one group, the researcher finds a participant in the other group with the same or very similar score on the control variable.
- If a participant in either group does not have a suitable match, the participant is eliminated from the study.
- The resulting matched groups are identical or very similar with respect to the identified extraneous variable.
- The problem becomes serious when the researcher attempts to simultaneously match participants on two or more variables.

Comparing Homogeneous Groups or Subgroups

- To control extraneous variables, groups that are homogeneous with respect to the extraneous variable are compared.
This procedure may lower the number of participants and limit the generalisability of the findings.

A similar but more satisfactory approach is to form subgroups within each group that represent all levels of the control variable.

Each group might be divided into two or more subgroups on the basis of high, average, and low levels of ‘Independent variable’.

Suppose the independent variable in the study is students’ IQ. The subgroups then will comprise of high, average, and low levels of IQ. The existence of comparable subgroups in each group controls for IQ.

In addition to controlling for the variable, this approach also permits the researcher to determine whether the independent variable affects the dependent variable differently at different levels of the control variable.

The best approach is to build the control variable right into the research design and analyze the results in a statistical technique called factorial analysis of variance.

A factorial analysis allows the researcher to determine the effect of the independent variable and the control variable on the dependent variable both separately and in combination.

It permits determination of whether there is interaction between the independent variable and the control variable such that the independent variable operates differently at different levels of the control variable.

Independent variables in a causal-comparative research can be of following types:

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<thead>
<tr>
<th>Type of Variable</th>
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<td>School Type by Management ( Private-aided Private-unaided v/s Government)</td>
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<td>School Type by Gender( Single-sex v/s Co-educational)</td>
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<td>School Type by Denomination (Run by a non-religious organisation v/s Run by a religious organisation whose one of the objectives is to propagate a specific religion.)</td>
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<td>School Type by Board Affiliation (SSC, CBSE, ICSE, IB, IGCSE)</td>
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<td>Socio-Economic Context of the School</td>
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The Value of Causal-Comparative Research: In a large majority of educational research especially in the fields of sociology of education and educational psychology, it is not possible to manipulate independent variables due to ethical considerations especially when one is dealing with variables such as anxiety, intelligence, home environment, teacher personality, negative reinforcement, equality of opportunity and so on. It is also not possible to control such variables as in an experimental research. For studying such topics and their influence on students, causal-comparative method is the most appropriate.

The Weaknesses of Causal-Comparative Research: There are three major limitations of causal-comparative research. These include, (a) lack of control or the inability to manipulate independent variables methodologically, (b) the lack of power to assign subjects randomly to groups and (c) the danger of inappropriate interpretations. The lack of randomization, manipulation, and control factors make it difficult to establish cause-and-effect relationships with any degree of confidence.

The statistical techniques used to compare groups in a causal-comparative research include the t-test when two groups are to be compared and ANOVA when more than two groups are to be compared. The technique of ANCOVA may also be used in case some other variables likely to influence the dependent variable need to be controlled statistically. Sometimes, chi square is also used to compare group frequencies, or to see if an event occurs more frequently in one group than another.

Use of Analysis of Covariance (ANCOVA): It is used to adjust initial group differences on variables used in causal-comparative and experimental research studies. Analysis of covariance adjusts scores on a dependent variable for initial differences on some other variable related to performance on the dependent. Suppose we were doing a study to compare two methods, X and Y, of teaching sixth standard students to solve mathematical problems. Covariate analysis statistically adjusts the scores of method Y to remove the initial advantage so that the results at the end of the study can be fairly compared as if the two groups started equally.
Check Your Progress - II

(a) State the meaning of causal-comparative research.

(b) Explain the steps and procedure of conducting causal-comparative research.

(c) Explain the strengths and weaknesses of causal-comparative research.

(d) Give examples of causal-comparative research in education.
5.4 DOCUMENTARY ANALYSIS:

Documentary Analysis is closely related to historical research since in such surveys we study the existing documents. But it is different from historical research in which our emphasis is on the study of the past; and in the descriptive research we emphasise on the study of the present. Descriptive research in the field of education may focus on describing the existing school practices, attendance rate of the students, health records, and so on.

The method of documentary analysis enables the researcher to include large amounts of textual information and systematically identify its properties. Documentary analysis today is a widely used research tool aimed at determining the presence of certain words or concepts within texts or sets of texts. Researchers quantify and analyze the presence, meanings and relationships of such words and concepts, then make inferences about the messages within the texts, the writer(s), the audience and even the culture and time of which these are a part. Documentary analysis could be defined as a research technique for the objective, systematic, and quantitative description of manifest content of communications. It is a technique for making inferences by objectively and systematically identifying specified characteristics of messages. The technique of documentary analysis is not restricted to the domain of textual analysis, but may be applied to other areas such as coding student drawings or coding of actions observed in videotaped studies, analyzing past documents such as memos, minutes of the meetings, legal and policy statements and so on. In order to allow for replication, however, the technique can only be applied to data that are durable in nature. Texts in documentary analysis can be defined broadly as books, book chapters, essays, interviews, discussions, newspaper headlines and articles, historical documents, speeches, conversations, advertising, theater, informal conversation, or really any occurrence of communicative language. Texts in a single study may also represent a variety of different types of occurrences.

Documentary analysis enables researchers to sift through large amount of data with comparative ease in a systematic fashion. It can be a useful technique for allowing one to discover and describe the focus of individual, group, institutional or social attention. It also allows inferences to be made which can then be corroborated using other methods of data collection. Much documentary analysis research is motivated by the search for techniques to infer from symbolic data what would be too costly, no longer possible, or too obtrusive by the use of other techniques.
These definitions illustrate that documentary analysis emphasises an integrated view of speech/texts and their specific contexts. Document analysis is the systematic exploration of written documents or other artefacts such as films, videos and photographs. In pedagogic research, it is usually the contents of the artefacts, rather than say, the style or design, that are of interest.

Why analyse documents?

Documents are an essential element of day-to-day work in education. They include:

- Student essays
- Exam papers
- Minutes of meetings
- Module outlines
- Policy documents

In some pedagogic research, analysis of relevant documents will inform the investigation. If used to triangulate, or give another perspective on a research question, results of document analysis may complement or refute other data. For example, policy documents in an institution may be analysed and interviews with staff or students and observation of classes may suggest whether or not new policies are being implemented. A set of data from documents, interviews and observations could contribute to a case study of a particular aspect of pedagogy.

How can documents be analysed?

The content of documents can be explored in systematic ways which look at patterns and themes related to the research question(s). For example, in making a case study of deep and surface learning in a particular course, the question might be

'How has deep learning been encouraged in this course in the last three years?'

Minutes of course meetings could be examined to see whether or how much this issue has been discussed; Student handouts could be analysed to see whether they are expressed in ways which might encourage deep learning. Together with other data-gathering activities such as student questionnaires or observation of classes, an action research study might then be based on an extended research question so that strategies are implemented to develop deep learning.
In the example of deep learning, perhaps the most obvious way to analyse the set of minutes would be to use a highlighting pen every time the term 'deep learning' was used. You might also choose to highlight 'surface learning' a term with an implied relationship to deep learning. You might also decide, either before starting the analysis, or after reading the documents, that there are other terms or inferences which imply an emphasis on deep learning. You might therefore go through the documents again, selecting additional references.

The levels of analysis will vary but a practitioner-researcher will need to be clear and explicit about the rationale for, and the approach to, selection of content.

**Advantages and disadvantages of document analysis**

Robson (2002) points out the advantages and disadvantages of content analysis. An advantage is that documents are unobtrusive and can be used without imposing on participants; they can be checked and re-checked for reliability.

A major problem is that documents may not have been written for the same purposes as the research and therefore conclusions will not usually be possible from document analysis alone.

**Check Your Progress - III**

(a) State the meaning of documentary research.

(b) Explain the applications of documentary research.
5.5 ETHNOGRAPHY:

Meaning

Ethnographic studies are usually holistic, founded on the idea that human beings are best understood in the fullest possible context, including the place where they live, the improvements they have made to that place, how they make a living and gather food, housing, energy and water for themselves, what their marriage customs are, what language(s) they speak and so on. Ethnography is a form of research focusing on the sociology of meaning through close field observation of socio-cultural phenomena. Typically, the ethnographer focuses on a community (not necessarily geographic, considering also work, leisure, classroom or school groups and other communities). Ethnography may be approached from the point of view of art and cultural preservation and as a descriptive rather than analytic endeavour. It essentially is a branch of social and cultural anthropology. The emphasis in ethnography is on studying an entire culture. The method starts with selection of a culture, review of the literature pertaining to the culture, and identification of variables of interest - typically variables perceived as significant by members of the culture. Ethnography is an enormously wide area with an immense diversity of practitioners and methods. However, the most common ethnographic approach is participant observation and unstructured interviewing as a part of field research. The ethnographer becomes immersed in the culture as an active participant and records extensive field notes. In an ethnographic study, there is no preset limit of what will be observed and interviewed and no real end point in as is the case with grounded theory.

Hammersley and Atkinson define ethnography as, "We see the term as referring primarily to a particular method or sets of methods. In its most characteristic form it involves the ethnographer participating, overtly or covertly, in people's lives for an extended period of time, watching what happens, listening to what is said, asking questions—in fact, collecting whatever data are available to throw light on the issues that are the focus of the research. Johnson defines ethnography as "a descriptive account of social life and culture in a particular social system based on detailed observations of what people actually do."
Assumptions in an Ethnographic Research

According to Garson, these are as follows:

a. Ethnography assumes that the principal research interest is primarily affected by community cultural understandings. The methodology virtually assures that common cultural understandings will be identified for the research interest at hand. Interpretation is apt to place great emphasis on the causal importance of such cultural understandings. There is a possibility that an ethnographic focus will overestimate the role of cultural perceptions and underestimate the causal role of objective forces.

b. Ethnography assumes an ability to identify the relevant community of interest. In some settings, this can be difficult. Community, formal organization, informal group and individual-level perceptions may all play a causal role in the subject under study and the importance of these may vary by time, place and issue. There is a possibility that an ethnographic focus may overestimate the role of community culture and underestimate the causal role of individual psychological or of sub-community (or for that matter, extra-community) forces.

c. Ethnography assumes that the researcher is capable of understanding the cultural mores of the population under study, has mastered the language or technical jargon of the culture and has based findings on comprehensive knowledge of the culture. There is a danger that the researcher may introduce bias toward perspectives of his or her own culture.

d. While not inherent to the method, cross-cultural ethnographic research runs the risk of falsely assuming that given measures have the same meaning across cultures.

Characteristics of Ethnographic Research:

According to Hammersley and Sanders, ethnography is characterized by the following features:

(a) People's behaviour is studied in everyday contexts.
(b) It is conducted in a natural setting.
(c) Its goal is more likely to be exploratory rather than evaluative.
(d) It is aimed at discovering the local person’s or “native’s” point of view, wherein, the native may be a consumer or an end-user.
(e) Data are gathered from a wide range of sources, but observation and/or relatively informal conversations are usually the principal ones.

(f) The approach to data collection is unstructured in that it does not involve following through a predetermined detailed plan set up at the beginning of the study nor does it determine the categories that will be used for analysing and interpreting the soft data obtained. This does not mean that the research is unsystematic. It simply means that initially the data are collected as raw form and a wide amount as feasible.

(g) The focus is usually a single setting or group of a relatively small size. In life history research, the focus may even be a single individual.

(h) The analysis of the data involves interpretation of the meanings and functions of human actions and mainly takes the form of verbal descriptions and explanations, with quantification and statistical analysis playing a subordinate role at most.

(i) It is cyclic in nature concerning data collection and analysis. It is open to change and refinement throughout the process as new learning shapes future observations. As one type of data provides new information, this information may stimulate the researcher to look at another type of data or to elicit confirmation of an interpretation from another person who is part of the culture being studied.

**Guidelines for Conducting Ethnography**

Following are some broad guidelines for conducting fieldwork:

1. Be descriptive in taking field notes. Avoid evaluations.
2. Collect a diversity of information from different perspectives.
3. Cross-validate and triangulate by collecting different kinds of data obtained using observations, interviews, programme documentation, recordings and photographs.
4. Capture participants' views of their own experiences in their own words. Use quotations to represent programme participants in their own terms.
5. Select key informants carefully. Draw on the wisdom of their informed perspectives, but keep in mind that their perspectives are limited.
6. Be conscious of and perceptive to the different stages of fieldwork. (a) Build trust and rapport at the entry stage. Remember that the researcher-observer is also being observed and evaluated. (b) Stay attentive and disciplined during the more routine middle-phase of fieldwork. (c) Focus on pulling together a useful synthesis as fieldwork draws to a close. (d) Be well-organized and meticulous in taking detailed field notes at all stages of fieldwork. (e) Maintain an analytical perspective grounded in the purpose of the fieldwork: to conduct research while at the same time remaining involved in experiencing the observed setting as fully as possible. (f) Distinguish clearly between description, interpretation and judgment. (g) Provide formative feedback carefully as part of the verification process of fieldwork. Observe its effect. (h) Include in your field notes and observations reports of your own experiences, thoughts and feelings. These are also field data. Fieldwork is a highly personal experience. The meshing of fieldwork procedures with individual capabilities and situational variation is what makes fieldwork a highly personal experience. The validity and meaningfulness of the results obtained depend directly on the observer's skill, discipline, and perspective. This is both the strength and weakness of observational methods.

Techniques Used in Conducting Ethnography

These include the following:

A. Listening to conversations and interviewing. The researcher needs to make notes or audio-record these.
B. Observing behaviour and its traces, making notes and mapping patterns of behaviour, sketching of relationship between people, taking photographs, video-recordings of daily life and activities and using digital technology and web cameras.

Stages in Conducting Ethnography

According to Spradley, following are the stages in conducting an ethnographic study:

1. Selecting an ethnographic project.
2. Asking ethnographic questions and collecting ethnographic data.
4. Analysing ethnographic data and conducting more research as required.
5. Outlining and writing an ethnography.

**Steps of Conducting Ethnography**

According to Spradley, ethnography is a non-linear research process but is rather, a cyclical process. As the researcher develops questions and uncovers answers, more questions emerge and the researcher must move through the steps again.

According to Spradley, following are the steps of conducting an ethnographic study (However, all research topics may not follow all the steps listed here):

1. Locating a social situation. The scope of the topic may vary from the “micro-ethnography” of a “single-social-situation” to “macro-ethnography” of a complex society. According to Hymes, there are three levels of ethnography including (i) “comprehensive ethnography” which documents an entire culture, (ii) the “topic-oriented ethnography” which looks at aspects of a culture and (iii) “hypothesis-oriented ethnography” which beings with an idea about why something happens in a culture. Suppose you want to conduct research on classroom environment. This step requires that you select a category of classroom environment and identify social and academic situations in which it is used.

2. Collecting data. There are four types of data collection used in ethnographic research, namely, (a) watching or being part of a social context using participant and non-participant observation and noted in the form of on observer notes, logs, diaries, and so on, (b) asking open and closed questions that cover identified topics using semi-structured interviews, (c) asking open questions that enable a free development of conversation using unstructured interviews and (d) using collected material such as published and unpublished documents, photographs, papers, videos and assorted artefacts, letters, books or reports. The problem with such data is that the more you have, greater is the effort required to analyse. Moreover, as the study progresses, the amount of data increases making it more difficult and sharp to analyse the data. Yet more data leads to better codes, categories,
theories and conclusions. What is 'enough' data is subject to debate and may well be constrained by the time and resource the researcher has available. Deciding when and where to collect data can be a crucial decision. A profound analysis at one point may miss others, whilst a broad encounter may miss critical finer points. Several deep dives can be a useful method. Social data can be difficult to access due to ethics, confidentiality and determination necessary in such research. There is often less division of activity phases in qualitative research and the researcher may be memoing and coding as he proceeds with the study. The researcher usually uses theoretical and selective sampling for data collection.

3. Doing participant observation. Formulate open questions about the social situations under study. Malinowski opines that ethnographic research should begin with “foreshadowed problems”. These problems are questions that researchers bring to a study and to which they keep an open eye but to which they are not enslaved. Collect examples of the classroom environment. Select research tools/techniques. Spradley provides a matrix of questions about cultural space, objects, acts activities, events, time, actors, goals and feelings that researchers can use when just starting the study.

4. Making an ethnographic record. Write descriptions of classroom environment and the situations in which it is used.


6. Making domain analysis. Discover themes within the data and apply existing theories, if any, as applicable. Domain analysis requires the researcher to first choose one semantic relationship such as “causes” or “classes”. Second, you select a portion of your data and begin reading it and while doing so, fill out a domain analysis worksheet where you list all the terms that fit the semantic relationship you chose. Now formulate structural questions for each domain. Structural questions occur less frequently as compared to descriptive questions in normal conversation. Hence they require more framing. Types of structural questions include the following:

(i) **Verification and elicitation questions** such as (a) verification of hypotheses (Is the teacher-student relationship a conducive?), (b) domain verification (Are there different types of teacher-student relationships? What are the different types? (c) verification of included
terms (is teachers’ strike an illegal activity?) and (d) verification of semantic relationship (Is teaching beautiful?).

(ii) **Frame substitution.** This requires starting with a real sentence like "you get a lot of brickbats in administration". Then ask, can you think of any other terms that go in that sentence instead of brickbats? You get a lot of _____ in administration. (This can be done systematically by giving them list of terms to choose from).

(iii) **Card sorts.** Write phrases or words on cards. Then lay them out and ask the questions mentioned above. The researcher can ask which words are similar. Testing hypotheses about relations between domains and between domains and items. Like: "Are there different kinds of classroom climates?" If yes, it is a domain. Then ask "what kinds of classroom climates are there?" The final step in domain analysis is to make a list of all the hypothetical domains you have identified, the relationships in these domain and the structural questions that follow your analysis.

7. Making focussed observations.

8. Making a taxonomic analysis. Taxonomy is a scientific process of classifying things and arranging them in groups or a set of categories (domains) organised on a single semantic relationships. The researcher needs to test his taxonomies against data given by informants. Make comparisons of two or three symbols such as word, event, constructs.

9. Making selected observations.

10. Making a componential analysis which is a systematic search for the attributes or features of cultural symbols that distinguish them from others and give them meaning. The basic idea in componential analysis is that all items in a domain can be decomposed into combinations of semantic features which combine to give the item meaning.

11. Discovering cultural themes. A theme is a postulate or position, explicit or implicit, which is directly or indirectly approved and promoted in a society. Strategies of discovering cultural themes include (i) in-depth study of culture, (ii) making a cultural inventory, (iii) identifying and analysing
components of all domains, (iv) searching for common elements across all domains such as gender, age, SES groups etc., (v) identifying domains that clearly show a strong pattern of behaviour, (vi) making schema of cultural scene and (vii) identifying generic (etic) codes usually functional such as social conflict, inequality, cultural contradictions in the institutional social system, strategies of social control, managing interpersonal relations, acquiring status in the institution and outside, solving educational and administrative problems and so on.

12. Taking a cultural inventory.

13. Writing an ethnography

**Guidelines for Interviewing**

According to Patton, following are some useful guidelines that can be used for effective interviewing:

1. Throughout all phases of interviewing, from planning through data collection to analysis, keep centred on the purpose of the research endeavour. Let that purpose guide the interviewing process.

2. The fundamental principle of qualitative interviewing is to provide a framework within which respondents can express their own understandings in their own terms.

3. Understand the strengths and weaknesses of different types of interviews: the informal conversational interview; the interview guide approach; and the standardized open-ended interview.

4. Select the type of interview (or combination of types) that is most appropriate to the purposes of the research effort.

5. Understand the different kinds of information one can collect through interviews: behavioural data; opinions; feelings; knowledge; sensory data; and background information.

6. Think about and plan how these different kinds of questions can be most appropriately sequenced for each interview topic, including past, present, and future questions.

7. Ask truly open-ended questions.

8. Ask clear questions, using understandable and appropriate language.

9. Ask one question at a time.
10. Use probes and follow-up questions to solicit depth and detail.

11. Communicate clearly what information is desired, why that information is important, and let the interviewee know how the interview is progressing.

12. Listen attentively and respond appropriately to let the person know he or she is being heard.

13. Avoid leading questions.

14. Understand the difference between a depth interview and an interrogation. Qualitative evaluators conduct depth interviews; police investigators and tax auditors conduct interrogations.

15. Establish personal rapport and a sense of mutual interest.

16. Maintain neutrality toward the specific content of responses. You are there to collect information not to make judgments about that person.

17. Observe while interviewing. Be aware of and sensitive to how the person is affected by and responds to different questions.

18. Maintain control of the interview.

19. Tape record whenever possible to capture full and exact quotations for analysis and reporting.

20. Take notes to capture and highlight major points as the interview progresses.

21. As soon as possible after the interview check the recording for malfunctions; review notes for clarity; elaborate where necessary; and record observations.

22. Take whatever steps are appropriate and necessary to gather valid and reliable information.

23. Treat the person being interviewed with respect. Keep in mind that it is a privilege and responsibility to peer into another person's experience.

24. Practice interviewing. Develop your skills.

25. Enjoy interviewing. Take the time along the way to stop and "hear" the roses.

Writing Ethnographic Research Report
The components of an ethnographic research report should include the following:

1. Purpose / Goals / Questions.
2. Research Philosophy.
3. Conceptual/Theoretical Framework
4. Research Design / Model.
5. Setting/Circumstances.
7. Background and Experience of Researcher.
8. Role/s of Researcher.
10. Data Analysis/Interpretation.
11. Applications/Recommendations.
12. Presentation Format and Sequence.

**Advantages of Ethnography**

These are as follows:

1. It provides the researcher with a much more comprehensive perspective than other forms of research
2. It is also appropriate to behaviours that are best understood by observing them within their natural environment (dynamics)

**Disadvantages of Ethnography**

These are as follows:

1. It is highly dependent on the researcher’s observations and interpretations
2. There is no way to check the validity of the researcher’s conclusion, since numerical data is rarely provided
3. Observer bias is almost impossible to eliminate
4. Generalizations are almost non-existent since only a single situation is observed, leaving ambiguity in the study.
5. It is very time consuming.
Check Your Progress - IV

(a) State the characteristics of ethnographic research.

(b) Explain the steps of conducting ethnographic research.

5.6 CASE STUDY:

Case study research is descriptive research that involves describing and interpreting events, conditions, circumstances or situations that are occurring in the present. Case study seeks to engage with and report the complexities of social activity in order to represent the meanings that individual social actors bring to their social settings. It excels at bringing us to an understanding of a complex issue or object and can extend experience or add strength to what is already known through previous research. Case studies emphasize detailed contextual analysis of a limited number of events or conditions and their relationships. Darwin's theory of evolution was based, in essence, on case study research, not experimentation, for instance. In education, this is one of the most widely used qualitative approaches of research.

According to Odum, “The case study method is a technique by which individual factor whether it be an institution or just an episode in the life of an individual or a group is analyzed in its relationship to any other in the group.” Its distinguishing characteristic is that each respondent is (individual, family, classroom, institution, cultural group) is taken as a unit and the unitary nature of individual case is the focus of analysis. It seeks to engage with and report the complexity of social and/or educational
activity in order to represent the meanings that individual actors in the situation bring to that setting. It assumes that social and/or educational reality is created through social interactions, situated in specific contexts and histories and seeks to identify and describe followed by analysing and theorising. It assumes that things may not be as they seem and involve in-depth analysis so as to understand a ‘case’ rather than generalising to a larger population. It derives much of its philosophical underpinnings and methodology from ethnography, symbolic interactionism, ethnomethodology and phenomenology. It follows the ‘social constructivism’ perspective of social sciences.

Most case studies are usually qualitative in nature. Case study research excels at enabling us to understand a complex issue or object and can extend experience or add strength to what is already known through previous research. Case studies involve a detailed contextual analysis of a limited number of events or conditions and their relationships. Social scientists have made a wide use of this qualitative research method to examine contemporary real-life situations and provide the basis for the application of ideas and extension of methods. Yin defines the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.

However, some case studies can also be quantitative in nature especially if they deal with cost-effectiveness, cost-benefit analysis or institutional effectiveness. Many case studies have been done by combining the qualitative as well as the quantitative approaches in which initially the qualitative approach has been used and data have been collected using interviews and observations followed by the quantitative approach. The approach of case studies ranges from general field studies to interview of a single individual or group. A case study can be precisely focused on a topic or can include a broad view of life and society. For example, a case study can focus on the life of a single gifted student, his actions, behaviour, abilities and so on in his school or it can focus on the social life of an individual including his entire background, experiences, motivations and aspirations that influence his behaviour society. Examples of case studies include a ‘case’ of curriculum development, of innovative training, of disruptive behaviour, of an ineffective institution and so on.

Case studies can be conducted to develop a ‘research-based’ theory with which to analyse situations: a theory of, for and about
practice. It is essential to note that since most case studies focus on a single unit or small number of units, the findings cannot be generalised to larger populations. However, its utility cannot be underestimated. A case study is conducted with a fundamental assumption that though human behaviour is situation-specific and individualised, there is a predictable uniformity in basic human nature.

A case study can be conducted to explore, to describe or to explain a phenomenon. It could be a synchronic study in which data are collected at one point of time or it could be longitudinal in nature. It could be conducted at a single site or it could be multi-site. In other words, it is inherently a very flexible methodology.

A case typically refers to a person, either a learner, a teacher, an administrator or an entity, such as a school, a university, a classroom or a programme. In some policy-related research, the case could be a country. Case studies may be included in larger quantitative or qualitative studies to provide a concrete illustration of findings, or they may be conducted independently, either longitudinally or in a more restricted temporal period. Unlike ethnographic research, case studies do not necessarily focus on cultural aspects of a group or its members. Case study research may focus on a single case or multiple cases.

**Characteristics of a Case Study**

Following are the characteristics of a case study:

1. It is concerned with an **exhaustive** study of particular instances. A case is a particular instance of a phenomenon. In education, examples of phenomena include educational programmes, curricula, roles, events, interactions, policies, process, concept and so on. Its distinguishing feature is that each respondent (individual, class, institution or cultural group) is treated as a unit.

2. It emphasises the study of interrelationship between different attributes of a unit.

3. According to Cooley, case study deepens our perception and gives us a clear insight into life… It gets at behaviour directly and not by an indirect or abstract approach.

4. Each case study needs to have a clear **focus** which may include those aspects of the case on which the data collection and
analysis will concentrate. The focus of a study could be a specific topic, theme, proposition or a working hypothesis.

5. It focuses on the natural history of the unit under study and its interaction with the social world around it.

6. The progressive records of personal experience in a case study reveals the internal strivings, tensions and motivations that lead to specific behaviours or actions of individuals or the unit of analysis.

7. In order to ensure that the case study is intensive and in-depth, data are collected over a long period of time from a variety of sources including human and material and by using a variety of techniques such as interviews and observations and tools such as questionnaires, documents, artefacts, diaries and so on.

8. According to Smith, as cited by Merriam, (1998), these studies are different from other forms of qualitative of research in that they focus on a ‘single unit’ or a ‘bounded system’. A system is said to be a bounded system if it includes a finite or limited number of cases to interviewed or observed within a definite amount of time.

9. It may be defined as an in-depth study of one or more instances of a phenomenon- an individual, a group, an institution, a classroom or an event- with the objective of discovering meaning, investigating processes, gaining an insight and an understanding of an individual, group or phenomena within the context in such a way that it reflects the real life context of the participants involved in the phenomena. These individuals, groups, institutions, classrooms or events may represent the unit of analysis in a case study. For example, in a case study, the unit of analysis may be a classroom and the researcher may decide to investigate the events in three such classrooms.

10. According to Yin, case studies typically involve investigation of a phenomenon for which the boundaries between the phenomenon and its context are not clearly evident. These boundaries should be clearly clarified as part of the case study. He further emphasises the importance of conducting a case study in its real life context. In education, the classroom or the school is the real life context of a case study as the participants of such a case study are naturally found in these settings.

11. There are two major perspectives in a case study, namely, the etic perspective and the emic perspective. The etic perspective is that
of the researcher (i.e. the outsider’s perspective) whereas the emic perspective is that of the research participants including teachers, principals and students (i.e. the insider’s perspective). This enables the researcher to study the local, immediate meanings of social actions of the participants and to study how they view the social situation of the setting and the phenomenon under study. A comprehensive case study includes both the perspectives.

12. A case study can be a single-site study or a multi-site study.

13. Cases are selected on the basis of dimensions of a theory (pattern-matching) or on diversity on a dependent phenomenon (explanation-building).

14. No generalization is made to a population beyond cases similar to those studied.

15. Conclusions are phrased in terms of model elimination, not model validation. Numerous alternative theories may be consistent with data gathered from a case study.

16. Case study approaches have difficulty in terms of evaluation of low-probability causal paths in a model as any given case selected for study may fail to display such a path, even when it exists in the larger population of potential cases.

17. Acknowledging multiple realities in qualitative case studies, as is now commonly done, involves discerning the various perspectives of the researcher, the case/participant, and others, which may or may not converge.

**Components of a Case Study Design**

According to Yin, following are the five component elements of a case study design:

1. Study questions
2. Study propositions (if any are being used) or theoretical framework
3. Identification of the units of analysis
4. The logical linking of the data to the propositions (or theory)
5. The criteria for interpreting the findings.

The purpose of a case study is a detailed examination of a specific activity, event, institution, or person/s. The hypotheses or the research questions are stated broadly at the beginning at the study. A study’s questions are directed towards ‘how’ and ‘why’
considerations and enunciating and defining these are the first task of the researcher. The study’s propositions could be derived from these ‘how’ and ‘why’ questions. These propositions could help in developing a theoretical focus. However, all case studies may not have propositions. For instance, an exploratory case study may give only a purpose statement or criteria that could guide the research process. The unit of analysis defines what the case study is focussing on, whether an individual, a group, an institution, a city, a society, a nation and so on. Linkages between the data and the propositions (or theory) and the criteria for interpreting the findings are usually the least developed aspects of case studies (Yin, 1994).

Types of Case Study Designs

Yin (1994) and Winston (1997) have identified several types of case study designs. These are as follows:

(A) **Exploratory Case Study Design**: In this type of case study design, field work and data collection are carried out before determining the research questions. It examines a topic on which there is very little prior research. Such a study is a prelude to a large social scientific study. However, before conducting such an exploratory case study, its organisational framework is designed in advance so as to ensure its usefulness as a pilot study of a larger, more comprehensive research. The purpose of the exploratory study is to elaborate a concept, build up a model or advocate propositions.

(B) **Explanatory Case Study Design**: These are useful when providing explanation to phenomena under consideration. These explanations are patterns implying that one type of variation observed in a case study is systematically related to another variation. Such a pattern can be a relational pattern or a causal pattern depending on the conceptual framework of the study. In complex studies of organisations and communities, multivariate cases are included so as to examine a plurality of influences. Yin and Moore (1988) suggest the use of a pattern-matching technique in such a research wherein several pieces of information from the same case may be related to some theoretical proposition.

(C) **Descriptive Case Study Design**: A descriptive case study necessitates that the researcher present a descriptive theory which establishes the overall framework for the investigator to follow throughout the study. This type of case study requires formulation and identification of a practicable
theoretical framework before articulating research questions. It is also essential to determine the unit of analysis before beginning the research study. In this type of case study, the researcher attempts to portray a phenomenon and conceptualize it, including statements that recreate a situation and context as much as possible.

(D) **Evaluative Case Study Design** : Often, in responsive evaluation, quasi-legal evaluation and expertise-based evaluation, a case study is conducted to make judgments. This may include a deep account of the phenomenon being evaluated and identification of most important and relevant constructs, themes and patterns. Evaluative case studies can be conducted on educational programmes funded by the Government such as “Sarva Shiksha Abhiyan” or Orientation Programmes and Refresher Courses conducted by Academic Staff Colleges for college teachers or other such programmes organised by the State and Local Governments for secondary and primary school teachers.

**Steps of Conducting a Case Study**

Following are the steps of a case study:

1. Identifying a current topic which is of interest to the researcher.
2. Identifying research questions and developing hypotheses (if any).
3. Determining the unit of sampling and the number of units. Select the cases.
4. Identifying sources, tools and techniques of data collection. These could include interviews, observations, documentation, student records and school databases. Collect data in the field.
5. Evaluating and Analysing Data.

Each of these is described in detail in the following paragraphs.

**Step 1 : Identifying a current topic which is of interest to the researcher**

In order to identify a topic for case study research, the following questions need to be asked:

(i) What kind of topics can be addressed using the case study method?
(ii) How can a case study research be designed, shaped and scoped in order to answer the research question adequately?

(iii) How can the participation of individuals/institutions be obtained for the case study research?

(iv) How can case study data be obtained from case participants in an effective and efficient manner?

(v) How can rigour be established in the case study research report so that it is publishable in academic journals?

According to Maxwell, there are eight different factors that could influence the goals of a case study as follows:

1. To grasp the meanings that events, situations, experiences and actions have for participants in the study which is part of the reality that the researcher wants to understand.

2. To understand the particular context within which the participants are operating and its influence on their actions, in addition to the context in which one’s research participants are embedded. Qualitative researchers also take into account the contextual factors that influence the research itself.

3. To identify unanticipated phenomena and influences that emerge in the setting and to generate new grounded theories about such aspects.

4. To grasp the process by which events and actions take place that lead to particular outcomes.

5. To develop causal explanations based on process theory (which involves tracing the process by which specific aspects affect other aspects), rather than variance theory (which involves showing a relationship between two variables as in quantitative research).

6. To generate results and theories that are understandable and experientially credible, both to the participants in the study and to others.

7. To conduct summative evaluations designed to improve practice rather than merely to assess the value of a final programme or product.

8. To engage in collaborative and action research practitioners and research participants.
Step 2: Identifying research questions and developing hypotheses (if any)

The second step in case study research is to establish a research focal point by forming questions about the situation or problem to be studied and determining a purpose for the study. The research objective in a case study is often a programme, an entity, a person or a group of people. Each objective is likely to be connected to political, social, historical and personal issues providing extensive potential for questions and adding intricacy to the case study. The researcher attains the objective of the case study through an in-depth investigation using a variety of data gathering methods to generate substantiation that leads to understanding of the case and answers the research questions. Case study research is usually aimed at answering one or more questions which begin with "how" or "why." The questions are concerned with a limited number of events or conditions and their inter-relationships. In order to formulate research questions, literature review needs to be undertaken so as to establish what research has been previously conducted. This helps in refining the research questions and making them more insightful. The literature review, definition of the purpose of the case study and early determination of the significance of the study for potential audience for the final report direct how the study will be designed, conducted and publicly reported.

Step 3: Determining the unit of sampling and the number of units. Select the cases.

Sampling Strategies in a Case Study: In a case study design, purposeful sampling is done which has been defined by Patton as “selecting information-rich cases for study in-depth.” A case study research, purposeful sampling is preferred over probability sampling as they enhance the usefulness of the information acquired from small samples. Purposive samples are expected to be conversant and informative about the phenomenon under investigation.

A case study requires a plan for choosing sites and participants in order to start data collection. The plan is known as an ‘emergent design’ in which research decisions depend on preceding information. This necessitates purposive sampling, data collection and partial, simultaneous analysis of data as well as interactive rather than distinct sequential steps.

During the phase of designing a case study research, the researcher determines whether to use single or multiple real-life cases to examine in-depth and which instruments and data collection
techniques to use. When multiple cases are used, each case is treated as a single case. Each case/s conclusions can then be used as contributing information to the entire study, but each case remains a single case for collecting data and analysis. Exemplary case studies carefully select cases and carefully examine the choices available from among many research tools available so as to enhance the validity of the study. Careful selection helps in determining boundaries around the case. The researcher must determine whether to study ‘unique cases’, or ‘typical cases’. He also needs to decide whether to select cases from different geographical areas. It is necessary at this stage to keep in mind the goals of the study so as to identify and select relevant cases and evidence that will fulfil the goals of the study and answer the research questions raised. Selecting multiple or single cases is a key element, but a case study can include more than one unit of embedded analysis. For example, a case study may involve study of a single type of school (for example, Municipal School) and a school belonging to this type. This type of case study involves two levels of analysis and increases the complexity and amount of data to be gathered and analyzed. Multiple cases are often preferable to single cases, particularly when the cases may not be representative of the population from which they are drawn and when a range of behaviours/profiles, experiences, outcomes, or situations is desirable. However, including multiple cases limits the depth with which each case may be analyzed and also has implications for the structure and length of the final report.

**Step 4 : Identifying sources, tools and techniques of data collection**

**Sources of Data in a Case Study :** A case study method involves using multiple sources and techniques in the data collection process. The researcher determines in advance what evidence to collect and which techniques of data analysis to use so as to answer the research questions. Data collected is normally principally qualitative and soft data, but it may also be quantitative also. Data are collected from primary documents such as school records and databases, students’ records, transcripts and results, field notes, self-reports or think-aloud protocols and memoranda. Techniques used to collect data can include surveys, interviews, questionnaires, documentation review, observation and physical artefacts. These multiple tools and techniques of data collection add texture, depth, and multiple insights to an analysis and can enhance the validity or credibility of the results.
Case studies may make use of field notes and databases to categorize and reference data so that it is readily available for subsequent re-interpretation. Field notes record feelings and intuitive hunches, pose questions, and document the work in progress. They record testimonies, stories and illustrations which can be used in reporting the study. They may inform of impending preconceptions because of the detailed exposure of the client to special attention or give an early signal that a pattern is emerging. They assist in determining whether or not the investigation needs to be reformulated or redefined based on what is being observed. Field notes should be kept separate from the data being collected and stored for analysis.

According to Cohen and Manion, the researcher must use the chosen data collection tools and techniques systematically and properly in collecting the evidence. Observations and data collection settings may range from natural to artificial, with relatively unstructured to highly structured elicitation tasks and category systems depending on the purpose of the study and the disciplinary traditions associated with it.

Case studies necessitate that effective training programmes be developed for investigators, clear protocols and procedures be established in advance before starting the field work and conduct a pilot study in before moving into the field so as to eliminate apparent obstacles and problems. The researcher training programme need to cover the vital concepts of the study, terminology, processes and methods and need to teach researcher/s how to apply the techniques being used in the study accurately. The programme should also be aimed at training researcher/s to understand how the collection of data using multiple techniques strengthens the study by providing opportunities for triangulation during the analysis phase of the study. The programme should also include protocols for case study research including time deadlines, formats for narrative reporting and field notes, guidelines for collection of documents, and guidelines for field procedures to be used. Investigators need to be good listeners who can hear exactly the words being used by those interviewed. Qualities of effective investigators also include being able to ask good questions and interpret answers. Effective investigators not only review documents looking for facts but also read between the lines and pursue collaborative evidence elsewhere when that seems appropriate. Investigators need to be flexible in real-life situations and not feel threatened by unexpected change, missed appointments or lack of space. Investigators need to understand the goals of the study and comprehend the issues and
must be open to contrary findings. Investigators must also be aware that they are going into the world of real human beings who may be threatened or unsure of what the case study will bring.

After investigators are trained, the final advance preparation step is to select a site for pilot study and conduct a pilot test using all the data collection tools and techniques so that difficult and tricky areas can be uncovered and corrected. Researchers need to anticipate key problems and events, identify key people, prepare letters of introduction, establish rules for confidentiality, and actively seek opportunities to revisit and revise the research design in order to address and add to the original set of research questions.

Throughout the design phase, researchers must ensure that the construct validity, internal validity, external validity, and reliability of the tools and the research method are adequate. Construct validity requires the researcher to use the suitable measures for the concepts being studied. Internal validity (especially important in explanatory or causal studies) demonstrates that certain conditions/events (causes) lead to other conditions/events (effect/s) and necessitates the use of multiple sets of evidence from multiple sources to reveal convergent lines of inquiry. The researcher makes efforts to ascertain a series of substantiation forward and backward. External validity reflects whether findings are generalisable beyond the immediate case/s. The more variations in places, people and procedures a case study can withstand and still yield the same findings, the more will be its external validity. Techniques such as cross-case examination and within-case examination along with literature review help in ensuring external validity. Reliability refers to the stability, accuracy and precision of measurement. Exemplary case study design ensures that the procedures used are well documented and can be repeated with the same results over and over again. Establishing a trusting relationship with research participants, using multiple data collection procedures, obtaining sufficient pertinent background information about case participants and sites and having access to or contact with the case over a period of time are, in general, all decidedly advantageous.

Step 5: Evaluating and analysing data

The case study research generates a huge quantity of data from multiple sources. Hence systematic organisation of the data is essential in prevent the researcher from losing sight of the original research purpose and questions. Advance preparation assists in handling huge quantity of largely soft data in a documented and systematic manner. Researchers prepare databases for categorizing,
sorting, storing and retrieving data for analysis. The researcher examines raw data so as to find linkages between the research object and the outcomes with reference to the original research questions. Throughout the evaluation and analysis process, the researcher remains open to new opportunities and insights. The case study method, with its use of multiple data collection methods and analysis techniques, provides researchers with opportunities to triangulate data in order to strengthen the research findings and conclusions. According to Creswell, analysis of data in case study research usually involves an iterative, spiralling or cyclical process that proceeds from more general to more specific observations. According to Miles and Huberman, data analysis may commence during interviews or observations and continue during transcription, when recurring themes, patterns and categories become apparent. Once written records are available, analysis involves the coding of data and the identification of prominent points or structures. Having additional coders is highly desirable, especially in structural analyses of discourse, texts, syntactic structures or interaction patterns involving high-inference categories leading ultimately to the quantification of types of items within categories. Data reduction may include quantification or other means of data aggregation and reduction, including the use of data matrices, tables, and figures.

The strategies used in analysis require researchers to move beyond initial impressions to improve the likelihood of precise and consistent findings. Data need to be consciously sorted in many different ways to expose or create new insights and will deliberately look for contradictory data to disconfirm the analysis. Researchers categorize, tabulate and recombine data to answer the initial research questions and conduct cross-checking of facts and incongruities in accounts. Focused, short, repeated interviews may be essential to collect supplementary data to authenticate key observations or check a fact.

Precise techniques that could be used for data analysis include placing information into arrays, creating matrices of categories, creating flow charts or other displays and tabulating frequency of events. Researchers can use quantitative data to substantiate and support the qualitative data so as to comprehend the raison d'être or theory underlying relationships. Besides, multiple investigators could be used to gain the advantage provided when diverse perspectives and insights scrutinize the data and the patterns. When the multiple observations converge, reliability of the findings enhances. Inconsistent discernments, on the other hand, necessitate the researchers to inquire more intensely. Moreover, the cross-case
search for patterns, keeps investigators from reaching untimely conclusions by requiring that investigators look at the data in diverse ways. Cross-case analysis divides the data by type across all cases investigated. One researcher then examines the data of that type carefully. When a pattern from one data type is substantiated by the evidence from another, the result is stronger. When substantiation conflicts, deeper probing of the variation is necessary to identify the cause/s or source/s of conflict. In all cases, the researcher treats the evidence reasonably to construct analytic conclusions answering the original "how" and "why" research questions.

Step 6: Report writing

Case studies report the data in a way that transforms a multifarious issue into one that can be understood, permitting the reader to question and examine the study and reach an understanding independent of the researcher. The objective of the written report is to depict a multifaceted problem in a way that conveys an explicit experience to the reader. Case studies should present data in a way that leads the reader to apply the experience in his or her own real-life situation. Researchers need to pay exacting consideration to displaying adequate evidence to achieve the reader’s confidence that all avenues have been explored, clearly communicating the confines of the case and giving special attention to conflicting propositions.

In general, a research report in a case study should include the following aspects:

- A statement of the study's purpose and the theoretical context.
- The problem or issue being addressed.
- Central research questions.
- A detailed description of the case(s) and explanation of decisions related to sampling and selection.
- Context of the study and case history, where relevant. The research report should provide sufficient contextual information about the case, including relevant biographical and social information (depending on the focus), such as teaching-learning history, students’ and teachers’ background, years of studying/working in the institution, data collection site(s) or other relevant descriptive information pertaining to the case and situation.
- Issues of access to the site/participants and the relationship between you and the research participant (case).
The duration of the study.

Evidence that you obtained informed consent, that the participants' identities and privacy are protected, and, ideally, that participants benefited in some way from taking part in the study.

Methods of data collection and analysis, either manual or computer-based data management and analysis (see Weitzman & Miles, 1995), or other equipment and procedures used.

Findings, which may take the form of major emergent themes, developmental stages, or an in-depth discussion of each case in relation to the research questions; and illustrative quotations or excerpts and sufficient amounts of other data to establish the validity and credibility of the analysis and interpretations.

A discussion of factors that might have influenced the interpretation of data in undesired, unanticipated, or conflicting ways.

A consideration of the connection between the case study and larger theoretical and practical issues in the field is essential to report. The report could include a separate chapter handling each case separately or treating the case as a chronological recounting. Some researchers report the case study as a story. During the report preparation process, the researcher critically scrutinizes the report trying to identify ways of making it comprehensive and complete. The researcher could use representative audience groups to review and comment on the draft report. Based on the comments, the researcher could rewrite and revise the report. Some case study researchers suggest that the report review audience should include the participants of the study.

**Strengths of Case Study Method**

1. It involves detailed, holistic investigation of all aspects of the unit under study.
2. Case studies data are strong in reality.
3. It can utilise a wide range of measurement tools and techniques.
4. Data can be collected over a period of time and is contextual.
5. It enables the researcher to assess and document not just the empirical data but also how the subject or institution under study interacts with the larger social system.
6. Case study reports are often written in non-technical language and are therefore easily understood by laypersons.

7. They help in interpreting similar other cases.

**Weaknesses of Case Study Method**

1. The small sample size prevents the researcher from generalising to larger populations.

2. The case study method has been criticised for use of a small number of cases can offer no grounds for establishing reliability or generality of findings.

3. The intense exposure to study of the case biases the findings.

4. It has also been criticised as being useful only as an exploratory tool.

5. They are often not easy to cross-check.

Yet researchers continue to use the case study research method with success in carefully planned and crafted studies of real-life situations, issues, and problems.

**Check Your Progress - V**

(a) State the meaning of case study research.

(b) Explain the characteristics of case study research.

(c) Explain the steps of case study research.
5.7 ANALYTICAL METHOD:

It involves the identification and interpretation of data already existing in documents, pictures and artefacts. It is a form of research in which events, ideas, concepts or artefacts are examined through analysis of documents, records, recordings or other media. Here, contextual information is very essential to for an accurate interpretation of data. Historical research comprises of systematic collection and analysis of documents, records and artefacts with the objective of providing a description and interpretation of past events or persons. Its application lies in a range of research methods such as historical research which could use both quantitative and qualitative data, legal analysis which focuses on selected laws and court decisions with the objective of understanding how legal principles and precedents apply to educational practices, concept analysis which is carried out to understand the meaning and usage of educational concepts (eg. school-based reforms, ability grouping, affective teacher education) and content analysis which is carried out to understand the meaning and identify properties of large amounts of textual information in a systematic manner.

Characteristics of Analytical Research

Following are the characteristics of analytical research:

1. It does not ‘create’ or ‘generate’ data through research tools and techniques.
2. The topic of analytical research deals with the past.
3. It reinterprets existing data.
4. It predominantly uses primary sources for collecting data.
5. Internal and external criticism is used as a technique while searching for facts and providing interpretative explanations.
6. It uses documents, relics and oral testimonies for collecting data.

Objectives Analytical Research

Following are the objectives of analytical research:

1. It offers understanding of the past/existing/available data.
2. It enables the researcher to shed light on existing policies by interpreting the past.
3. It generates a sense of universal justification and underlying principles and aims of education in a society.
4. It reinterprets the past for each age group.
5. It uses data and logic to analyse the past and demythologises idealised conceptions of the past.

Check Your Progress - VI

(a) State the meaning of analytical research.

Suggested Readings


Creswell, J. W. Educational Research, Planning, Conducting, and Evaluating Quantitative and Qualitative Research, University of Netvaska: Merrill Prentice Hall, 2002,
