

PLAN AND PROCEDURE

CHAPTER 3

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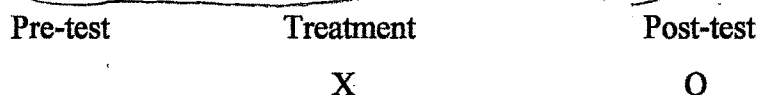
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3.0 INTRODUCTION

In this chapter the Investigator has detailed out the plan and procedures, which has been adopted while carrying out study. The present study was the intervention study, wherein a strategy was developed and tried out to improve the instruction in environment for class three and class four in a real classroom setting. This chapter consists of research design of the study, nature of the study, sources of the study, tools and techniques, procedure for data collection and analysis of data.

3.1 RESEARCH DESIGN OF THE STUDY

The present study was Intervention study. Hence, the research designs for the present study adopted was survey for the situational analysis and experimental design for studying the effectiveness of the strategy. Where Intervention was developed and implemented. The design is diagramed below :



Where, x stands for experimental treatment and O for observation or measurement.

It was rightly quoted by Campbell (1969), "Modern nations should be ready for an experimental approach to social reforms". As experimental research increases the applicability of educational practice in specific situations. Further, it also helps in generating better insight into the instructional process.

3.2 NATURE OF THE DATA AND SOURCES OF DATA

For achieving objective one of the study that was to identify the administrative and pedagogical problems in Multi-grade teaching schools, the data collected was descriptive and numerative in nature that was quantitative as well as qualitative in nature.

The data for achieving objective one was collected by employing Questionnaire, Semi-structured Interview Schedule, Classroom observation and Official documents.

For achieving objective two of the study that was to develop strategy for Environment in Multi-grade teaching for class three and four was analytical in nature that was, qualitative in nature.

The data for achieving objective two was collected from subject expert, Lecturers at DIET, Vadodara and school teachers.

For achieving objective three that was to study the reaction of the trainees regarding the workshop. The nature of data was descriptive and numerative that was quantitative and qualitative in nature. The data was collected with the help of Reaction Scale.

For achieving objective four that was to study the perception of the trainees regarding the developed strategy in Environment for Multi-grade teaching for class three and four. The nature of data was descriptive in nature.

The source for collecting data for achieving objective four twenty teachers of Dabhoi taluka, Vadodara, district were interviewed through the semi-structure interview schedule.

For achieving objective five that was to implement and study the effectiveness of the developed strategy in terms of academic achievement of pupils. The nature of the data was quantitative in nature.

The source of data for achieving objective five was through the classroom observation of the twenty teachers of Dabhoi taluka, Vadodara district.

3.3 POPULATION OF THE STUDY

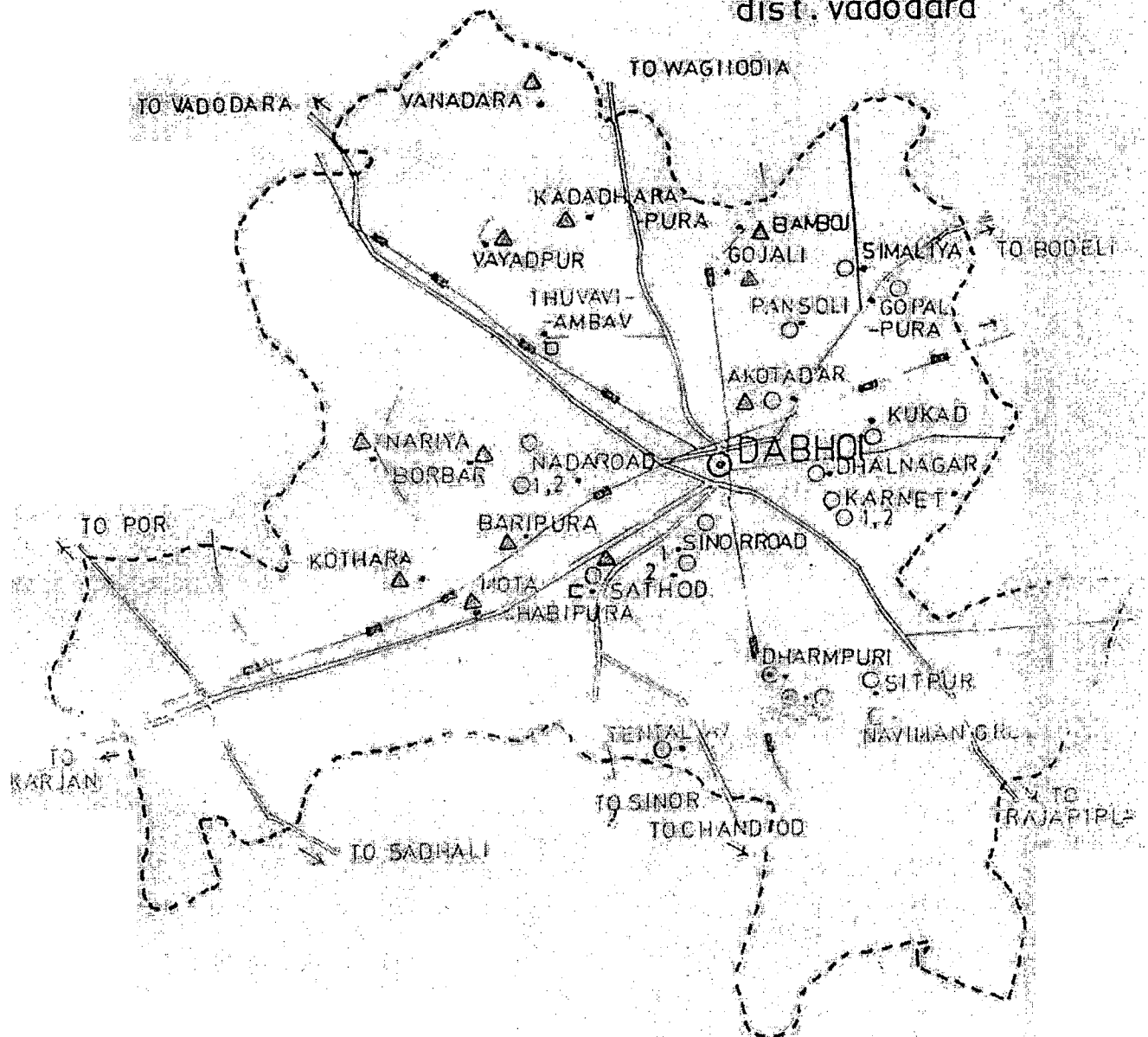
The population was the group of interest to the researcher, the group to which she or he would like the results of the study to be generalizable. The population of the present data consists of the teachers teaching Environment in class three and four in multi-grade situation. There were total 144 schools in working condition under SSPA. As it was not feasible to study the whole population and so the sample was studied.



Scale: 1 cm = 13.9 km

TAL: DABHOI

dist. vadodara



REFERENCE

1	ROAD	
2	RAILWAY	
3	REH SITE OF GUJARAT	○
4	REH SITE OF M.P.	△
5	REH SITE OF MAH.	◐

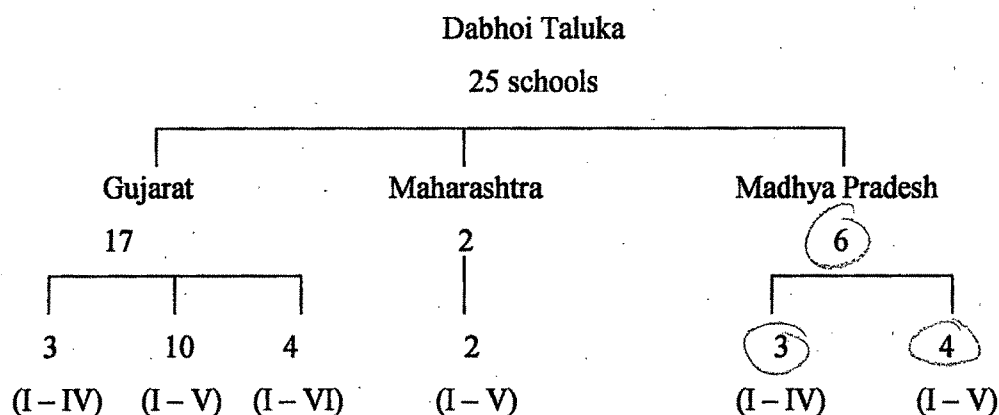
3.4 SAMPLE OF THE STUDY

Sampling was the process of selecting a numbers of individuals for a study in such a way that the individuals represent the larger group from which they were selected.

Out of twenty-five schools of Dabhoi taluka, twenty schools were selected randomly and all the students of class III and IV of selected schools were included in the sample. Thus, sample was selected using cluster sampling technique.

Figure 3.1

Distribution of the schools of Dabhoi taluka with respect to state and number of classes.



3.5 TOOLS AND TECHNIQUES

A research tool plays a major role in any worthwhile research, as it was the sole factor in determining the sound data and in arriving at perfect conclusions about the study in hand.

The researcher used the following tools and techniques to collect the required data for the present study:

3.5.1 Questionnaire for Situational Analysis

Questionnaire was one of the most appropriate and useful data-gathering devices in research.

In the present study researcher followed the steps given by Mouly (1970) for construction questionnaire. First of all investigator decided the major aspect of

the study that was to identify the administrative and pedagogical problems in multi-grade teaching. Same has been further spelled out in terms of major problems and pedagogical problems. Further, the administrative aspect included the components like transfer / posting of teachers, grants of leave for teachers and appointments of their substitutes, organization of special training for teachers and supervision. Next, pedagogical aspect covered the components like: Next, pedagogical aspect covered the components like Grade combination, curriculum and teaching – learning relevant questions were formulated with the proper wording. Sequencing of questions were done.

Keeping in mind nature of questions that was simplest and straight forward questions were kept in the beginning sensitive questions were kept at the end. Finally, the questionnaire was given to the experts for the content validity and for examining language and framing of the questionnaire. Modifications were carried out according to the suggestions given by the experts in terms of content, language and framing of the questions. Finally, questionnaire consisted of Background information, facilities available along with Administrative and pedagogical aspects.

Thus, final questionnaire consisted of thirty-five open-ended items. Forwarding letter was also drafted (Appendix I(A)) In table 3.1 aspects of the questionnaire was presented.

Table 3.1
Aspects of questionnaire

No.	Aspects	Total questions
1	Background Information	11
2	Facilities in Schools	3
3	Administrative statements	7
4	Pedagogical	14
	Total	35

3.5.2 Semi-Structured Interview Schedule for Teachers

Semi-structured interview schedule was designed to collect data with reference to administrative and pedagogical problems. The purpose of this tool was to further prove into the aspects already covered in the questionnaire, also to have clarifications on some of the administrative and pedagogical aspects. Major focus of questions were related to posting and transfer, grants of leave for teacher, supervision, grade combination, organization of special training related to multi-grade situation, teaching methods, activities and teaching Aids, timetable, problems encountered in the teaching-Learning process in Environment. All the questions were open ended as and when required further probing was done at the same time facial expression, tone were also observed.

The tool was validated by the subject experts and the necessary changes were incorporated in the final draft of semi-structure interview schedule. (Appendix **II**)

3.5.3 Classroom Observation – Before and After Workshop

In an observation, the current status of a phenomenon was determined not by asking but by observing. This technique was applied before and after the workshop.

Thus, classroom observation technique was employed to collect the data related to administrative and pedagogical problems. The purpose was to seek more information about data collected through questionnaire and semi-structured interview.

The points considered in the classroom observation were related to physical and pedagogical aspects that was classroom environment seating arrangement, recapitulation. Method used to achieve particular competency, handling of two grades/class, simultaneously enthusiasm in students for learning, motivating the students, initiating the topic, activities applied in achieving particular competency, teaching aids available and used in the instructional process, and the assessment procedure.

3.5.4 Official Document for Situational Analysis

In order to verify the data collected through questionnaire, interview and classroom observation this tool was applied. The data regarding the administration was collected from the Education cell, Sardar Sarovar Punnah Vasahat Agency, Vadodara. Details of Activities was enclosed on ~~Page 30~~

3.5.5 Reaction Scale for The Feedback of The Workshop

In order to examine the views of the teachers regarding the two days workshop reaction scale was developed by the researcher. Reaction Scale consisted of twelve items. Out of which eleven items were rated on three point scale i.e. strongly agree, strongly disagree and disagree and the last item was open ended related to overall view regarding the two day workshop. The items were pertaining to the trainees liking, understanding, retention and the media and methods applied during the workshop. The components covered in the reaction scale were related to the timing of the workshop, clarity and understanding about multi-grade teaching situation, model lesson plan, different methods and media that can be applied in multigrade teaching situation.

The reaction scale was preceded by general instructions about the method of responding to the items. However, the tool was given to the experts for validating with regard to the clarity and formation of the items. The tool was modified on the basis of the suggestions made by the experts. The final tool was enclosed in Appendix-V

3.5.6 Achievement Test for The Effectiveness of The Strategy

In order to study the objective five that was to study the effectiveness of developed strategy on achievement test was constructed and administered on class III and class IV students achievement test was prepared by the Researcher on Environment studies of Class III and Class IV. The Achievement test included the context on our Body, Air, Water and Life and Air and Water pollution from class III and from class IV content on our diet, weather and land. Further, this content was tested on the basis of competencies that was

different parts of body and their functions (7.3), Importance of Air and its use in our life (7.3.2). To know about the importance of water (10.3.4). To know about the different sources of water (10.3.5), to know about water pollution (10.3.6), to find out the causes of air & water pollution (10.3.7) and from class IV the competencies included were factors contributing to the preservation of good health (7.4), understanding regarding various types of diet (7.4), understanding the functions of food in physical growth (7.4.2) understanding regarding the importance of food and nutrition (7.4.1), understanding about balanced diet, knowing about weather phenomena (10.4.5), relationship between air and weather, knowing about different forms of water affecting weather, observing various weather phenomena and its recording about usefulness of soils (10.4.10), classifying the soils (10.4.11), knowing about fertility of the soil (10.4.11) of class IV.

Further, under each competency two to four questions were covered. Thus, the comprehensive test constituted of sixty multiple-choice questions of one mark each and five descriptive questions of two mark each.

Thus, the first draft of the comprehensive test sixty-five items in all. Then it was referred to five experts in order to obtain their opinion about the validity of the test as well as the clarity of question and their comprehensibility. The feedback obtained from the experts was utilized for revising the test. The modification was mainly in terms of deleting ambiguous questions, rephrasing double-barreled questions and refining the language of certain questions. Keeping in view the above points, a final draft of comprehensive test was prepared. The final Achievement Test was enclosed in Appendix-IV

The achievement test was preceded by general instructions about the method of responding to the questions.

3.5.7 Semi-structured Interview Schedule to Study The Perception of Teacher Regarding The Developed Strategy

Semi-structured Interview schedule for the teachers regarding the developed strategy

Semi-structured Interview schedule was designed to collect data with reference to the effectiveness of the developed strategy. The tool compressed of twelve items related to quality of strategy, usefulness of strategy, feasibility of the strategy and change in the students classroom behaviour.

All the questions were open ended as and when requested further probing was done. The tool was validated by the subject experts and the necessary modifications with respect to formation, language and content were incorporated in the final draft of semi-structured interview schedule. The final draft of the tool was enclosed in Appendix VI.

3.6 PROCEDURE OF DATA COLLECTION

In order to get permission for conducting the study with the Schools run by Sardar Sarovar Punnnah Vasahat Agency (SSPA), the investigator contacted Assistant Director, Education Cell, SSPA during the year 2001. After convincing him about the research, investigator had a meeting with the Director, Education cell, SSPA and presented the whole proposal. After two months investigator had a meeting with Commissioner, SSPA. Where the Research proposal was discussed. Finally, investigator got the permission letter to conduct the study with SSPA schools. (4-1-2002)

Later the Investigator visited SSPA, schools of Waghodia and Dabhoi Talukas with respective supervisors and explained need, purpose and importance of visiting and conducting the study.

While visiting Investigator built a rapport with teachers.

Than in the month of January, 2002 madam from Finland had visited the SSPA, Schools. Investigator also joined her and there onwards Investigator started establishing rapport with teachers and students. Investigator observed the classroom and teaching learning process. Investigator also joined the pupils to play different games and talking informally with pupils individually and group.

The data were collected in three phases, pre-intervention phase, Intervention phase and post-intervention phase.

3.6.1 Pre-intervention Phase

This phase was divided into two sub phases

During the first sub phase investigator visited schools and did a situational analysis with the help of tools employed for objective one. Teachers were interviewed to find out the difficulties faced by them during teaching learning process, especially Environment in multi-grade situation. Also, Investigator recorded the visit in the form of field notes. In the second sub-phase the learning material for the training programme was prepared with the help of subject expert, Block Resource coordinators, Cluster Resource coordinators and Lecturers from DIET Baroda and based on their comments and suggestions, the strategy was developed and modified accordingly.

Further, during pre-intervention phase teachers informed the investigator about the difficulty in understanding certain words use by the vasahati children and thus, investigator with the help of teachers, vasahati people and supervisor prepared a dictionary which took nearly six months. (Appendix XII)

3.6.2 Intervention Phase

During this phase the developed strategy was implemented on twenty-five teachers of Dabhoi taluka. The workshop was conducted for two days, which was divided into four sessions. Before commencing the sessions Inauguration was done where experts introduced the purpose and importance of two days workshop. Here the two days workshop was explained in brief:

Session One: conceptualizing Multi-grade teaching, problems faced by trainees during teaching- learning process, different strategies that can be employed in Multi-grade teaching and how to make Multi-grade Teaching more effective.

Session Two: Resource Persons implemented the strategy. Twenty-five trainees were trained about the compilation of the competencies by analyzing the Environment textbook of class three and four and different strategies that can be applied for handling multi-grade situation. Finally, Resource person gave model Lesson Plan where the suggestions of the trainees were considered.

Session Three: Trainees were divided into the groups and the group members were selected by the trainees themselves. Each group was assigned with compiled competencies of class three and four. Trainees prepared Lesson Plan according to the model lesson.

Session Four : One of the member from each group presented the lesson plan and after the presentation resource person asked the other groups about the appropriateness of the Lesson plan and any suggestion regarding the different activities that can be employed while teaching particular group of competencies.

Session Five: After the Intervention programme was implemented, the investigator took the perception of teachers with the help of reaction scale at the end of the second day workshop.

3.6.3 Post Intervention Phase

After the implementation of the intervention programme, the investigator went to the field and observed the teaching- learning process. Also, the test was employed on third and fourth-class pupils in order to know their achievement.

3.7 PROCEDURE OF DATA ANALYSIS

As the present's investigation was an intervention study and the approach was developmental in nature, data collection and data analysis was carried out simultaneously. In the first phase data collected through questionnaire was analyzed by computing frequency and percentage. Further supplemented data collected through semi-structured interview schedule and classroom observation was analyzed qualitatively which helped the investigator in developing the input for the workshop. In the second phase workshop was conducted and the reaction scale was administered on the trainees which was analyzed by applying frequency, percentage and also chi-square. The content analysis was done for open ended statement. The achievement test taken after the Intervention was analyzed by applying Mean, Median, Mode, Percentile, Standard deviation, Skew ness and Kurtosis. ANOVA was computed to test the

null hypothesis stating that “there will be no significant difference in the achievement of the students of class three and class four with respect to the schools.” Further, post-ANOVA was computed.

Finally, in the post-intervention phase semi-structured interview schedule and classroom observation were analyzed qualitatively.