

CHAPTER III

APPROACH AND METHODOLOGY

3.0 INTRODUCTION

The objective of this study is to ascertain the quality of Municipal Corporation Primary Schooling in Vadodara city. While Primary Education is imparted by various Institutions, the focus of this study is the quality of Primary Education in the schools managed by the Municipal School Board in Vadodara city - specifically Std.V, VI, and VII. Herein, quality of Primary Education is understood in a comprehensive manner to include distinct dimensions namely infrastructure, human resources, teaching-learning process and learner achievement (literacy and numeracy). The present chapter is a statement of the design adopted by the investigator in the realization of these objectives.

The study is a survey of the existing scenario of Municipal Corporation Primary Schooling in Vadodara city and the methodological details adopted to comprehend this scenario have been detailed herein.

3.1 STATEMENT OF THE PROBLEM

A study of the Quality of Municipal Corporation Primary schooling in Vadodara City.

3.2 RESEARCH QUESTIONS

The Researcher was keen to study the existing Primary Education System and thus sought answers to the following Research Questions -

- What is the status of infrastructure in the Municipal Corporation Schools in Vadodara city?
- What is the status regarding availability of teaching-learning materials?
- Do all children who enroll continue till the end of the year?
- What are the qualifications and the teaching experience of the teachers in this system?
- What are the features of the training programs conducted by DIET for the Teachers?
- Is the textbook suitably designed for achievement of curricular objectives?

- How are academic subjects and extra-curricular activities allotted in the timetable?
- What are the teaching methods adopted by the Teachers during the Instructional process?
- What is the prevailing system of evaluation in the schools?
- What is the academic achievement of students in Language and Mathematics?
- What is the nature and extent of participation in co-curricular activities?
- What are the views of the different Functionaries and Beneficiaries regarding the quality of this system?

3.3 OBJECTIVES OF THE STUDY

To enable the reader to correlate the design adopted with the purpose of the study, the objectives have been listed below.

1. To study the status of Municipal Corporation Primary Schools in terms of facilities available.
 - Infrastructure facilities
 - Teaching Materials
 - Enrollment and retention at the end of the academic year .
2. To Study the status of Municipal Corporation Primary Schools in terms of Human Resources
 - Qualification and experience of teachers.
 - Type and duration of in-service training availed by teachers.
 - Frequency and nature of teacher appraisal programmes.
3. To study the teaching-learning process in the schools through
 - Analysis of the text book,
 - Organization of the time-table,
 - Mode of classroom transaction
 - Methods adopted by the teachers,
 - Teaching aids used by the teachers,
 - Evaluation mechanisms,
 - Remedial classes conducted for weak students.

4. To study the outcome of schooling through
 - Students' academic achievement (Math and Language),
 - Participation in different co-curricular activities.
5. To study the views of Administrative Officers, Headmasters, Teachers, Students and Community Members regarding quality of Primary Schooling.

3.4 DELIMITATION OF THE STUDY

The study has been delimited to

- The Municipal Corporation schools of Vadodara city only,
- The academic proceedings during the academic year 2004-2005,
- The chosen seven schools wherein in-depth observation was conducted for capturing the different aspects of primary schooling.
- The Primary grades and therein specifically Stds. V, VI, VII only,
- The teaching-learning processes and academic achievement in the two subjects i.e. Language and Mathematics,

3.5 OPERATIONAL DEFINITION OF TERMS

Municipal Corporation Primary Schooling

The study restricts itself to the schools under the Municipal School Board of Vadodara City.

Primary Schooling refers to the schooling in the Primary Grades, which comprise of

Primary Grades

- | |
|----------------------------|
| Lower Primary (Std. I-IV) |
| Upper Primary (Std. V-VII) |

The Study restricts itself to the Upper Primary Classes i.e. STD. V, VI, VII.

Quality

Quality refers to the present condition of things, how these function and what results these produce. To understand and analyze quality, the 4 quality indicators were

- Infrastructural facilities
- Human – Resources

- Teaching Learning processes
- Achievement in curricular and co-curricular areas

Achievement

For the purpose of this study, an assessment of the outcome of primary schooling (achievement) was meant to connote -

- Measurement of literacy and numeracy skills in the learners, in all the medium of instruction (Gujarati, Marathi, Sindhi, Hindi) for Classes V, VI, VII, for the academic year 2004-05.
- Participation in various co-curricular activities in the academic year 2004-05.

3.6 APPROACH ADOPTED

As mentioned earlier, 'quality' of Primary Education is understood as a conglomerate of several factors (related to input, process and output) which collectively determine 'quality'. While quantification seemed necessary for certain aspects, mere quantification often seemed inadequate to capture certain other dimensions. For dimensions such as teaching –learning process, its conducting and other going – ons in the every day conducting of curriculum, only a closer observation would unravel certain facts and thus enable a clearer and holistic picture.

Thus, both quantitative and qualitative approaches were employed keeping in mind the nature of data that was being collected.

3.7 NATURE OF DATA

The following data, both quantitative and qualitative, were required / collected to achieve the objectives.

Quantitative data included the infrastructural facilities available in the schools; the presence and extent of use of teaching-learning materials; the enrolment and retention of students at the end of the academic year; the qualification and experience of teachers; the type and duration of in – service programs attended by teachers; the academic achievement of students (literacy and numeracy).

Qualitative data was required and collected mainly through a critical analysis of the prevalent text books, the daily and annual curricular and co-curricular activity organization, participation of students, mode of classroom transaction, methods adopted by teachers and finally the views and opinions elicited by different functionaries and beneficiaries of the Primary Education system.

3.8 SOURCES OF DATA

The data required for this study were available from various sources.

For objectives 1 and 2, data was collected from all the existing Primary schools, run by M.S.B., of Vadodara city. There were a total of 126 schools during the period of data collection and each one was visited for the required data.

For objective 3, data was collected from a few different data sources. The curriculum as practiced in the school, in terms of curricular and co-curricular activities, was closely observed.

For analysis of the textbooks, the textbooks of Std. V, VI, and VII were closely analyzed keeping in mind the prespecified objectives for each grade. For the other components of objective 3, data was collected on visiting the schools regularly and observing the actual manner in which the teaching – learning process was conducted i.e. the mode of classroom transaction, the methods adopted by the teachers, the teaching aids employed by the teachers, the manner and frequency of evaluation and finally the remedial classes conducted to identify and remedy the learning difficulties encountered by learners.

For objective 4, data was collected by means of achievement tests conducted in the subjects of Mathematics and Language (Hindi, Gujarati, Marathi, Sindhi) for grades V, VI, VII. Also, the participation in different co-curricular activities was seen – i.e. the type of activities conducted in the course of the year and the extent of participation of students in the same.

For objective 5, the views of the functionaries of the system (Administrative officers, Headmasters, Teachers) and Beneficiaries (students and their parents) were elicited regarding quality of the existing scenario.

Thus, the data required for the study was collected from four main sources.

- Official Documents.
- School Functioning.
- Functionaries
- Beneficiaries

3.9 OPERATIONAL FRAMEWORK OF THE STUDY

The present study has been carried out in two distinct but related stages.

They are –

- Collection of quantitative information pertaining to quality indicators:

In this stage, all the primary schools in Vadodara city, under the Municipal Corporation School Board were visited. Details with respect to their infrastructure and available facilities were collected. When collated, it presented a comprehensive picture of the existing scenario with respect to all these schools. This stage provided the background that enabled the investigator to conduct the following stage.

- Identification of Representative schools :

The data collected from all the schools provided a comprehensive canvas for understanding the various aspects regarding these schools. i.e. the available facilities and their functioning. Once these characteristics were determined, a few schools were purposively selected and it is in these schools only that a detailed study was conducted regarding the various input and process variables, the status of functioning and student achievement.

Assessment of the outcome of schooling had been confined to

- Measurement of literacy and numeracy skills in the learners, in all the medium of instruction (Hindi, Gujarati, Marathi, Sindhi) and for classes V, VI, VII.
- Student participation in different co-curricular activities conducted in that academic year (2004-05).

3.10 PROJECT IMPLEMENTATION.

Population and Sample of the Study -

All the schools in Vadodara city under the Nagar Prathamik Shikshan Samiti, the Functionaries (Administrators, Coordinators, Principals, and Teachers) and Beneficiaries (Students, Parents) constituted the Population of this study.

It was from this population that the sample was selected, the details of which are as follows -

3.10.1 Selection of schools for the study.

A detailed analysis of the scenario enabled the investigator to identify some schools. The 126 schools which were visited were classified on the basis of their medium of instruction i.e. Gujarati, Hindi, Marathi and Sindhi.

Once all the schools in Vadodara city were visited and a clear picture of the scenario had emerged, from each medium of instruction 2 schools were selected, purposively. This selection was done in such a way that these schools would be fairly representative in terms of the available human and material resources and other conditions characterizing the primary education scenario in the city.

As mentioned earlier, the schools that would be fairly representative were selected as the sample schools and consequently 2 schools were selected from each medium of instruction. Since, for Sindhi medium of instruction only 1 school was functioning at the time of data collection, that school alone was selected.

The schools were selected keeping in mind some characteristics namely-

- One of the selected schools (Marathi medium) was adjudged the best school in Vadodara City (in terms of functioning and academic achievement of the students) by the Nagar Prathamik Shikshan Samiti,
- Two of the selected schools were in communally sensitive areas. The surrounding areas being sensitive, the attendance of the students was often affected due to this proximity,

- Two schools were specifically selected keeping in mind their infrastructure .Both these schools have in addition to the school building, an assembly ground and a sports ground too. Both these schools house the Office of the CRC Coordinators and are comparatively better equipped than most Nagar Prathamik schools in terms of infrastructure and other facilities,
- The sixth school was especially selected due to its ambience – this school is located in a busy marketplace area. In addition to the commotion of the constant traffic, there is a very strong smell of non-vegetarian items sold in the market place which the students have to endure throughout the day. The school does not have any provision for a playground – only a very small area where the morning assembly was conducted.
- The last school was chosen as it was the only school offering Sindhi as medium of instruction in Vadodara City.

Thus, all the schools were purposively selected keeping in mind the special characteristics they had. Because all the Nagar Prathamik schools would have some or the other of these characteristics, these schools were chosen as the representative schools and the second phase of study conducted there.

3.10.2 Selection of Learners, Teachers, Functionaries, Beneficiaries.

- Selection of Learners.

In keeping with the objectives of the study, learners in grades V, VI, VII constituted the sample. As mentioned earlier, 2 schools were purposively selected from each medium of instruction i.e. Gujarati, Hindi, Marathi and Sindhi and it was from within these schools that the student sample was selected. Herein too, there existed some variations. In some of these schools each grade was divided into 2 sections. Then, any one section was selected at random and all the learners in this selected section constituted the sample of learners. A total of 685 students constituted the student sample.

- Selection of teachers

Now that the sample of learners was determined, teachers teaching these students were identified. The teachers from the selected schools constituted the sample of teachers. Thus, teachers of grades V, VI, VII of the selected sections from the two schools each from the four mediums of instruction (seven schools totally) finally comprised the sample of teachers. A total of 50 teachers constituted the sample of teachers.

- Selection of Parents (Community members)

Parents constituted the beneficiaries of this system and consequently their opinion would be of great importance, regarding the performance and attainment of their children. Keeping this in mind, the parents of the sample of students identified in the study were identified. However, finally it was only their availability, readiness and willingness to respond that determined their inclusion in this study.

- Selection of Functionaries

Persons involved in the conducting and the functioning of the entire machinery were involved namely the DEO, the Administrative Officer and the CRC Coordinators. Their views were necessary to understand the organization, functioning and smooth management of the Primary Schooling system which was the focus of this study.

3.11 TOOLS - INSTRUMENTS FOR DATA COLLECTION

For acquisition of relevant data required for the study, the following tools were prepared for data collection

- School Information Schedule,
- Observation Schedule,
- Paper pencil Test,
- Interview Schedule,
- Informal Discussion

The following tools were constructed to acquire data relevant and necessary for the study. **(A set of these tools have been appended in the Appendix section).**

3.11.1 SCHOOL INFORMATION SCHEDULE

This tool was designed to collect information regarding the location of the school, the infrastructure, availability of facilities (such as a library, T.Aids, separate toilets for girls and boys, playground, sports items, etc.) the mid day meal program, the annual and daily lesson planning of teachers, enrolment and retention patterns, extent of involvement of parents, availability of funds for teaching related activities, frequency of staff and parent – teacher meetings for appraisal, imparting of computer education in schools, remedial teaching done if at all, the examination pattern, and finally suggestions for improvement of the quality of the existing scenario.

3.11.2 OBSERVATION SCHEDULE

The next tool for data collection was an observation schedule.

This tool was employed for observing the manner in which the teaching – learning processes were conducted in the actual classroom situation. The tool focused on dimensions such as –

- Actual teaching duration, lesson introduction mode, teaching strategies used, student behavior patterns, extent of pupil participation, pupil responses, teacher explanation, teaching aids used, audibility, visibility in classroom, home assignment given/checked, manner of class summarizing.

Also,

The manner in which extra-curricular activities were arranged in the time-table and conducted was observed and the nature and extent of student participation noted.

3.11.3 PAPER PENCIL TEST

For the purpose of this study, an assessment of the outcome of primary schooling was determined via

- Participation in various co-curricular activities and
- Basic literacy and numeracy skills.

The *Paper – pencil test* was an instrument to assess student achievement in two areas - language and mathematics and was used to measure the literacy and numeracy skills among these learners. The minimum levels of learning specified for each grade (here, Std. V, VI, VII) served as the benchmarks for evaluating student performance.

The measurement of performance was done at such a stage when students were expected to have acquired the prescribed competencies i.e. at the end of the academic year. *It is also necessary to be mentioned here that out of the prescribed competencies for each grade, selected competencies were taken up and student performance with regards to these competencies only was assessed.*

Selection of competencies was done after consultation with the Municipal School Board Evaluation Committee members – they were senior and experienced schoolteachers and it was with consultation with them that the competencies were decided. On their recommendation, certain competencies were selected over the others and consequently selected for the achievement test as a suitable indicator of the students' learning outcomes.

Further details regarding the construction of this tool are given at a later stage in this chapter itself.

3.11.4 INTERVIEW SCHEDULES

Unstructured Interview schedules were developed in order to collect reactions from different categories of functionaries and beneficiaries of the Primary Education System under MSB in Vadodara city. The interviews were unstructured to give the researcher ample opportunity to probe wherever required and collect data relevant to the study.

The main areas covered in each Interview Schedules are listed below –

- *Interview Schedule for Principals of Schools.*

Necessity of Balwadi - need to make it compulsory, Annual and Lesson Planning, Textbooks used in MSB schools, The prevailing system of evaluation, Inspection conducted in the schools, Conducting of extra curricular activities,

Training programs - relevance and effectiveness, Parental Involvement in school activities, Opinion as Administrator regarding the present status of functioning.

- Interview Schedule for Teachers of Schools.

Necessity of Balwadi, need to make it compulsory, Annual and Lesson Planning, Textbooks used in MSB schools, The prevailing system of evaluation, Conducting of extra curricular activities, Teaching of various subjects; difficulties faced and their causes, Training programs – relevance and effectiveness, Parental Involvement in school activities, Opinion as Teacher regarding the present status of functioning.

- Interview Schedule for Administrators

Necessity of Balwadi, need to make it compulsory, Qualification of Teachers, Inspection conducted in the schools, the prevailing system of evaluation, Training programs – relevance and effectiveness, Special initiatives for quality enhancement.

- Interview Schedule for Parents.

Necessity of Balwadi, need to make it compulsory, Textbooks used in MSB schools, The prevailing system of evaluation, Conducting of extra curricular activities, Parental Involvement in school activities, Reasons for sending child to school, If decision to discontinue then probable reasons.

- Interview Schedule for Students.

Reasons for liking or disliking school, Reasons why learning is interesting or disinteresting, Reasons for good or poor performance in school related activities.

3.11.5 INFORMAL DISCUSSION AND DAILY NOTE-TAKING

These two instruments were also used to collect information related to the study.

3.12 MODE OF CONSTRUCTION AND IMPLEMENTATION OF TOOLS.

- *Construction of information schedule.*

An information schedule was prepared to gather information regarding different aspects of Municipal Primary Schooling. This necessitated an initial investigation and identification of all those components (input, process, and output) that needed to be considered to gather the required information.

Having identified the relevant components about which information had to be elicited, a rough draft was designed. This rough draft was then referred to experts (Coordinators, Principals and senior teachers) and their opinion sought on the validity of the items, their comprehensive coverage of all aspects of primary schooling, and the lucidity of the language employed in the preparation of the tool. On their recommendations, this tool was modified, certain items deleted, some added, some rephrased for better clarity and some reorganized for a more systematic and logical organization of items.

Having incorporated these modifications a second draft was prepared and once again referred to the same experts. Some minor comments and recommendations were once again incorporated and the final draft of the information schedule was finally drafted.

- *Construction of Observation Schedule*

For the Observation schedule also, a similar procedure was adopted. The feedback received from the same experts was used to modify the tool so as to increase its validity in capturing the classroom transactions in their entirety.

- *Construction of Interview Schedule*

The interview schedules were drafted likewise. The relevant areas were identified and items were designed. Once again these schedules were referred to experts (here, experienced School teachers and Principals) who were requested to throw light on the comprehensibility, coverage and relevance of included items.

It was on their recommendations and the investigators own experiences also, that the interview schedules were finally made unstructured to give the researcher ample opportunity to probe and delve deeper into certain areas so as

to at times uncover latent facts as also to understand better the various mechanisms and their functioning.

Regarding Language of the tools.....

Initially, the tools were all constructed in English. However, since all the respondents were conversant with Gujarati, the information schedule was finally translated into Gujarati. The translated version was examined by language experts for their ambiguities and recommendations were duly incorporated.

The observation schedule was used by the investigator personally and thus necessitated no translation. Thus, the language of the interview schedules and the observation schedule remained English during the course of data collection as it was primarily being conducted by the investigator herself.

▪ *Design and Construction of Achievement Tests.*

The National Policy on Education (NPE, 1986) emphasized the need for laying down well-defined standards of learning which would be an appropriate indicator of the effectiveness of the system. Thus was formulated the MLLs – i.e. Minimum Levels of Learning, so that all children, irrespective of caste, creed or sex have access to education of a comparable standard. These Minimum Levels of Learning have been stated as expected learning outcomes in terms of observable terminal behaviors and are expected to be achieved by all students at the end of a particular academic year. The MLLs approach has been adopted in the Primary schools of Gujarat since June 1994.

Thus, quality of learners' academic achievement refers to the acquisition of these set of competencies at the end of each class or grade.

The methodology adopted in the construction of the achievement tests was as follows –

3.13 PREPARATION OF TEST FRAMES.

Achievement testing forms one of the significant components of this study to understand the quality of Primary schooling. The achievement test was conducted on the students of Std. V, VI, and VII in the two subjects i.e. Language (Gujarati, Hindi, Marathi, and

Sindhi) and Mathematics. Also, the achievement test was a written one and focused on all those competencies, which could be assessed through a paper pencil test only. From the elaborate set of competencies, which have been designed for grades V, VI, VII; selected and representative competencies were taken up for the achievement test. *This was done in consultation with experts and senior schoolteachers.* Thus, it may be noted that

- The competencies finally chosen to be included in the achievement test were representative and did not exhaustively include all those specified in the given grades.
- Only those competencies were included which could be measured through a paper pencil test.

The achievement scores arrived at were thus indicators of relative levels of achievement of students in these two subjects and could not be used to indicate the exact amount of learning outcomes which these students had acquired during the course of that academic year. (Govinda & Varghese, 1991).

Preparation of Test Items and Pilot testing.

In accordance with the selected competencies, items were designed to be included in the achievement test, which would effectively measure the learning outcomes of the students. This elementary frame thus developed was then discussed with a number of experts - in this case, very senior language and mathematics teachers of the schools under M.S.B. The focus of the discussion was –

- Validity of included test items with respect to their corresponding selected competencies.
- Language of items and instructions.
- Feasibility of time for smooth completion of test.

On their recommendations, minor modifications were included and the tests were modified. The initial version of the test was in Gujarati language and later on the tests were translated into the other three languages which are also the medium of instruction in the Primary Schools under M.S.B. Vadodara. The translated versions were referred to

the senior and experienced teachers of the same medium and the necessary modifications were made finally, these tests were administered on students of the respective mediums and grades. The students were encouraged to express any difficulty they may have experienced while taking these tests. Their recommendations and suggestions were used to modify the tests and thus the achievement test was readied for administration to all the students of std. V, VI, VII in the selected schools. 685 students appeared for this achievement test in the four mediums of instruction.

Workshop on achievement test evaluation.

In order to evaluate the Achievement Tests in the four different mediums of instruction both content mastery and language proficiency was necessary. Thus, it appeared that evaluation would have to be taken up by persons conversant both with the language and the subject being evaluated. Hence, school teachers were requested to help in the evaluation. On their consent, a workshop was organized and the scheme of scoring and the subtleties of scoring in the language paper were discussed. The final scoring scheme was finalized based on the requirements as specified by the investigator.

3.14 DATA ANALYSIS

The nature of data in the study demanded both quantitative as well qualitative analysis - Factual information related to infrastructure, teaching-learning materials, achievement test scores, extra-curricular activities conducted, training programmes and time-table were analyzed quantitatively using frequency and percentage analysis.

The information collected through observation, interviews, informal discussion and daily note taking were qualitatively analyzed – this involved both an ongoing analysis as well as analysis at the end of the data collection. The data analysis techniques used were Data structuring, Data reduction, Conclusion drawing and summarizing, The process of Triangulation was employed to verify data collected from various sources.

The same is depicted in the following figure.

FIGURE - 3.1 : TRIANGULATION OF DATA

