CHAPTER – 3

METHODOLOGY

3.0   INTRODUCTION

In the previous chapter two, a review of literature was presented on the quality of education in general and quality assurance in particular. From the literature in chapter two it emerged that the quality of education can be measured using quality indicators to determine the efficiency of top performing schools. It also emerged that quality of education is not only confined to numerical indicators, rather it is a relative concept that defines what is perceived to be good for the school. This chapter discusses the research methodology for the study. It is fundamental to any research that an adequate methodology is adopted and a well-articulated design be developed to enable a researcher to answer research questions, objectively and effectively. Brink and Wood (1994) assert that the purpose of a research design is to provide a plan for answering the research questions. It is therefore a framework or blue print with a set of instructions to the researcher which details what data is needed and how to collect and measure it to ensure its accuracy and reliability. Research Methodology in this study includes Research Design, Population and Sample, Data Collection, Data Analysis Techniques employed and Tools and Techniques of the study.

The case study descriptive analysis was selected for the study to find out the outcomes and effectiveness of the implementation of Quality Assurance Systems in the State Board Secondary Schools of Gujarat. Quality of education can be measured using quality indicators to determine the

efficiency of the top performing schools. Present study finds out the school quality based on the following indicators i.e. School Community Relations, Infrastructure and other resources, Curriculum transaction in classroom, School Leadership, Student's Achievement and Teacher's Professional Development. The primary focus of this study was to identify the best practices evident at the top performing secondary schools, to describe the quality culture at the school, and identify any programs and practices that were in place and contributed to the school's achievement. Thus an in-depth case study on the Quality Assurance System and best practices present in the top performing secondary schools of Gujarat was expected to yield strategies that can be replicated to achieve success; programs found to be beneficial to the school can be utilized in other schools as well.

3.1. RESEARCH DESIGN

This study employed a mixed methods design, which included procedures for "collecting, analyzing, and interpreting quantitative and qualitative data in a single study" (Onwuegbuzie & Leech, 2006) to answer research questions. The central premise underlying the use of mixed methods is that the combination of quantitative and qualitative approaches together provides a more comprehensive understanding of research problems than either approach used by it (Creswell & Plano Clark, 2007).

The quantitative portion of this study was focused on measuring the teachers, parents and students responses on the survey questionnaire in order to study the quality indicators in the secondary schools. The survey was used to obtain information regarding the responses given by teacher's parents and students perceptions on school quality. The study included survey of 20 top

performing secondary schools from Baroda City by implementing five point scale. Survey data was then coded and entered into the statistical program. Descriptive statistics were used to summarize survey data, whereby Mean, SD, T-Values, and ANNOVA were computed to obtain information regarding the responses given by teachers, parents and students. Qualitative data analysis included identifying and organising those surveys that contained responses to the questionnaires, experiences, personal perspectives and meanings, values, norms, and beliefs regarding quality assurance practices in the top performing secondary schools. Inferences on quantitate data was based upon statistical analysis results, inferences about qualitative data were made based upon themes derived from participants open ended responses. Meta inferences or the integration of the inferences based on the qualitative and quantitative strands. (Tashakkori & Teddlie, 2003).

Thus, the purpose of this study was to investigate quality indicators of top performing secondary schools of Gujarat Secondary and Higher Secondary Education Board. What quality assurance systems are present in these schools and best practices followed to remain at the top in a consistent manner? How it leads to high student achievement.

3.1.1. Description of Population and Sampling Procedure

The population of the study comprises of all the Secondary (644) and Higher Secondary (361) schools affiliated with the Gujarat state Secondary and Higher Secondary Education Board. As far as the secondary schools (GSHSEB) are concerned there are only a few secondary schools run by the government, majority of the secondary schools are run by trust and funded by

grants from the government. There are secondary schools in tribal areas known as Ashram Shalas with hostel facilities; these are run by the welfare department of the government in rural and tribal areas runs. For the administration of secondary schools in Gujarat the Minister of Education takes all policy decisions while the secretary Education looks after secondary and primary education. At the State Level the Commissioner of schools coordinate with the Board & looks after secondary education and at the district level he is assisted by the District Education Officer. The government with the Education Minister as its chairperson constitutes the textbook Board and for developing techniques and tools for imparting education has Gujarat Institute of Education Technology (GIET).

Purposive sampling technique was used in identifying and selecting the sample of top twenty secondary schools of Gujarat for the initial survey, this was guided by the views of Marshal (1998) who argues that purposive sampling is strategic informant sampling which is "selecting the people whom you think can give you the most information". Purposive sampling technique was used to select the sample schools for the study. The criteria evolved to select the sample schools were as follows;

1.   The schools which were showing consistent high result for the SSC Board Examination for the last five consecutive years in the central Gujarat.

2.   Schools with students of top ten district and state level ranking in SSC Board Examination.

After identifying the schools and arranging them in order as per the academic performance of the students in SSC Board Exams, the top twenty schools were selected for the present study. Teachers, parents and students were then selected randomly from each of the schools to collect data to study quality indicators in schools through questionnaire survey.

The following table-3.1, describes the numbers of top performing schools in central Gujarat from 2009 to 2013.

Table-3.1

SSC Board results in Central Gujarat-2009-2013

Districts in Central Gujarat	No. of schools with 100% Result 2009	No. of schools with 100% Result 2010	No. of schools with 100% Result 2011	No. of schools with 100% Result 2012	No of Schools with 100% Result 2013	Top Ten State Rankers 2009	Top Ten State Rankers 2010	Top Ten State Rankers 2011	Top Ten State Rankers 2012	Top Ten State Rankers 2013
Vadodara	23	34	33	47	34	16	15	21	22	21
Kheda	13	18	22	53	34	14	19	15	10	10
Anand:	31	25	19	44	31	20	21	15	16	13
Dahod	04	07	10	26	15	17	18	14	13	14
Panchmahal	12	13	13	33	13	06	16	13	01	01

(Source: SSC result booklet (2009 to 2013) Gujarat Secondary & Higher Secondary Education Board. Gandhinagar)

The above table-3.1, describes the schools that have scored 100 % result in the Secondary Schools Certificate Examination (SSC) conducted by Gujarat Secondary and Higher Secondary Examinations Board in Central Gujarat from the year 2009 to 2013. It can be noted from the data in the above table that Vadodara district has the maximum number of schools scoring 100 % Board result consistently for five years, whereas Kheda and Anand districts have lesser number of schools than Vadodara. Also the top ten state rankers are in more in numbers in the Vadodara district again followed by Kheda and Anand districts. Thus, Vadodara district was selected for the identification of top performing English medium secondary schools on the basis of the available data and researcher's convenience. From these top performing twenty schools, top four schools were selected for the in-depth case studies.

3.2. TOOLS FOR DATA COLLECTION

During the field work data was collected employing participant and non-participant observation technique, unstructured interview and document analysis. This research work is planned to be conducted by adopting the mixed methodology. Researcher adopted multiple sources for data gathering. The following tools were used for data collection.

Interview Schedule

Interviewing is a valuable assessment tool because it allows the participant to share their experiences, attitudes, and beliefs in their own words. The use of direct quotations in the assessment finding helps the researcher present an accurate depiction of what is being evaluated. Interviews can be structured, semi-structured or unstructured. Structured interviews are typically

very controlled, with fixed, pre-planned questions. Semi-structured interviews involve some planning, but there is freedom to vary the course of the interview based on the participant's responses. Unstructured interviews are the least rigid, and involve little to no preplanning. Interviews offer the possibility of modifying one's line of enquiry, following up interesting responses and investigating underlying motives in a way that postal and self-administered questionnaires cannot (Robson, 1993) therefore enhancing reliability of the data.

The researcher conducted unstructured and open-ended in-depth interviews. An in-depth interview is an open–ended, discovery–oriented method that is well suited for describing both program processes and outcomes from the perspective of the target audience or key stakeholder. In essence, in-depth interviews involve not only asking questions, but the systematic recording and documenting of responses coupled with intense probing for deeper meaning and understanding of the responses. The researchers questions were "directed to the participant's experiences, feelings, beliefs and convictions" (Welman & Kruger, 1999, p. 196) about quality.

Researcher developed interview schedules and administered to the key officials of the Gujarat State Board and Principals of the schools to gain insight into the quality assuring mechanisms followed by the board and the quality culture and programs of the school thus, it aimed to obtain relevant data regarding the participants' personal perspectives and meanings, opinions, values and beliefs concerning the current quality assurance practices in their respective schools.

Researcher developed the interview questions based on the literature and personal experience in an effort to address in detail the guiding questions of the study. Validity of interview questions is addressed by grounding the questions in the literature. Research reveals that successful schools had strong leaders with high expectations for teachers and students and who emphasized upon teaching and learning (Edmonds, 1979; Purkey& Smith, 1983; Kitchen et al., 2004; Newstead, Saxon, &Colby, 2008; Hallinger, 2003). Questions addressed these leadership components from a variety of perspectives. Questions were open ended and allowed participants to share their opinions about causes for school and student success, it allowed participants to share what they believed were the most influential actions and activities that they have experienced, which could have included responses about school leadership and expectations of the principal. Questions were structured to elicit responses about school success, positive culture of improvement, student learning, consistent staff development, and celebration of success as these components are critical to school success. Questions were asked on culture and communication of the school, participants were asked to describe what made the school different compared to other schools and role of school in the context of staff recognition and celebration of successes.

The interviews were conducted in person, at the school site. All interview participants consented to having their interview session audio recorded to ensure accuracy. The interviews added depth to the findings from the surveys. Interviews allowed the participants to elaborate on topics and allowed the researcher to gain further insight into their perceptions of the participants about reasons for the success of the school.

Questionnaires

Questionnaire as a data collection tool is very popular in scientific research and is known to be the most frequently used instrument in educational research. It is considered to be probably the single most common research methodological tool that is relatively well understood by most researchers. A questionnaire is a set of systematically structured questions used by a researcher to get needed information from respondents. The questionnaire may be self-administered, posted or presented in an interview format. It may include check lists, attitude scales, projective techniques, rating scales and a variety of other research methods. Likert's scale is one of the most widely used itemized scales. The end-points of a Likert's scale are typically "strongly disagree" and "strongly agree." The data are typically treated as interval scale. When using this approach to determine the total score for each respondent on each store, it is important to use a consistent scoring procedure so that a high (or low) score consistently reflects a favorable response. This requires that the categories assigned to the negative statements by the respondents be scored by reversing the scale. It is easy for the researcher to construct and administer this scale, and it is easy for the respondent to understand.

In this study open-ended questions were used on Likert's five point scale. Likert-type scale of was administered to all teachers, parents and students in each of the twenty schools. The items surveyed teachers' perceptions about their own practice, pedagogical preferences, assessment, the affective domain of their teaching, their observations of leadership, and the

quality culture of the school. Open ended questions enabled the respondents to express general attitudes and opinions that helped the researcher to interpret responses to structured questions. Thus, they were useful in identifying underlying, motivations, beliefs, and attitudes. The questionnaires were developed and administered to the teachers, students and parents.

Once the questionnaires had been developed, experienced practitioners should review the questionnaire to ensure that the items were unambiguous and would reduce the necessary information for the research study (Gall et al., 2003; Postlewaite, 2005). The questionnaires used in the study were reviewed and approved by the Department Professors to ensure that the questionnaires produced the necessary information needed for the study. The final format of the questionnaire includes six dimensions which contains 30 questions. The last dimension is an open question and seeks aspects and comments from the participants about quality assurance practices in school, and were evaluated qualitatively (see appendixes). The dimensions that are included in the questionnaire are entitled as School Community Relations, Infrastructure and other resources, Curriculum transaction in classroom, Teacher's Professional Development, Student's Achievement and an open question for comments and different opinions for quality practices followed in the school. Each quality indicator was used as a means of identifying and understanding the perceptions of teachers, parents, and students in the top performing secondary schools in this study. Three sources of primary data used in the study were questionnaires, focus group discussion and interviews. Livesey contended that any data that was collected personally by a researcher is considered to be primary data.

Teacher Questionnaire

Teachers had more questions than both parents and students. A copy of the questionnaire is provided in Appendices-F. Questions 1 up to 5 on the teacher questionnaires addressed School Leadership while questions 6 up to 9 questioned the Infrastructure, Student achievement were addressed in questions 10 up to 13, and questions 14 up to 17 requested responses concerning Teachers Professional Development. Curriculum Transaction was surveyed beginning with questions 18 upto 21, and questions 22 up to 25 allowed teachers to comment on the School Community Relations in their schools.

Parent Questionnaire

The questionnaire administered to parents consisted of 28 questions. A copy of the questionnaire is provided in Appendix E. Questions 1 up to 5 requested the parents to reflect on School Leadership at the secondary schools. In addition, questions 6 up to 9 dealt with the Infrastructure. Parents expressed their feelings concerning Student Achievement using questions 13 up to 16, while questions 17 up to 20 gave parents an opportunity to know the Teachers Professional Development. Curriculum Transaction was rated on questions 21 up to 24, and questions 26 up to 28 requested parents to respond to School Community Relations in these secondary schools.

Student Questionnaire

Student questionnaires examined similar content using 24 questions. A copy of the questionnaire is provided in Appendix-G. Students used questions 1 up to 4 to respond to their School Leadership. Questions 5 up to 8 gave

students an opportunity to reflect on their School Infrastructure, and questions 9 up to 12 requested a response regarding Student Achievement. The Teachers Professional Development was addressed in questions 13 up to 16 and questions in Curriculum Transaction were from 17 up to 20. Lastly, questions 21 to and 24 requested students to respond to School Community Relations in their schools.

Document Analysis

Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic. Analyzing documents incorporates coding content into themes similar to how focus group or interview transcripts are analyzed. There are three primary types of documents: Public Records, Personal Documents, and Physical Evidence. Along with interviews and observations, phenomenologist have been known to utilize the study of documents and artifacts (pictures poetry, music, etc.) to gather additional data (Sheperis, Young, & Daniels, 2010) especially in providing data on the background and historical context of this study as well as the participants. Thus, document analysis serves two purposes: (1) to enrich and enhance results obtained through interviewees and questionnaires, and (2) triangulate results with survey findings.

In this study the document analysis was conducted to uncover information regarding policies on quality assurance in secondary education, school's student achievement data as well as policy intentions of quality assurance, staff and student profiles etc. The researcher collected the

documents which contained information about the policies of school, goals of schools, vision and mission, communication regarding interactions/dealing between principal-teachers, teachers-learners and principal-learners. Some of the documents identified were the school diary, teachers log book, School board results, guidelines, circulars, the annual calendar of schools, the school magazine, newsletter, the muster roll, the record of students, the record of students' result in Class X and XII (2009-2013), published materials related to secondary education and quality assurance circulars (regarding fee structure, schedules for admission, and communication to parents).It was observed that several top-performing schools attempted to create community within their handbooks by including parents' home and cellular telephone numbers in school calendars (and in one instance similar information for parents).Such information would appear to foster communication between parents, teachers, and students outside school hours.These documents were read carefully to identify significant decisions made which influenced the development of school, the nurture of quality Culture and which reflected the influence of quality Culture in school.

Focused Group Discussion

A focus group is a small-group discussion guided by a trained leader. It is used to learn more about opinions on a designated topic, and then to guide future action. The focus group is a qualitative method of assessment, encouraging a free flow of ideas. It is typically led by one moderator but can sometimes be assisted by a scribe or other team members. For assessment

purposes, a focus group will usually consist of 8-12 prescreened members and can last anywhere from 1-2 hours. In this study the group of parents of the sampled schools was the members of the focused group discussion where the researcher herself steered the group by initiating the discussion on the topic of quality assurance to know their opinions and perceptions on quality assurance practices in their schools. From each school minimum five PTA members were selected randomly for focus group discussion.

Observation Schedule

Observations are a critical component of data collection in qualitative studies. While interviews and surveys do provide insight into the inner workings of the environment, they are restricted by the memories, communication abilities, and openness of those participating in the interview. During the study, researcher conducted on-site observations of the following routine events at the sample schools: academic activities, PTA meetings, events, and meetings of the staff and school leadership. Thus some good practices in the schools have been formally observed during the field study. In so doing, researcher was able to fill the role of participant-observer. In this role, the researcher observes and interacts closely with participants without engaging in activities that are at the core of the group's identity (Stake, 1995). Researcher took field notes to document data gathered from the observations. Additionally, researcher used two observation protocols (Appendixes B & C) to help clarify the data gathered during the observations. While observing, researcher noted the actions of the school principal, where and how their time

was spent, and the nature of the principal's interactions with teachers, staff, students, and parents. During classroom observations, researcher focused on the methods and content of instruction, the level of engagement and the actions of the students, the classroom learning environment, the interaction between teachers and students, and the attitudes and actions of the teachers and students. Observation of staff meetings focused on the leadership of the principal. The focus and content of the meeting (as set by the principal), the responsiveness of the staff, and the interaction between the two were also areas of note. Observing the PTA meetings provided researcher with an understanding of the attitudes and beliefs of parents about the school and staff and provide vivid examples of interactions between parent and teacher. Though the researcher wanted to observe all the processes occurring in school, it was not practically feasible. Therefore a sampling for observation in terms of period of observation and sites of observation was done to ensure that a variety a processes occurring in school are observed. Each school was observed for a minimum period of ten days and for minimum of four hours daily. The time slots identified for the observation were different periods of a school day: the pre-recess session and the post-recess session.

3.2.1. Norms

For the interpretation of the scores of the top performing secondary school. Table 3.2 shows the raw score norms for the survey questionnaire for the top performing secondary schools.

Table: 3.2

Raw Score Norms for Top Performing Secondary Schools

Interpretation	Range of raw scores
High	4.5-5
Moderate	3.5-4.49
Low	0.5-3.49

Min Mean Value = 3.43

Max Mean Value = 4.49

Medium Mean Value = 3.94

The scores of the teachers, parents and students of the top performing secondary schools on the quality indicators were 04.00, 3.92 and 03.90 respectively. This showed that the obtained scores from all the three respondents in the survey were within the Moderate Range.

3.2.2. Validation of the Tools

The tools were given to the expert's comments; tools were then piloted in one of the 20 schools, to establish the reliability and validity of the instruments. The interview schedule and rating scale were given to the members to check if the questions are composed in operational terms that could be understood by school members, and if more questions have to be added. Notes are taken during the interview, in order to be used to check the effectiveness of the questions, if answers obtained from the questions are useful for the questionnaire. After necessary adjustments were made on the tools, the refined drafts of the questionnaire and interview schedule were sent to the experts again for further comments. Email and face to face meeting were arranged with the experts to further discuss about the adjustments and the instruments. Once the consensus build on with the experts, the questionnaire and interview schedule were finalized and ready to be used in data collection.

3.2.3. Triangulation.

Triangulation of data sources and analytical perspectives increases accuracy and credibility of the findings (Patton, 1987). Denzin (1978) and Patton (1999) identify several types of triangulation. One of the type is method of triangulation, which is checking consistency and validity of findings generated by different data collection methods. Another type is triangulation of sources, which examines the consistency of information from different data sources. The third is analyst triangulation, using multiple analysts to review findings. Fourth is theory/perspective triangulation, which uses multiple theoretical perspectives to examine and interpret data. Triangulation in this study is applied through the use of multiple data sources: focus group discussion with the parents, questionnaires for teachers, parents, students and interview with the school principals, thus collecting data from these sources represented several different viewpoints about the same situation.

3.3.   SOURCES OF DATA COLLECTION :

Multiple sources of data were identified for the present study. Various stakeholders related to school formed one source of data. These were the principals, teachers, students, parents and Trustee members. The documents of schools like the school diary, circulars to staff and parents, school magazines, articles published and information displayed on the school websites were another source. In addition to this, observation of the events and informal interaction with the student, teachers and principal during the field visit were also used as source of data.

Table-3.3

Instruments of the Study

RESEARCH TOOLS	SOURCE OF INFORMATION	NATURE OF INFORMATION
Semi Structured Interview Schedule	Principals	Experiences of the participants
Focused Group Discussion	Parents	Opinions and perceptions on Quality Assurance
Observation Schedule	Teachers, Students	Informal interaction
Documents	Institution	Public Records, Personal Documents, and Physical Evidence.
Questionnaire	Teacher, Parents, Students	Identification of underlying, motivations, beliefs, and attitudes on quality

The above table-3.3, displays the different research tools and the source of information. It describes the nature of information to be collected from the different sources in the schools.

3.4. PHASES OF DATA COLLECTION

Following were the four phases for conducting the study.

Phase-1

In phase-I, Researcher selected twenty top performing schools using purposive sampling technique. The criteria evolved to select the sample schools were as follows;

1. The schools which were showing consistent high result for the SSC Board Examination for the last five consecutive years in the central Gujarat.

2. Schools with students of top ten district and state level ranking in SSC Board Examination.

Phase-II

In phase II, Researcher conducted a survey by implementing the survey questionnaire to the teacher's parents and students to study quality indicators in these top twenty secondary schools.

Phase-III

In phase III Researcher identified four top performing schools from the analysis of the survey questionnaire for in-depth case study.

Phase-IV

In phase IV researcher conducted in depth case studies on four schools identified as top performing from the survey.

The following figure displays the phases of data collection employed in the study.
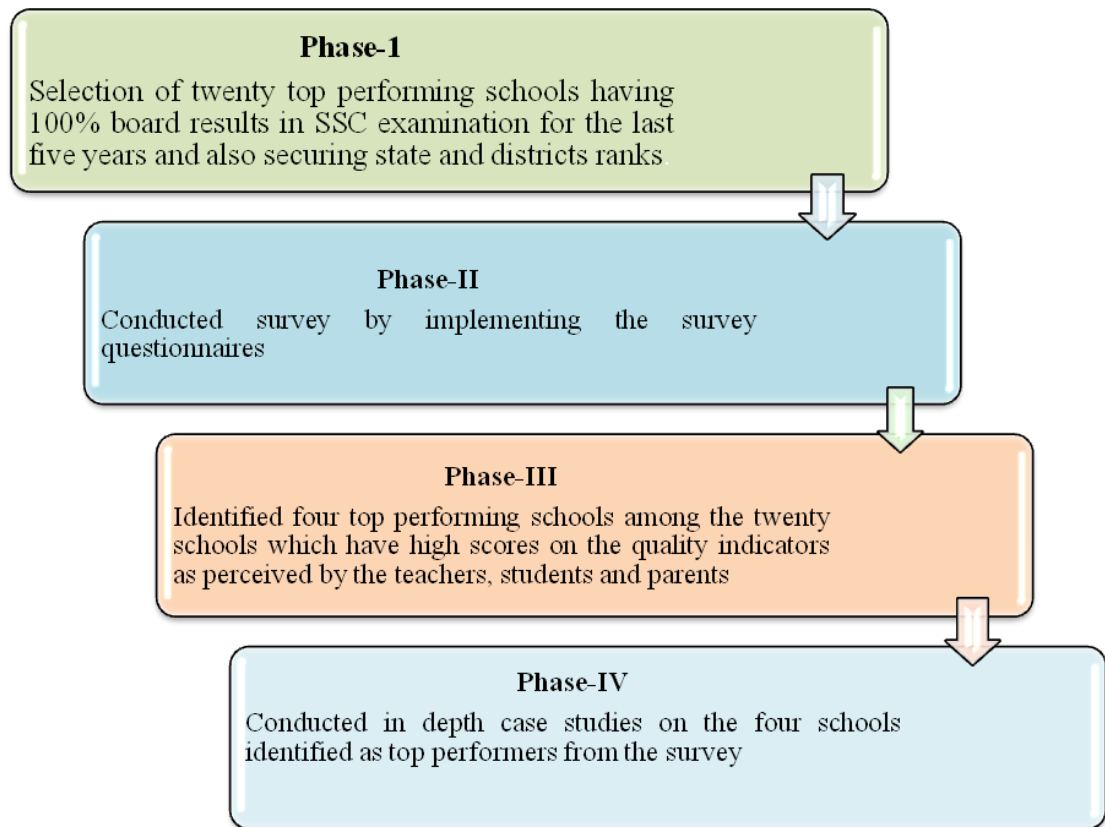
Phase-1

Selection of twenty top performing schools having 100% board results in SSC examination for the last five years and also securing state and districts ranks

Phase-II

Conducted survey by implementing the survey questionnaires

Phase-III

Identified four top performing schools among the twenty schools which have high scores on the quality indicators as perceived by the teachers, students and parents

Phase-IV

Conducted in depth case studies on the four schools identified as top performers from the survey

Figure-3.1

Phases of Data Collection

Data was collected over a year's period in the academic year 2013, with the majority of research taking place in the first three months and with follow-up visits to schools in the last three months. At each school, interviews and observations were conducted according to the data collection plan. The data includes interviews with the principals, focus group discussion with the students, questionnaire for teachers, parents and students, as well as observations of classrooms, teacher planning meetings, and other meetings and events related to the school. Additional interviews were conducted with district administrator to understand the quality assurance practices followed by the District Education Officers i.e. the Government machinery.

The school list with 100% result in the last five years in Vadodara, provided by the DEO, was taken as an initial sample for the survey. Researcher took necessary help from GCERT and the GSHEB authorities and the reports published by the Gujarat Secondary & Higher secondary Education Board. Thus, the top twenty schools were identified for the study based on the data obtained from the District Education Officer and the Board Examination Result Booklet and subsequently the subjects in the sample schools were identified for the collection of the data.

The following table-3.4, displays the data of top twenty schools. This list is not in order of merit but indicates only the schools identified by the researcher on the basis of high achievement in the SSC Board for five years (2009-2013).

Table-3.4

Top performing schools based on the SSC Board Examination

Sr. No.	City	SSC Board Result in %				
	Vadodara	2009	2010	2011	2012	2013
1	School-1	94%	89%	96%	100%	100 %
2	School-2	87.51%	100%	93.75%	69.23%	70.50%
3	School-3	100%	100%	100%	100%	100%
4	School-4	100%	92.29%	89%	100%	100%
5	School-5	100%	100%	100%	100%	100%
6	School-6	98.24%	96.00%	94.00%	100%	90.00%
7	School-7	94.25%	90.56%	96.89%	78.36%	87.55%
8	School-8	89.34%	75.24%	98.25%	95.68%	98.28%
9	School-9	100%	100%	100%	100%	100%
10	School-10	100%	100%	100%	100%	100%
11	School-11	98.56%	94.14%	89.00%	95.00%	100%
12	School-12	100%	100%	98.37%	100%	100%
13	School-13	90.00%	95.29%	89.29%	98.00%	100%
14	School-14	98.68%	100%	100%	100%	98.78%
15	School-15	77.68 %	89.89%	98.45%	98.44%	96.24%
16	School-16	100%	96.78%	100%	100%	98.26%
17	School-17	100%	100%	100%	100%	100%
18	School-18	100%	100%	98.66%	87.56%	88.58%
19	School-19	89.88%	98.55%	90.00%	98.29%	88.59%
20	School-20	100%	98.56%	100%	100%	98.28%

Source: (District Education Officer, Vadodara)

Taking into consideration the above listed schools in table-3.4, the top performing twenty schools were identified and the principals, teachers, students and parents were taken into consideration for the survey. Tools were implemented on the selected samples in these schools and data was obtained.

For the purpose of quality indicator survey, 10 teachers, 5 parents and 5 students from each school were randomly selected. The following table-3.5, describes the sample size.

Table-3.5

Sample Details

Sr. No.	Size of the Sample	Sample Group
1	20	School Principals
2	200	Teachers (10 teachers from each school, selected randomly)
3	100	Parents (05 PTA members from each school selected randomly)
4	100	Students (05 students of class 11 from each school selected randomly)

The above table-3.5, describes the size of sample selected from the top twenty schools identified for the study. Where all the twenty school Principals were taken as the sample, 10 teachers form each school was selected randomly and 200 total teachers were taken as the sample, 05 parents were selected randomly from the PTA committee from each school so the total of 100 parents were taken as the sample and 05 students were selected randomly from class XI of each school and so the total of 100 students were taken as the sample for the study. Thus, from the top 20 secondary schools in Central Gujarat, top four schools having the high scores on quality indicators as perceived by teachers, parents and students were identified for the in- depth Case Studies. These Case Studies portray the quality assurance system and the best practices in the school with the view to showcase the institutional environment in which quality education is possible.Researcher was granted

permission by the school management and the principals to conduct the research. Researcher conducted meetings and informed participants of the purpose and nature of the study. Though the Researcher was an outsider to all the schools selected for the Case study, however, researcher had the prior knowledge of the working of the schools as was working in secondary schools both as a teacher and Secondary Section Coordinator and so was familiar with the working of schools to a large extent.

The below Table-3.6, describes in detail about the sampling, research tools used, nature of data collected and scheme of analysis.

Table-3.6

Schematic Presentation of Major Methodological Details

Sr. No.	Obj.	Sample	Research Tools	Nature of information	Scheme of Analysis
1.	1	Government Documents	Policy Documents (GSHSEB, GCERT Reports)	Qualitative data in terms of related policies and programs of quality assurance in secondary schools	Content analysis
2.	2	20 Principals	Semi structured interview schedule	Qualitative and Quantitative	Experiences of the participants
		200 Teachers	Questionnaire		Quantitative descriptive analysis
		100 Parents	Questionnaire and Focused group discussion		Quantitative descriptive analysis, Identification of beliefs and attitudes on quality assurance
		100 Students	Questionnaire		Quantitative descriptive analysis, Opinion and perception on quality assurance
3.	3	4 Schools	Case study method In-depth study of Quality Assurance Practices through participant observation, interviews and focused group discussions.	Qualitative data	Qualitative analysis

In the table-3.6, above for each objective, sample selected, the research tools used as per the sample requirement, nature of information sought and the scheme of analysis are described that makes it very clear the manner in which the study proceeds, and data collected. Thus, after the selection of the respondents from the top twenty schools conversations were held with the school principals and once the principal agreed to participate in the study, and agreements had been established with the school principals the researcher

begun the process of gathering data from the twenty schools. One more efficient school was selected for pilot study, conducting the site visits in this school gave an opportunity to test the study protocols and procedures, and to refine the study instruments. Prior to each site visit, researcher collected and analyzed documents relevant to the schools (e.g. curriculum, schedules, school diaries, policies, student assessment data, student work, school websites, publications, etc.). Interviews with the principals were then conducted to gather preliminary school information. Thus, a working schedule for the schools site visits was developed. Each visit included principal & management interviews, focus group discussions with the PTA, questionnaire for teachers, parents and students. A total of twenty interviews were conducted over the course of the study. Researcher asked principals to discuss what has made their school successful and also asked them to share the best practices followed in the school as well as their school's policies, curriculum, professional learning opportunities, social atmosphere, etc.

Each site visit also included on-going ten minutes observations of classes in progress, observations of teacher planning or common time, staff meetings, front office exchanges, transportation drop-off and pick-up procedures, as well as observations of corridor behavior, playground practices, and lunch room habits. These observations included time before and after school. These procedures allowed for the inclusion of observations of programs within as well as immediately before and after the school day, such as homework remedial classes, disciplinary actions, intervention courses, co-curricular etc. For the classroom observations, researcher identified the

secondary classes, content area, student-teacher ratio, and classroom procedure time (beginning, middle, end or transition). Notes were also taken with regards to student engagement, use of technology, and teacher role (coaching/conferencing, facilitating, monitoring, presenting, or working independently).

During the course of the site visits, these formal observations were recorded by entering the data; date/time, school name, school grade level, content area and grade level of observation subject, student engagement level, technology use, teacher role, and student-teacher ratio. Researcher also kept notes throughout the site visits regarding their informal observations, spontaneous conversations, and focus group discussions. This data was referenced throughout the visit to identify areas or subjects that needed further information, which was often gained in the focus groups or observations of the second day of the site visit. Once all the case study site visits were completed, the researcher analyzed the data. Individual case study data were created for all the four schools included in the study. These files included site documents; interview notes observation protocol data, field notes, and other documents. In some cases, additional data was accumulated or clarified with extended research of school documents or brief follow-up conversations with school principals.

The analysis of data from the field research led to establishing a preliminary list of recurring themes and distinguishing features of high performing schools. Using all the analysis techniques mentioned above, researcher then developed internal memos for each of the distinctive themes and/or features found in the top performing schools. This process led to the

identification of five broad features that distinguished the high performing schools. The five broad features were then refined and supported with specific sample practices found in the top performing schools in the study. Thus, it was observed that the schools have good infrastructure and resources with large spaces for all the activities. It was also found that the schools have ability to recruit quality teachers to maintain the quality in teaching learning in schools. The participants varied in the number of reasons they listed as contributing to the schools' success. The responses in general, fell into three broad categories; *learning culture, effective teaching and school community relations* and these quality indicators were thus included in the presentation of cases.

3.5. DATA ANALYSIS

In this study, the intention was to investigate quality assurance practices in top performing secondary schools. Thus, the unit of analysis is institutional level quality assurance systems and practices. Of the seven stages of the mixed methods data analysis processes suggested by Onwuegbuzie and Teddlie (2003), four stages, namely data reduction, data display, data consolidation and data integration were employed in this study. According to the authors, data reduction refers to condensing the dimensionality of quantitative data (e.g. via descriptive statistics, exploratory thematic analysis, cluster analysis) and the qualitative data (e.g. via exploratory thematic analysis etc.); data consolidation deals with combining both quantitative and qualitative data to create new or combined variables; and data display refers to describing virtually the qualitative data (e.g. graphs, charts, etc.); in the data integration stage, both qualitative and quantitative data are integrated into either a whole or separate sets.

In this study, the data collected through questionnaires were coded, entered, cleaned and analyzed using the Statistical Package for Social Sciences SPSS computer software. The quantitative data was reduced into descriptive statistics such as Mean, Standard Deviation-tests, and one-way ANOVA.

The qualitative data were also transcribed, coded and interpreted thematically. The thematic approach was followed to display the analyses and findings from both quantitative and qualitative data. The themes for the data analyses were derived from the conceptual framework of the study that is grounded in the basic research questions. Analysis of quantitative data was displayed first and then corroborated by qualitative data analysis in the form of texts and quotes. Qualitative analysis greatly assisted the researcher in answering the research questions and identifying constructs, themes, and patterns of effective schools.

To accomplish this, researcher coded data from observations, interviews, and surveys to identify themes in quality school practices. Items were coded according to the six categories. Researcher coded the factors that teachers and parents identified in surveys as being significant these categories. Because of the nature of the study and the extensive use of observations, evaluation of field notes, and personal interviews, qualitative analysis was utilized. Researcher's observations and experiences combined with quantitative analysis based on data collected provided a well-rounded view of the factors that make the school a success and led to clear answers to the research questions.

3.6. DATA DISPLAY

The overall narrative was presented as thick description for each case. This enabled analysis, interpretation and drawing of conclusion. A challenge faced in this was with respect to the format and setting boundaries of the case. It was important to describe the context of the phenomena and the phenomena itself. The format of the case study was decided with the aim of providing a comprehensive view of the sample school. Employing the everyday life in school as the key point, a three pronged presentation using the policy, programs and initiatives, events occurring on various sites of school and the experience of the stakeholders was developed. The thick description presented in the case led to analysis. The access to the prevalent quality Culture in a school was acquired through a closer reading of the events identified in the everyday life of school. A discursive analysis of events helped to establish their relationship with the six indicators of Quality. Also, the events and programs followed in case of each sample school were identified to represent them in each case study. From all the events observed and the manifestation of the six indicators of Quality as reflected in it, codes were formed to identify categories which indicated how the indicators of quality were manifested in each case. These codes were used as the basis to present the overall manifestation of Quality Assurance Mechanisms in each case.

3.7. CONCLUSION

The present study begins with researcher restating the purpose of the research and then presenting rationale behind mixed method inquiry using case study approach. A purposive sample of twenty schools was therefore

chosen. The criteria of sample selection were described and the issues of confidentiality, validity, triangulation and consent of the principals and management were discussed. Then in the next section data collection procedure was described along with the procedure of selection of cases. It discussed the phases of data collection, and how data was gathered from the observations, interviews, questionnaires and surveys, focus group discussion and documents were examined and organized to identify themes regarding the quality culture, and best practices that are essential to the school's success, this data were then used to examine the quality culture, and programs in place at the schools that contribute to its high level of success. Researcher sought to represent the perceptions of principals, teachers, students and parents in top performing schools. The study sought to describe the quality assurance systems and good practices of the top performing schools. In the final section data analysis process was described where quantitative analysis, qualitative analysis and data display was discussed. Quantitative methods of analysis included descriptive statistics (mean, SD, F-values) Qualitative methods of analysis included coding and search for significant themes. Implications of this study are very relevant to school leaders and administrators. This research will provide an insight as to what actions the successful schools take in order to make it effective and help students achieve success as the inputs given by the teachers and the students were very beneficial for the study to understand the quality culture present in the schools. The following chapter presents Data analysis and interpretation. It discusses the data collected in the study in light of specific research question.