Chapter 3

METHODS AND PROCEDURE

3.0 Introduction
3.1 Procedure of tools Construction
3.2 Description of tools.
3.3 Population and Sample
3.4 Sample Profile.
METHODS AND PROCEDURE

3.0 INTRODUCTION

The study has adopted future study methods. This study visualizes future's expansion of the system towards 2010 and looks for exploring suitable alternatives in the teacher education programme at primary school stage. The methods employed in the study are trend extrapolation, opinion studies and study of reaction of participants and experts towards the system. This chapter deals with methods and procedures adopted in the study. It has included multifold technique for achieving the objectives. The methods and procedures followed in attainment of objectives are mentioned under the following heads:

A- Objectives
B- Nature of data
C- Source of data
D- Tools construction
E- Population and sample
F- Data collection procedures
G- Analysis procedures

A- OBJECTIVES-I

The forecast strength of teachers in primary schools of selected different districts of Uttar Pradesh in Bundelkhand region towards, 2010A.D. The main object of the research has expressed to correlate competency and to established new procedures for exploring new objects.
B- Nature Of Data


In the field of primary education considerable reforms and changes have been introduce as a result of researches in the methods of teaching and the influence of psychological experiment.

C- Sources of data

The sources of data are the records and the publications of Bureau of statistics, Uttar Pradesh, District Inspector of schools, Circle Inspector of school, District Statitical Office, Jhansi, Jalaun, Lalitpur and Hamirpur, District primary Educational programme (DPEP) survey report of 2005 and state welfare department. In the schools of various district the daily timing of the schools from begining to ending so every primary school in Bundelkhand region is free to have it own shedule. Educational system both the traditional and the new ones, exist side by side.
D- **Tools**

A proforma was prepared to collect the data on the following dimensions

A- Year wise strength of primary school teachers,
B- Year wise population 6 to 11 age group,
C- Year wise growth of primary schools,
D- Year wise expansion of student enrolment,

E- **Population**

Whole population of Primary teachers, students, schools and population 6 to 11 age group of all four district in Uttar Pradesh districts namely Jhansi, Jalaun, Lalitpur and Hamirpur constituted the population of the study. The object of primary education in Bundelkhand region is to trand the child in all such activities as are needed to make his future life successful.

F- **Data collection procedures**

Data collection was made personally by visiting Bureau of Statistics, Lucknow, District Statistics Office, Jhansi, Jalaun, Lalitpur and Hamirpur, District Inspector of schools of four districts three times. The investigator collected the information about the year wise teacher strength of primary schools, population 6 to 11 age group number of schools, enrolment of students, school teacher ratio, teacher student ratio, school student ratio since 1990-91 to 1999-2005. Data was collected through scrutiny official records and publications related to the objective-I.
G- Analysis of data

Trend extrapolation method was used considering the nature of objectives like expansion of teachers, trend of growth of population, trend of expansion of schools, trend of expansion of students, in primary Schools of four districts of Uttar Pradesh districts of towards 2010 AD was calculated by least Square method. On the basis of base line data from the year 1990-91 to 1999-2005, the trend expansion of all the above aspects were done. Least square method has been used for trend analysis. The formula of least square method is given below:

\[ Y = a + bx \]

Where in

\[ Y = \text{Frequency} \]
\[ a = \text{Sum of } y \text{ frequencies and divided by number of years.} \]
\[ b = \text{Exy and divided by Ex}^2 \]
\[ X = \text{Time variable} \]

Above equation was used for calculation of the future trend of expansion of teachers, population, schools students towards 2010 A.D.

A- Objective-II

To explore the present and future needs for in-service education of primary school teachers of four districts of Uttar Pradesh in Bundelkhand region with special reference to teacher competencies. Considerable stress is laid on moral teaching in primary and superior primary school in Bundelkhand region suitable punishment have also been provided for enforcing codes of the disipline and courtesy but corporial punishment is prohibited.
B- Nature of data

Opinion of in-service primary schools teachers, Headmasters, Headmistress Education administrators, Inspectors of school, DIETs teachers and experts who worked as a resource persons in the field of in-service education.

C- Sources of data

Primary school teachers, Headmasters, Headmistress DIETs teachers and training institute, Lucknow. DPEP primary research cell and Director of State Educational Research and Training were treated as sources of data.

D- Two questionnaires were developed by the investigator for this objectives -

A- Questionnaire for primary schools teachers on training needs of our districts of Uttar Pradesh in Bundelkhand region

B- Questionnaire for experts on training needs of primary school teachers in four district of Uttar Pradesh in Bundelkhand region.

C- Observation schedule of teacher competencies

3.1 Procedure of Tools Construction:

The Brain storming session were conducted in Jhansi (U.P.) 25experts and 72 teachers who have been working in the areas of Primary Schools in different districts participated in such session. Brain storm is effective in allowing groups of individuals as a whole, to deal with a complex problem, especially related to competencies of Primary school teachers. The ideas were generated and content analysis was
done to identify the core items. The competencies which were not related to the topic were removed from the items list. After this work the questionnaire was developed comprising the questions for training needs assessment of in-service teacher in different districts of Uttar Pradesh in Bundelkhand region. The content validity of questionnaire was ascertained on the basis of experts were mainly from the District Institute of Education and Training, Jhansi, Uttar Pradesh, Retired Primary school Headmaster in Jalaun, District. Lectures in Education of B.K.D. college, Jhansi District. Lecturers of B.ED Training College, Orai,(Jalaun). The tools were checked and translated into Hindi and English, by the experts of both the languages.

3.2 Description of tools:

The questionnaire and observation checklist is developed by the Scholar himself. The main features of these tools are discussed further.

A- Questionnaires for experts on training needs of primary school teachers.

B- Questionnaire for school teachers on training needs of primary school teachers.

For preparation of these tools researcher took the help of NCERT project “identification of essential competencies for primary teachers” conducted by Bhat et. al (1998) in Regional Institute of Education (Allahabad). After a care full and ideas gathered through brain storming sessions researcher develop the questionnaire for
competence of these report, related studies each of these questionnaires contains two parts which is given further:

A- Background information about experts and teachers: This part contains name, Sex, Designation, Qualification, school, In-service training attend, Teaching experience.

B- Three point perception scale on existing competencies, Present training needs and further training needs respectively. This part contains 62 items under 12 categories. Each category is described as follows.

Category-I : Preparation for Instruction

A- Plan lesson
B- Identify student learning needs
C- Summarize the lesson
D- Assign home work

Category-II : Development, Preparation and utilization of Instructional Material

A- Prepare teaching aids
B- Utilize text book and manual
C- Utilize black board
D- Utilize teaching aids
E- Demonstrate experiment
F- Utilize community resource
G- Develop learning activities
H- Operate hardware
I- Analysis text book
Category- III : Motivation of children
A- Motivate the student
B- Establish rapport with primary student
C- Manage class room decipline
D- Conduct cultural activities.
E- Motivate student of higher age group

Category- IV : Communication in class room
A- Utilize the techniques of teaching
B- Provide effective feed back
C- Conduct dramatization
D- Recite a poem
E- Narrate a story
F- Conduct role play
G- Undertake multi grade teaching

Category- V : Methods of Instruction
A- Provide experience-based teaching
B- Conduct oral drill exercise
C- Adopt play way method
D- Adopt attainment approach
E- Adopt project method
F- Adopt guided discovery method
G- Adopt inductive deductive method
H- Adopt problem solving method
I- Adopt method to develop creativity
J- Adopt self instructional techniques
K- Adopt group discussion method
L- Implement new educational ideas
M- Organize competency based teachings
N- Device and adopt innovative ideas in teaching

Category- VI : Evaluation of learning
A- Construct appropriate evaluation tools
B- Conduct continuous and comprehensive education
C- Assess student condition
D- Organize Curative instruction
E- Diagnose students learning difficulties

Category- VII : Diagnose and Remediation
A- Conduct follow up activities
B- Organize and conduct guidance activities

Category- VIII : Class-room Management
A- Manage the learning environment

Category- IX : Co-curricular Activities
A- Arrange outdoor activities
B- Conduct sports and games
C- Utilize the community resource

Category- X : Community Participation
A- Establish rapport with parents.
B- Participation of social and cultural activities
Category - XI : Social Education
A- Provided educational assistance for children
B- Cater to mixed ability groups

Category - XII : Institutional planning
A- Develop institutional planning
B- Maintain records
C- Work in team spirit
D- Establish rapport with staff
E- Undertake self evaluation
F- Conduct action research
G- Assist in conducting survey

Open space was also provided for seeking responses of respondent which were not covered in close format of questions

Observation check list : The researcher used an observation scale for observation of teacher competencies exhibited in class room and outside classroom situations. The observation scheduled included those items already stated under different categories of competencies of 1st questionnaire. The scale had five points alternatives, The scale content validity was checked by the experts.

3.3 Population and Sample

The population of the study included all the full time trained and untrained primary school teachers in four different districts in Bundelkhand region namely Jhansi, Jalaun, Lalitpur and Hamirpur of Uttar Pradesh Who had under gone in-service education programme.
DIETs teacher and all the resource persons of in-service education programme of Uttar Pradesh. The sample of the present study included Primary schools teachers, DIETs teachers and experts in Uttar Pradesh. Random Sample technique was used for selecting the samples. The district wise break of sampling frame read as follows.

A- All the Primary Schools teacher of Jhansi district constituted the population of the study.

For sampling the researcher made a list of 300 teachers from 5 blocks of Jhansi district from Directorate records. The researcher had attended the 8 center meetings of primary school teachers and individually distributed the questionnaires who had attended the in-service training programme in DIET. Out of these 100 respondents returned the questionnaires with a breakup of from Jhansi block, 35 from Chirgoan, block, 40 from Gursarai, block and 34 from Moth block. These respondents constituted the sample of the study from Jhansi district.

B- All the primary schools teachers of Jalaun district constituted the population of the study

For sampling, the researcher made a list of 350 teachers from 5 blocks of Jalaun district from official records. The researcher had attended the 8 center meetings of primary schools teachers and individually distributed the questionnaires who had attended the in-service training programme in DIET. Out of them 100 block, 28 from Rampur, block, 21 from Nadigoan block and 14 from Kadora block.
These respondents constituted the sample of the study from Jalaun district.

C- **All the primary schools teachers of Lalitpur district constituted the population of the study**

For sampling, researcher made a list of 400 teachers from 4 blocks of Lalitpur district from official records. The researcher had attended the 8 center meetings of primary schools teachers and individually distributed the questionnaires who had attended the in-service training programme in DIET. Out of them 100 respondents returned the questionnaires and with a breakup of 37 from Talbehat block, 28 from Mehroni, block, 21 from Jakhlon block and 14 from Madawara block. These respondents constituted the sample of the study from Lalitpur District.

D- **All the primary schools teachers of Hamirpur district constituted the population of the study**

For sampling, researcher made a list of 400 teachers from 4 blocks of Hamirpur district from official records. The researcher had attended 8 center meetings of primary school teachers and individually distributed the questionnaires who had attended the in-service training programme in DIET. Out of them 100 respondents returned the questionnaires with a breakup of 28 from Rath block, 31 from Muskara block, 23 from Kherla block and 18 were Gohand block. These respondents constituted the sample of the study from Hamirpur district.
3.4 Sample Profile:

**Table 1**

Sample distribution of primary school teachers in four Different Districts of Uttar Pradesh in Bundelkhand region

<table>
<thead>
<tr>
<th></th>
<th>Jhansi</th>
<th>Jalaun</th>
<th>Lalitpur</th>
<th>Hamirpur</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender Male</td>
<td>65</td>
<td>62</td>
<td>55</td>
<td>60</td>
<td>242</td>
</tr>
<tr>
<td>Female</td>
<td>35</td>
<td>38</td>
<td>45</td>
<td>40</td>
<td>158</td>
</tr>
<tr>
<td>Location Rural</td>
<td>77</td>
<td>80</td>
<td>71</td>
<td>65</td>
<td>293</td>
</tr>
<tr>
<td>Urban</td>
<td>23</td>
<td>20</td>
<td>29</td>
<td>35</td>
<td>107</td>
</tr>
<tr>
<td>Type Multi-grade</td>
<td>55</td>
<td>72</td>
<td>68</td>
<td>73</td>
<td>268</td>
</tr>
<tr>
<td>Mono-grade</td>
<td>45</td>
<td>28</td>
<td>32</td>
<td>27</td>
<td>132</td>
</tr>
<tr>
<td>Experience &lt;2 Years</td>
<td>7</td>
<td>15</td>
<td>21</td>
<td>18</td>
<td>61</td>
</tr>
<tr>
<td>2-5 years</td>
<td>13</td>
<td>25</td>
<td>35</td>
<td>25</td>
<td>99</td>
</tr>
<tr>
<td>5-10 years</td>
<td>55</td>
<td>40</td>
<td>29</td>
<td>32</td>
<td>156</td>
</tr>
<tr>
<td>&gt;10 years</td>
<td>25</td>
<td>19</td>
<td>15</td>
<td>25</td>
<td>84</td>
</tr>
</tbody>
</table>

Total teachers sample Size=400
Experts sample size = 50
Total sample observation 100 teachers

**Interpretation:**

Primary school teacher have four different districts in Bundelkhand region (Jhansi, Jalaun, Lalitpur and Hamirpur). The table has divided four items Gender, Location, Type and Experience. Gender has divided male and female, location has divided rural and urban, type has divided multigrade and monograde and Experinece has divided <2 years, 2-5 years, 5-10 years and >10 years and each district has resulted 100.
Table-2
Sampling distribution Primary school teachers in four Different Districts of Uttar Pradesh in Bundelkand region Block wise information.

<table>
<thead>
<tr>
<th></th>
<th>Jhansi</th>
<th>Jalaun</th>
<th>Lalitpur</th>
<th>Hamirpur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the block</td>
<td>No of teachers</td>
<td>Name of the block</td>
<td>No of teachers</td>
<td>Name of the block</td>
</tr>
<tr>
<td>Chirgoan</td>
<td>24</td>
<td>Rampura</td>
<td>37</td>
<td>Talbehat</td>
</tr>
<tr>
<td>Gursaria</td>
<td>20</td>
<td>Nadigoan</td>
<td>28</td>
<td>Mehroni</td>
</tr>
<tr>
<td>Moth</td>
<td>30</td>
<td>Kadora</td>
<td>21</td>
<td>Madawara</td>
</tr>
<tr>
<td>Babina</td>
<td>26</td>
<td>Madograh</td>
<td>14</td>
<td>Jakhlon</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>Total</td>
<td>100</td>
<td>Total</td>
</tr>
</tbody>
</table>

The total purposive sampling technique was used for identification of experts. The researcher sent 180 questionaries to the experts who were known for their involvement in primary education in the state. The list of the experts was obtained from DIETs organizing in-service teachers education programme in U.P. It included different categories of resource persons, Out of them 50 experts responded to the researcher through several reminders and personal contacts. The breakup of experts in terms of their background reads as:

A- Teachers of two districts District Institute viz. Educations and Training(DIETs) of Jhansi and Jalaun (N=10)

B- Retired Primary Schools Headmasters in four districts of Uttar Pradesh in Bundelkhand region (N=9)

C- School Inspectors (SI) of four districts of Uttar Pradesh Bundelkhand region (N=6).
D- District Primary Education programme (DPEP) coordinator, Jhansi (N=2).

E- Teacher educators of State Council of Educational Research and Training Lucknow (N=6).

F- Teacher educator of B.K.D. College, Jhansi, Uttar Pradesh (N=5) and Government College of Teacher Education, Jhansi, U.P., (N=4).

G- Missionary schools Headmasters of four Bundelkhand districts of U.P. (N=5)

Interpretation:

Every District (Jhansi, Jalaun, Lalitpur and Hamirpur) to divide four sub-blocks and No. of teachers each block are different. Jhansi Distt. in Month block highest No. of Teachers and lowest Babina Block, Jalaun District highest Rampura Block and Lowest Madhogarh Block, Lalitpur Distt. No. of Teachers highest Talbehat block and lowest Jakhlon block and Hamir distt. highest No. of teachers Hamirpur Block and lowest Muskara block and blocks wise totaling No. of teachers total 100.

A- Data Collection Procedures

Data was collected by post and personally visiting the center meetings of primary schools of four districts of U.P. (Jhansi, Jalaun, Lalitpur & Hamirpur) The sample experts responded to the questionnaires by hand, as well as by mail, as stated earlier ...........The school activities of ............teachers were observed for two
consecutive days respectively. Collection of data through review of records and studying different publication of the in-service programme was also treated as a mode of collection of data.

B- Procedures of Analysis

Analysis of the data means studying the tabulated materials in order to determine the inherent facts or meaning. The questionnaires were supplied with alternatives in the form of three points rating scale such as competent, un-certain, not competent and for procession of competencies training needs alternatives. The responses to each item were tallied. After finding out the number of responses for each alternative the chi-square formula for testing hypothesis of independence of responses and training background of teachers were also tasted. In the case of experts responses the chi-square taste of equal appearance of frequencies in different cells were calculated.

These statistics were applied to analyses the data of each item of the present level of training needs and as well as future training needs. The 2x3 contingency table (df=2) had been used for calculation of data obtaining from teachers in the context of their training background.

*The equation for chi-square (X2) is stated as follows:*

\[
X_2 = E\left[ \frac{(fo-fe)^2}{fe} \right]
\]

*fo= frequency of occurrence of observed or experimentally determined facts.*

*fe= expected frequency of occurrence of some hypothesis.*
The open ended responses were analysis with the help of content analysis technique. The observation data were also analysed with the help of chi-square taste of independence of teaching competencies and training background of teachers. It is worthwhile to note that in the case of observation scale teachers competencies could be notified only up to 3 point level. No teacher were found to be competent at more competent and most competent levels.

C- OBJECTIVE - III

To make assessment of existing in-service teacher education programme available to the primary school teachers through DIETs in terms of reaction of participants teachers and teacher educators.

1. Nature of data:

Reaction of primary school teachers who participated in training programme conducted by DIETs, and reaction of teacher educators of DIETs as experts.

2. Source of data:

Primary schools teachers of four Bundelkhand districts of U.P. who had undergone the in-service training programme.

3. Tools

The data was collected by using the following tools developed by the scholar.

A- Reaction scale for expert on in-service training of teachers.
B- Reaction scale for teachers on in-service training of teachers
To measure reaction of experts and teachers a three point reaction scale was developed by the scholar. The reaction scale was developed taking into consideration different aspects of in-service education of primary school teachers programme viz,

A- Reaction of expectations from DIET,
B- Adequacy of training activities,
C- Reaction on quality of training programme,
D- Adequacy of venue,
E- Reaction on classroom environment,
F- Adequacy of study materials.
G- Adequacy of laboratory facilities,
H- Adequacy of material available,
I- Adequacy of different methods used,
J- Adequacy of learning experience,
K- Adequacy of media facilities,
L- Adequacy of resource persons,
M- Adequacy of mechanism and
N- Adequacy of evaluation

The alternatives in the scale were-most adequate, moderate adequate. Moreover place was provided for open ended responses after end of each item like- any other please specify.

4. Population and Sample:

The population and Sample of the study for this objective remained same as for teachers and experts category included for objective II.
5. **Data collection procedures**
   
   Similar procedure was adopted for questionnaire survey as stated under objective II

6. **Analysis Procedures**
   
   The questionnaires were supplied with alternatives in the form of three points reaction scale with adequate, moderate adequate and least adequate.

   The responses for each scale were counted. After finding out the number of responses for each scale $X^2$ test were used and calculated the percentage of the each item by computer.

   The chi-square test were used for testing different hypothesis. The open-ended answers were analyzed qualitative.

**OBJECTIVE – IV**

   To explore alternative curriculum frame work for in-service teacher education of primary school teachers towards 2010-AD. The findings of objective 1,2, and 3 were used as the basis for development of curriculum design. Interpretative method was used for development of curriculum design. The details of analysis and interpretation of data are presented in Chapters-IV&V.