

CHAPTER III

PLAN AND PROCEDURE

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3.1.0 INTRODUCTION

Any research can hardly be complete without the details of a procedure of study to be adopted by the investigator. In fact, this is the soul and substance of any research work. Plan and procedure includes method of investigation, selection of sample, tools and/ or tests used etc. aspects of research design and data collection. It is the important part of the total research design. It bears a very close relationship with the purpose of the study and the hypothesis or questions of investigation. The research design is the skeleton that gives the necessary strength and shape to any research study. To substantiate the need for investigating the problem at hand, the objective and scope are clearly defined and those decide the nature and source of data collection. Going through similar studies taken up by early researchers in the present area helps the investigator to finalize the procedure of investigation. It also helps her to decide upon the kind of analysis to follow. Methodology is the part of the plan and procedure. It is regarded as the main body of the research. It is desirable to have a proper methodologically designed research plan. An appropriate methodology can help in getting proper research outcomes. An elaborate detail of the actual procedure adopted by the investigator in the present study is as follow.

3.2.0 METHODOLOGY

Research methodology provides direction in any research work. It involves systematic procedures starting from the initial identification of the problem to its final conclusion. Its role is to carry on the research work in a scientific and valid manner. For the present study, research methodology includes research design, population of the study, sample of the study, tools used in the study, procedure of data collection and the procedure of data analysis, interpretation and discussion which are given as follow.

3.2.1 DESIGN OF THE STUDY

The researcher used the descriptive survey method for the present study. It is a method of investigation that attempts to describe and interpret the existing phenomena. It involves

some type of comparison or contrast and attempts to discover relationships between existing non manipulative areas. According to Webster collegiate dictionary “survey is a critical inspection, often official to provide exact information, often a study of an area with respect to a certain condition or its prevalence.” The characteristics of survey are: it is cross sectional, gathers information from a relatively large number of cases, concerned with generalized statistics of the whole population or a representative sample not with the characteristics of individuals. It deals with clearly defined problems and has definite objectives. It requires an imaginative planning, a careful analysis and interpretation of the data and a logical and skillful reporting of the findings. Surveys may be qualitative or quantitative. Description resulting from surveys may be either words or expressed in mathematical symbols. The present study was a causal comparative study under descriptive research as it involved hypotheses formulations and testing, comparison of various dimensions of teacher education programmes, determination of the cause or reason for existing difference in the behavior or status of groups of individuals i.e. pre-service and in-service teacher education programmes, the analysis of the relationships between non-manipulated variables such as aptitude, interest, attitude, knowledge and skill, and the development of generalization.

3.2.2 POPULATION FOR THE STUDY

Population for the present study consisted of all the pre-service and in-service student-teachers in Gujarat. Nearly the population comprised of 21300 pre-service and 700 in-service student-teachers in the year 2014-15 and 2015-16. As the population was delimited to the students of English medium institutes, the population comprised of the following. The population for pre-service B.Ed. programme consisted of Six English medium B.Ed. institutes/colleges/departments in Gujarat viz. The M. S. University of Baroda at Vadodara, Navrachna University at Vadodara, R. H. Patel English Medium B. Ed. College at Gandhinagar affiliated to the Kadi Sarva Vishwa Vidyalaya, J. G. College of Education at Ahmedabad affiliated to Gujarat University, Waymade College of Education at Vallabh Vidyanagar and H. M. Patel Institute of English Training and Research at Vallabh Vidyanagar, affiliated to Sardar Patel University. IGNOU was the only institute providing in-service B.Ed. programme in the state of Gujarat during this time having seven functional Study Centers in the state. These seven study centres for

IGNOU in-service B.Ed. Programme were situated at B. D. Shah College of Education at Modasa, College of Education (CTE) at Patan, College of Education at Karod, Department of Education, The M. S. University of Baroda at Vadodara, Shri M. N. Shukla Education College at Ahmedabad, Som Lalit Education College at Ahmedabad, Department of Education, Saurashtra University at Rajkot, S. D. Shethia College of Education at Mundra, and Dada Dukhayal B. Ed. College at Gandhidham affiliated to Kachchh University.

3.2.3 SAMPLE OF THE STUDY

For the present study the investigator wanted to take pre-service B.Ed. student-teachers having one year duration of face to face mode and in-service B.Ed. student-teachers having two year duration of distance mode with some face-to-face components, as the sample for the present study. It was also another criteria to take those who could understand English and could be accessible too for the purpose of data collection.

Hence, the investigator had chosen English medium teacher education institutions where the investigator was able to get the permission from the concerned authority to conduct the research. Therefore, sample was selected conveniently. The sample selection was done as per the objectives of the present study.

To achieve objectives of the present study, out of six English medium B.Ed. institutes/colleges/departments in Gujarat as mentioned in the population, three English medium B.Ed. institutes/colleges/departments were selected purposively as sample, viz., The M. S. University of Baroda at Vadodara, Navrachna University at Vadodara, R. H. Patel English Medium B. Ed. College at Gandhinagar affiliated to the Kadi Sarva Vishwa Vidyalaya to get the sample of Pre-service B.Ed. students. Similarly, out of seven functional IGNOU study centres for B.Ed. programme in Gujarat, only one study centre situated at Department of Education, Faculty of Education and Psychology, The M.S.U. of Baroda was selected purposively and two consecutive years' (2014-15 and 2015-16) in-service student-teachers were taken as sample. 205 pre-service student-teachers those provided all the data related to these objectives constituted as the sample for the present study. Similarly, 186 in-service English medium student-teachers of second year those

provided all the data related to these objectives also constituted as the sample for the present study.

10 student-teachers, 5 student-teachers from each in-service and pre-service groups were selected randomly for the observation of classroom teaching skill. 10 lessons, 5 lessons in each method of a student-teacher were observed by the researchers. Hence, a total of 100 lessons were observed, 50 lessons by the in-service student-teachers and another 50 lessons by the pre-service student teachers.

10 student-teachers, 5 student-teachers from each in-service and pre-service groups were selected randomly for the purpose of interview to have a holistic view of their professional course.

3.2.4 TOOLS AND TECHNIQUES

For the present study, Scale for measuring Attitude towards teaching profession prepared by Dr. Ashutosh Biswal (2005) and Aptitude test to test teaching aptitude prepared by Dr. Renu Mishra (1993) were used as tools to measure attitude towards teaching profession and teaching aptitude respectively. Four other tools viz. Knowledge test in education, Interest Inventory for measuring interest towards teaching profession, Classroom observation schedule and Interview Schedule were constructed by the researcher. Details about the available tools and the constructed tools are given as follows.

- **Attitude Scale:** An attitude scale to measure the attitude of student-teachers towards teaching profession prepared by Dr. Ashutosh Biswal in the year 2005 with 5 point scale viz. (i) Strongly positive (ii) Positive (iii) Neutral (iv) Negative, (v) Strongly negative, was used for the present study. The tool contained 25 statements which revealed their attitude towards the teaching profession which may be positive or negative. The statements in the attitude scale were related to academic aspect of teaching profession, interest and involvement towards administrative works in the school, inclination of student-teachers towards the social status of teaching profession and the temperament of student-teachers towards the financial beneficiary in teaching profession. Student teachers were asked to indicate their response in the form of tick mark (√) in the appropriate place in the scale. The attitude scale was designed to measure the attitude towards

teaching profession in a range of 25 to 125. The minimum score of 25 speaks about strongly negative attitude, whereas, a maximum score of 125 speaks about strongly positive attitude towards teaching profession. The test-retest reliability of the scale was 0.92 and the scale had high content validity. The attitude scale is given in Appendix I.

- **Aptitude Test:** An Aptitude Test to measure the teaching aptitude of student-teachers developed by Dr. Renu Mishra in the year 1993, containing 50 items in the form of MCQs with four alternatives for each stem, was used for the present study. The student-teachers were asked to indicate their response by encircling the right answer, which revealed their teaching aptitude that may be high or low. Aptitude test was designed to measure teaching aptitude of student-teachers and scoring was done with the help of Answer Key. One mark was given for each item in the test, with the highest score being 50 which indicated high aptitude and lowest mark being zero which indicated low aptitude. The tool mostly contained items related to classroom situations and four homogeneous alternatives were given for each stem which contained different types of responses expected from the teacher to those classroom situations and the student-teacher had to encircle the most appropriate response in that situation. The aptitude test is given in Appendix II.
- **Knowledge test in Education:** It was prepared by the Investigator to measure the content knowledge of pre-service and in-service student-teachers in the areas like, Educational Psychology, Educational evaluation, Curriculum and Instruction, Educational Technology, Methodology of Teaching and Education in Emerging Indian Society/ Education and Society, as these topics were common in most in-service and pre-service B.Ed. programmes. Content analysis of the course materials was done and a blue print was prepared. On the basis of the blue print questions were framed in the form of Multiple Choice Questions with four alternatives for each stem. Then the draft of the knowledge test was given to experts from the field of teacher education. Their opinions and suggestions were considered for giving final shape to the tool and required changes were made in the tool. Finally, the test was included with 150 items containing 25 items from

each topic. Knowledge test was designed to assess knowledge in education and scoring was done with the help of Answer Key. One mark was given for each item in the test with the highest score being 150 and lowest score being 0. The knowledge test in education is given in Appendix III.

- **Interest Inventory for measuring interest towards teaching profession:** Two separate interest inventories were prepared by the investigator to measure the interest of pre-service and in-service student-teachers towards teaching profession. On the basis of reviewed literature and nature of their work, the components of interest inventories were thus identify for the inventory which were related to B.Ed. programme like, teachers' role and function in the area of co-scholastic activities, interest and involvement in academic, administrative and teaching-learning process in school. Statements were framed for each of the inventory, with a five point rating scale viz. (i) Strongly Agree (ii) Agree (iii) Undecided (iv) Disagree and (v) Strongly Disagree, to get the intensity of their interest against different statements. Then the draft of the interest inventory was given to experts from the field of teacher education. Their opinions and suggestions were incorporated for giving final shape to the tools and required changes were made in the tools. Finally, both inventories were included with 40 items each with a five point scale. The interest inventory was designed to measure the interest towards teaching profession in a range of 40 to 200. A low score of 40 speaks about very low interest towards teaching profession, whereas, a high score of 200 speaks about very high interest towards teaching profession. The interest inventories are given in Appendix IV and V.
- **Observation Schedule:** An observation schedule was prepared by the investigator to measure and quantify classroom teaching skills of pre-service and in-service student-teachers, which contained statements related to all the teaching skills used during classroom transaction, such as, Skill of Introduction, Skill of Black board writing, Skill of Illustration with Examples, Skill of Probing, Skill of Questioning, Skill of Stimulus-variation, Skill of Non-verbal cues, Skill of using Teaching-aids, Skill of Explanation, Skill of Questioning, Skill of Classroom Management, Skill of Praising and Skill of achieving closure etc. On the basis of

the analysis of the skills used in the classroom teaching, statements were framed for different components of with a five-point scale viz. (i) Weak (ii) Average (iii) Good (iv) Very good and (v) Excellent to measure the intensity of the skill used. Then the draft of the observation schedule was given to experts from the field of teacher education for validation. Their opinions and suggestions were incorporated for giving final shape to the observation schedule by adding required changes in it. Finally, the observation schedule was included with 50 items containing items from above mentioned teaching skills. The observation schedule was designed to measure and quantify classroom teaching skills of student-teachers in a range of 50 to 250. A low score of 50 shows poor in the use of teaching skills, whereas, a high score of 250 shows excellent in the use of teaching skills. The observation schedule is given in Appendix VI.

- **Interview Schedule:** A structured interview schedule was prepared by the investigator to take the holistic view of the pre-service and in-service student-teachers regarding their B.Ed. programme. On the basis of content analysis of the reviewed literature and gathered information, questions were framed. The interview schedule contained questions related to their admission process, teaching-learning process and evaluation process during their B.Ed. programme. The draft of the interview schedule was given to experts from the field of teacher education for validation. Their opinions and suggestions were considered for giving final shape to the tool and required changes were made in the interview schedule. Finally, the interview schedule was included with 37 questions, 6 questions on admission process, 23 questions on teaching-learning process and 8 questions on evaluation process. The Interview Schedule is given in Appendix VII.

3.2.5 DATA COLLECTION

The data related to objectives 1, 2 and 3 were collected from the sample colleges and study centres personally and website was searched to get needed information about the admission process, teaching-learning process and evaluation process of secondary teacher education programmes.

The data related to objective 4 was personally collected by meeting the sample students. The data was gathered by employing the mentioned tools i.e. Attitude scale, Aptitude test, Knowledge test in Education and Interest Inventory (for measuring interest towards teaching profession) on the sample, one by one. Student-teachers were guided by the researcher to fill them up completely.

100 practice teaching lessons, 50 of in-service student-teachers and 50 of pre-service student-teachers were personally observed by the investigator in the schools while taking classes for their practicals to examine the occurrence of components of teaching skills in the behavior of student-teachers during classroom transaction.

5 selected samples from each group were interviewed personally by the investigator with the help of a structured interview schedule to take the holistic view of the pre-service and in-service student-teachers regarding their B.Ed. programme.

3.2.6 PROCEDURE OF DATA ANALYSIS

Data analysis is a process of inspecting, cleansing, transforming and modeling data with the goal of discovering useful information, suggesting conclusions and supporting decision-making. Interpretation refers to the task of drawing inferences from the collected facts after the study. In fact, it is a search for broader meaning of research findings.

Data analysis is considered to be an important step and heart of the research in research work. After collection of data with the help of relevant tools and techniques, the next logical step, is to analyze and interpret data with a view to arriving at empirical solution to the problem. Scores obtained from the mentioned tools for the present research were analyzed by employing qualitative and quantitative data analysis techniques with the help of both descriptive statistics and inferential statistics. Frequency, percentage, and content analysis were used to analyze the qualitative data. The descriptive statistical techniques like Mean, Standard Deviation, Standard Error of Mean and for the inferential statistics Mann-Whitney U-Test was used during data analysis to analyze the quantitative data. The non-parametric Mann-Whitney U-test was used to analyze the data as the sample was taken purposively as it is considered as the most powerful non-parametric equivalent of t-test of parametric family. Data obtained through observation and case studies were analyzed qualitatively.

Though data was collected in interval scale, the researcher prefer to use Mann-Whitney U-test as the sample was taken purposively and the assumptions of parametric statistics did not match for the present data.

The procedure of data analysis and its interpretation is presented in detail in Chapter IV.