CHAPTER - IV

METHOD AND PROCEDURES
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4.1 Research Design:

The research design is the conceptual framework within which the research is conducted. It helps the researcher to carry on his research operation to solve a research problem with maximum wastage of effort, time and money. A research design can be compared to a blue-print that an architect prepares before starting of a construction.91

For the present study the investigator has to develop a research design, which contains the following steps:

(i) Formulating the objectives to the study.
(ii) Writing Hypothesis.
(iii) Designing the method of data collection.
(iv) Selecting the sample.
(v) Collecting data,
(vi) Processing and analysing the data.
(vii) Reporting the findings.
(viii) Conclusion, and
(ix) Suggestion for further research in the particular area.

The whole work is divided into five stages.

The first stage is a good deal of library work to study different literature related to the problem under study. The objectives of the study are formulated and hypotheses are stated.

In the second stage the method for the study is selected, sample is drawn by appropriate technique and procedure for collection of data are finalised and appropriate tools are developed.

The third stage is the fieldwork to collect data both, primary and secondary.

Forth stage is the processing of data. Tabulation and analysis of data are done and findings are interpreted. Statistical Techniques are used to verify the findings.

Finally the study has been reported in the fifth stage of work

4.2 METHODS USED IN THE STUDY:

Educational Research can be classified into three broad categories, i.e.

(i) Historical Research,

(ii) Descriptive Research and

(iii) Experimental Research.

All studies come under one or combination of these types of Research.

"Historical research describes ‘What was’, Descriptive research describes ‘What is’ and Experimental research describe ‘What will be’. 92

92 Best, W.J. Research in Education (Prestice-Hall of India (Pvt) Ltd., New Delhi, 1963)P-12
Historical methods can tell us much about what existed in the past by determining, evaluating and understanding past events, descriptive methods can tell us about what exists at present by determining the nature and degree of existing conditions. Because of the methods apparent ease and directness, descriptive methods has undoubtly been the most popular and most widely used research methods in education.

Descriptive research studies are designed to obtain pertinent and precise information concerning the current status of phenomena and whenever possible, to draw valid general conclusions from the facts discovered. They are restricted not only to fact finding but may often result in the formulation of important principles of knowledge and solution of significant problems concerning local, State, national and international issues. Descriptive studies are more than just a collection of data; they involve measurement, classification, analysis, comparison and interpretation. They collect and provide three types of information:

1. of what exists with respect to variables or conditions in a situation.
2. of what we want by identifying standards or norms with which to compare the present conditions or what experts consider to be desirable, and
3. of how to achieve goals by exploring possible ways and means on the basis of the experience of others or the opinions of experts.  

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93 Koul Lokesh, Methodology of educational Research, (Vikas Publishing House Pvt. Ltd New Delhi-14, 1998) P-431-432
Descriptive studies investigate phenomena in their natural setting. Their purpose is both, immediate and long range.

**Descriptive studies may be classified in the following three categories:**

(i) **Survey Studies:** (a) School surveys, (b) Job analysis, (c) Public opinion surveys, and (d) Social surveys.

(ii) **Inter-relationship Studies:** (a) Case Study, (b) Casual-comparative studies, (c) Correlation and prediction studies, and (d) Cross cultural and comparative studies.

(iii) **Development studies:** (a) growth studies, (b) follow-up studies, and (c) trend studies.\(^94\)

**Descriptive studies may be classified in these ways too:**

(i) Surveys.

(ii) Case studies.

(iii) Development studies.

(iv) Community studies.

(v) Casual comparative studies.

(vi) Follow up studies.

(vii) Content or documentary analysis, etc.\(^95\)

Descriptive survey method is also called 'normative survey'. The compound adjective ‘normative–survey’ is applied to this method which suggests two aspects of

\(^{94}\) Ibid, P - 434 - 456

\(^{95}\) Best, op. cit. P-106 -108
the study. The word 'survey' indicates the gathering of the data of the current condition. The word 'normative' is used because the surveys are done frequently to ascertain the normal or typical conditions or practice.\textsuperscript{96}

The investigator has selected the survey studies method for the present study. He thinks it appropriate for his study, so normative survey method has been employed and data are collected by interviews, schedules, questionnaires, observations and surveys, which will help to collect real facts of the conditions prevailing in present situation and is expected to give the real picture of the position of Distance Education system in Assam, and its strong and weak points too. Which may decide the status of distance education system in Assam.

4.2. Sampling Design:

In surveys data may be gathered from entire population. Population or universe means all the items under consideration in any field of inquiry. Some population are so large that their study would be expensive in terms of time, money, effort, and manpower. In most cases a group from the population is selected generally to be representative of the total population. This group is known as sample.

Sampling is the process by which a relatively small number of individuals or measures of individuals, objects, or events is selected and analysed in order to find out something about the entire population from which it was selected. It helps to reduce expenditure, saves time and energy, permits measurement of great scope, or

produces greater precision and accuracy. Sampling procedure provides
generalizations on the basis of a relatively small proportion of the population.

The representative proportion of the population is called a sample. To obtain
a representative sample, the researcher selects each unit in a specified way under
controlled conditions. Usually four steps are involved in the process:

(i) Defining the population,
(ii) Listing the population.
(iii) Selecting a representative sample,
(iv) Obtaining an adequate sample.\textsuperscript{97}

A population refers to any collection of specified group of human beings or
of non-human entities such as objects, educational institutions, time units,
geographical areas, prices of wheat or salaries drawn by individuals etc. Some
statisticians call it universe.

A sample design is a definite plan for obtaining a sample, from a given
population. It is the procedure adopted in selecting the items for the sample. Sample
designing are basically of two types:

i) Non-probability sampling, and

ii) Probability sampling.\textsuperscript{98}

i) \textbf{Non-probability sampling}: In non-probability sampling, the units are selected at
the discretion of the researcher. Such samples use human judgement in selecting

\textsuperscript{97} Koul, Op. cit P-111.
\textsuperscript{98} Kothari, C.R. \textit{Research Methodology, Methods and Techniques} (Wiley Eastern Limited, New Delhi, 1986) P-82.
units and have no theoretical basis for estimating population characteristics. Non-probability is also known by different names such as judgement for purposive sample, Quota or chunk sample, incidental or volunteer sample, and deliberate sampling.

**ii) Probability sampling:** In Probability sampling, the units of the population are not selected at the discretion of the researchers, but by means of certain procedure which ensure that every unit of a population has one fixed probability of being included in the sample. Such sampling is also known as “Random Sampling” or “Chance Sampling” is the sampling procedure, where every item of the universe has an equal chance of inclusion in the sample.

The investigator has adopted purposive sampling in selecting the study centres of IGNOU, Guwahati Regional Centre, PGCS, GU and random sampling method is adopted to select the students.

**4.3.1 The Universe of the Study:**

The universe or the population of the study is the Distance Teaching institutions/universities of Assam. As there are IGNOU is working at national level university in the State, which had its Regional Centre in Guwahati and covers the whole Assam region with this single Regional Centre with the help of its study centres and other one is Postgraduate correspondence school (PGCS) of Guwahati University is functioning at State level institute under Gauhati University. These two institutions are functioning at the tertiary level. As this study is restricted to tertiary level and thus school level is not considered for this study.
IGNOU has one Regional Centre in Assam, i.e. Guwahati-Region Centre, which covers full Assam region with the help of different study centres, special study centres, programme centres and partner study centres established in different parts of Assam State.

There are total 11 study centres, 07 special study centres, 01 partner study centre, 03 programme centres, and 02 work centres in Assam.

The PGCS. GU is also the part of the population. So, the unit of the population is taken as student of these distance-teaching institutes. The selection of students as the units of population is expected to give a more representative sample for the present study.

So, the universe of this study is the student of IGNOU. Guwahati Regional Centre and PGCS. GU on roll.

4.3.2 The Sample:

Judgement and Stratified random sampling technique is adopted for selection of the sample. The sample of study is selected from the universe of study, i.e. IGNOU. Guwahati Regional Centre and PGCS. G.U. Guwahati. One is National Open University and other is State University. The list of all the study centres available in Assam under IGNOU. Guwahati Regional Centre is collected from the IGNOU. Guwahati Regional Centre. There are total 24 study centres including all special study centres, programme study centre, partner study centres and work centres under Assam region as on January, 2001.
Students from both distance-teaching institutions are divided into two strata according to their management of the distance teaching institutions. Because one is having a Central Government Management and other is the State Government Management. The reason behind taking management as a variable is the fact facilities vary with the management of the Distance teaching institution. Now, there are two strata available with us:

Stratum - I  “IGNOU Study Centre” in Assam region.

Stratum - II  “PGCS, GU”.

In Stratum - I IGNOU, study centres come. We have total 24 study centre, special study counter, partner study centres, programme centres and work centres. Out of these 24 study centres of different nature, only 11 study centres are there which have multi programmes and courses; and which were established initially with the interval of time and requirements. And there are 07 special study centres, which are established recently in Oct 2000 only and 03 programme centres are established for specific programmes. like programme centre. PG DMGH, Guwahati is for PGDMCH programme, ‘programme centre’. Jorhat is for B.Sc programme and programme centre Banikanta College of Teacher education is for B.Ed programme. 01 Partner institute. NERIM is working with the partnership with NERIM. Parukutty Bhavan, Nabin Nagar, Zoo Road, Guwahati and two work centres are there, one is work centre Regional College of Nursing, Guwahati and other is work centre Assam Engineering College Guwahati.
So, the investigator is choosing samples from 11 study centres of IGNOU, Guwahati Regional Centres. Out of these 11 study centres, investigator selects only 04 study centres with his judgement, as these 04 study centres were established initially with few years time gap and they have completed their 9 - 14 years of successful functioning. The study centres selected for study as sample are well spread all over the Assam. These four study centres are as following:

<table>
<thead>
<tr>
<th>Study Centre Code</th>
<th>Name of study centre</th>
<th>Date of establishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 401</td>
<td>Gauhati University, Guwahati</td>
<td>18-12-1986</td>
</tr>
<tr>
<td>2. 402</td>
<td>DKD College, Dergoan, Assam</td>
<td>30-03-1989</td>
</tr>
<tr>
<td>3. 403</td>
<td>Women's College, Tinsuki, Assam</td>
<td>18-12-1990</td>
</tr>
<tr>
<td>4. 404</td>
<td>Birjhora Mahabidyalaya, Bongaigaon</td>
<td>15-01-1992</td>
</tr>
</tbody>
</table>

For study purpose, further sample is selected from these four study centres, as total ten percent students from the total students on role in the year 2001 of all courses/programmes.

**In Stratum - II,** the PGCS, GU is there; from this also total ten percent of the students from the total students are selected from Previous and Final year of session 2001 on roll.
The Table given below gives the full details of the selected samples.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Study Centre Code</th>
<th>Name of IGNOU study centre/PGCS, GU Students on Roll (2001)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stratum-I 1</td>
<td>401</td>
<td>Gauhati University, Guwahati</td>
</tr>
<tr>
<td>2</td>
<td>402</td>
<td>DKD College, Dergoan, Assam</td>
</tr>
<tr>
<td>3</td>
<td>403</td>
<td>Women's College, Tinsukia, Assam</td>
</tr>
<tr>
<td>4</td>
<td>404</td>
<td>Birjhora Mahabidyalaya, Bongaigaon</td>
</tr>
</tbody>
</table>

| Stratum - II 1 | PGCS, Gauhati University | 1,891 |

**Total number of students** 4391

The 10% of 4391 students is taken as sample, 439 students for study are chosen by the random sampling. So, 439 students are included in the sample for conducting the study.

### 4.4 Procedure for Data — collecting:

Primary data are collected with the help of information sheets, interview methods, questionnaires, opinionnaire and check lists. Secondary data are collected from different sources like census report, directorate of education State Government; Ministry of Human Resources and Development, visiting Libraries of NCERT, Library of Guwahati University, NEPA, HQ IGNOU New Delhi, IGNOU library, ICSE library, AIU library, World Bank library, British council library, UNESCO library, UGC library, IGNOU Regional Centre Shillong, Centre for distance
education, NEHU Shillong, IGNOU Regional Centre Guwahati, PGCS, GU and also by visiting a number of government and other offices in concert of present study.

4.3.1 Data Gathering Technique (Tools):

The major data-gathering tools of research may be classified broadly into the following categories:

i) Psychological Tests,
ii) Inquiry Forms,
iii) Observation,
iv) Interview.

v) Socio metric Techniques.

4.4.1.1 Inquiry Forms:

Inquiry forms are a set of data-gathering, research tools which made use of properly designed Performa for inquiring into and securing information about certain phenomena under investigation. Tools included in this category are: Questionnaire, Schedules (Interview), Checklist, Rating Scale, Score card and Opinionnaire or Attitude scale.

For this study, under Inquire forms are

i) Questionnaire,
ii) Interview Schedule,
iii) Checklist, and

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99 Koul, op. cit. P-126
iv) Personal interaction with the students and staff of study centres may be used.

A questionnaire is a device consisting of a series of questions dealing with some psychological, social, educational etc. topic(s) sent or given to an individual or a group of individuals, with the object of obtaining data with regard to some problems under investigation.

When the form is filled up in the presence of the questioner it is referred to as a schedule and when it is mailed to the respondent to get the answers, it is referred to as a questionnaire. When the purpose of the questions is to know the opinion of the respondent in that case it is known as opinionnaire or attitude scale.

In both schedule and questionnaire there are a number of questions printed or typed to collect data. The questions may be structured or unstructured. Structured questionnaires are those questionnaires in which there are definite, concrete and predetermined questions. The form of the questions may be closed or restricted type and open or unrestricted type. When the responses are wanted in a list of suggested responses, it is known as closed or restricted type of questionnaire calls for a free response in the respondent's own word. Though structured closed type questionnaire is easy to fill out and also easy to tabulate and analyse, to search new facts open, unrestricted questionnaire is more useful.\footnote{Best, op. cit. P-142}
A checklist is a simple device consisting of a prepared list of items, which are thought by the researcher to be relevant to the problem being studied. After each item a space is provided for the observer to indicate the pressure or absence of the item by checking ‘Yes’ or ‘No’, or a type or number of items may be indicated, by inserting the appropriate word or number. A check-list draws the attention of the observer to relevant factors and enables him to record the data quickly and systemically.\textsuperscript{101}

4.4.1.2. \textbf{Observation Method:}

Observation is the process in which one or more persons observe what is occurring in some real life situation, and they classify and record pertinent happenings according to some planned scheme. It is used to evaluate the overt behaviour of individuals in controlled and uncontrolled situations.\textsuperscript{102}

Observation is an important method for gathering data in descriptive research. The element of restriction imposed in questionnaire or interview are missing in observation method. It naturally records the behaviour of the individuals as shown by them.

4.4.1.3 \textbf{Interview Schedule:}

The interview is a process of communication or interaction in which the subject or interviewee gives the needed information verbally in a face-to-face situation. Although the interview is generally associated with counselling or

\textsuperscript{101} Koul, op. cit. P-155
\textsuperscript{102} Ibid, P-170
psychotherapy, it can be used effectively to collect useful information about individuals in many research situations.\textsuperscript{103}

After the interviewer established a friendly relationship with the interviewee, it is possible to bring out some confidential information also, the information that is difficult to obtain in written form. In interview, interviewer can acquire many information from the incidental comments of the interviewee, facial and bodily expressions, tune of voice, gesture, reactions etc, that would not be conveyed in any other way.

Interviews may be classified according to the purpose for which they are used and according to their design or structure, as Research Interview, Clinical Interview and Individual Interview etc.

For the purpose of research, interview may be used as a tool for gathering data required by the researcher to test hypothesis or solve his problems of historical, experimental, survey or clinical type of research. This type of interview is called "Research Interview."\textsuperscript{104}

4.4.2 Techniques or Tools used for Data Collection in the Present Study:

i) Questionnaire,

ii) Interview Schedule,

iii) Checklist, and

iv) Personal interaction with the students and staff

\textsuperscript{103} Ibid, P-175
\textsuperscript{104} Ibid, P-175 &176.
are used in the present study for collection of data. In this interview schedules and observation method is used which will help to extract the information from individuals.

Data regarding students (Distance Learner) are collected through questionnaire, schedules and personal interaction with students by the investigator.

For several advantages interview technique is used widely in the study. In the course of the study many people are interviewed such as Regional Director (R.D.), Assistant Regional Directors (A.R.D.) of Guwahati Regional Centre, Coordinators of different study centres, the Director of the PGCS, G.U, counsellors and Office staff of IGNOU and PGCS, GU. Because direct, method of gathering data makes the study intensive and expected to give a more accurate result. And checklist are also used for gathering the data from different study centres and institutes like PGCS, GU and Guwahati Regional Centre, for checking of library, laboratory, study centre building, study materials, instructional procedures staffing and financial items etc. Which will help investigator to generalise the results in a meaningful way.

4.4.3. Tools used for Data collections and Administration of the Tools:

Following tools have been developed to use in collection of Data.

i) **Questionnaire** (Appendix-I)

This questionnaire is prepared to collect data from distance learners (Students) of different institutions like IGNOU AND PGCS, GU. It includes questions regarding multimedia used in distance teaching, study material, library facilities, PCP, examination system, assignment and counselling etc. to find out the
strong and weak points of distance teaching institutions. Also to know the attitude of
distance learners towards distance education and formal education.

ii) **Inquiry Form:**

There is a general information on the top of questionnaire itself, which is
acting as inquiry form. This contains the general information about the background
of distance learner and general information about distance learner.

iii) **Interview Schedule for the R.D./A.R.D. of IGNOU Regional Centre**

*coordinate and counsellors of study centres and Director of PGCS,*

*G.U. Counsellors and other staff:* (Appendix-II to V):

R.D./A.R.D., coordinator, Director, counsellors and staff of different distance
teaching institutes were interviewed with these schedules. Questions related to
Distance education, staff, facilities, problems, future schemes on institutions and
about distance learner’s activities and behaviour were asked. In the present
investigation, in all the schedules both structured and unstructured interview
schedules were included.

iv) **Checklist (Appendix-VI):**

A checklist is used to gather the data regarding Distance Education institutions,
Building, staffing, finance, library, study materials, PCP, counselling and tutors etc.

**4.5 TREATMENT OF DATA:**

Present investigation is using both qualitative and quantitative methods.
Therefore, both qualitative and quantitative data are gathered for the study. Data
collected to find the status of distance education is quantitative but in investigation of

106 Ibid, P-277

the causes the data are qualitative. The qualitative data are also analysed by quantitative method.

4.5.1 METHOD OF COMPUTING TO FIND OUT THE STATUS OF DISTANCE EDUCATION:

The investigator has used Questionnaire, check list and interview schedules for collecting the data. In the technique, quantification of data obtained is generally achieved through tabulation and counting. Presentation of results in tabular form, in totals, percentages or averages is invariably required. The data are expressed quantitatively on the basis of the number of persons whose replies are tabulated under the several categories of the questions. The interpretation of the data analysed and the formulation of conclusions should take into consideration the percentage of responses secured.105

4.5.2 METHOD FOLLOWED IN THE PRESENT STUDY:

Present investigation is using the Rank, Percentage or Rate and Mean or Average to find out the status of distance education.

4.5.2.1 Rank:

A rank is merely the relative position, which any particular case occupies in a group. Often it is of more significance than the measurement itself, for it contains a strong comparative element. For example, we are more concerned with the fact that a certain pupil is at the top of his class, than we are in knowing his particular score.106
4.5.2.2 Percentage:

Percentage is essentially the rank that one would have in a group of hundred.

**Percentage or Rate is calculated as:**

\[
\text{Percentage} = \frac{\text{Number of particular type of students of a group}}{\text{Total number of students of a group}} \times 100
\]

\[
= \frac{S}{N} \times 100
\]

where ‘S’ is the number of particular type or selective students of a group and ‘N’ is the number of total students of a group.

4.5.2.3 Measures of Central Tendency or Averages:

The three most commonly used measures of central tendency are the Mean, the Median and the Mode. The most common is the Mean, out of Mean, Median and Mode.

**The Mean (M):**

The mean is mathematically the most significant average and is used most extensively in advanced statistical analysis. The mean of a distribution is commonly understood as the arithmetic average.

The mean is a set of observation or scores is obtained by dividing the sum of all the values by the total number or values.
Mean for Ungrouped Data:

The formula for finding the mean for ungrouped data is:

\[ M = \frac{\sum X}{N} \]

in which

- \( M \) = Mean
- \( \sum \) = Sum of
- \( X \) = Scores in a distribution
- \( N \) = Total Number of scores

4.5.3 Various line graphs, bar or histogram, and frequency polygons are also used in representing the various findings. These representations give the self-explanatory picture of collected data. Graphs sum up and give results of collected data at a glance.

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\(^{107}\) Kaul, op. cit. P-237