

CHAPTER-III

METHODOLOGY

3.0 INTRODUCTION

The central aspect of any research embodied in its methodology, which shares the idea about how the study was conducted step by step. It refers to the plan and procedures used by the researcher for conducting the present study. This chapter is methodology oriented where the researcher has concentrated on the plan and procedure adopted in order to obtain answers of the research questions and to attain the objectives of the present study. This chapter includes Objectives of the study, Hypothesis of the study, Explanation of the Terms, Operationalization of the Terms, Delimitation of Study, Population of the study, Sample of the study, Design of the study, Phases under the Plan and procedure, Tools for data Collection, Procedure of Data Collection and Data Analysis. The comprehensive detail of the methodology with reference to above aspects has been described as under.

3.1 OBJECTIVES OF THE STUDY

The present study was designed with a view to achieve the following objectives:

- i) To develop a Cultural Heritage Education Programme (CHEP) for secondary school students.
- ii) To implement CHEP on secondary school students.
- iii) To study the effectiveness of CHEP with respect to;
 - Achievement of the students related to Cultural Heritage Education.
 - Reactions of the students.

3.2 HYPOTHESES OF THE STUDY

- i) There will be no significant difference in the mean achievement scores of the experimental group in pre-test and post-test (i.e. Cultural Heritage Education based Knowledge Test).

- ii) There will be no significant difference in the mean achievement scores of the control group in pre-test and post-test.
- iii) There will be no significant difference in the mean achievement scores of the experimental group and the control group in post-test.
- iv) There will be no significant difference in favorable and unfavorable reactions of the students of experimental group regarding the implemented CHEP.

3.3 EXPLANATION OF THE TERM

- **Cultural Heritage Education Programme (CHEP)**

The Cultural Heritage Education Programme under the study was a composite form of various activities based on six (06) different domains of Culture and Heritage like; (i) Built space and Heritage sites, (ii) Languages, (iii) Films, (iv) Sports and yoga, (v) Cultural practices and (vi) Performing arts. Implementation of this programme was based on different activities like Field visit, Workshop, Demonstration and Discussion, Observation, Yoga, Exhibition and Orientation. The CHEP was developed by the investigator with the support of resource persons in the related areas, keeping in mind the following criteria:

- a) The CHEP should be covered the major Six (06) domains of Culture and Heritage.
- b) The activities of CHEP should be related to the existing curriculum of secondary school.
- c) The implementation of CHEP should be done through activity-based approach.
- d) The CHEP should be implemented with the support of resource persons in the related areas.

The broad outline of the CHEP includes variety of activities viz.; A visit to historical place, Walk to the side of natural heritage, Language enrichment Programme, Creative writing, Watching Films, Sports and Yoga, Performance based activities and using CCRT cultural kit.

3.4 OPERATIONALIZATION OF THE TERMS

- **Achievement**

Achievement means the marks obtained by the students of standard IX in the Achievement test (i.e. Cultural Heritage Education based Knowledge Test), based on selected domains of Cultural Heritage Education.

- **Effectiveness**

Effectiveness of the CHEP was judged on the basis of the significance of difference in mean achievement scores of the students of experimental group, in the pre-test and post-test.

3.5 DELIMITATIONS OF THE STUDY

- The present study was delimited to the students of Standard IX of Gujarati medium grant-in-aid secondary schools, following the prescribed syllabus of Gujarat Secondary and Higher Secondary Education Board (GSHSEB).
- The implemented CHEP under the present study was prepared only in Gujarati language and also instructed in Gujarati language for the same. Also, the tools for data collection (i.e. Cultural Heritage Education based Knowledge Test and a Reaction scale) were developed in Gujarati language.

3.6 POPULATION OF THE STUDY

Total 30,114 students studying in the secondary schools of Vadodara district of Gujarat state, during the academic year 2015 - 16 constituted the population for the study. There were total 07 clusters of schools in the district which were known as “*Shala Vikas Sankul*” (SVS). The total number of schools and students studying in Standard IX covered under each SVS has been mentioned in the table no. 3.1.

Table 3.1**Details of the Total Number of Schools and Students**

Sr. No.	Blocks Included	Total No. of SVS	Name of Shala Vikas Sankul (SVS)	Total number of Sec. Schools (Grant-in-aid Guj. Med.)	Total number of Students in Standard IX (Grant-in-aid Guj. Med.)
1.	Dabhoi&Sinor	01	Dayaram Shala Vikas Sankul	32	6720
2.	Karjan &Padra	01	Premanand Shala Vikas Sankul	44	9240
3.	Savli& Vadodara	01	Dr. Vikram Sarabhai Vikas Sankul	29	6090
4.	Waghodia& Vadodara City	01	Dr. Madhubhai Buch Shala Vikas Sankul	22	1430
5.	Vadodara City	03	Dr. C.V. Raman Shala Vikas Sankul Maharshi Arvind Shala Vikas Sankul Sir Sayajirao Gaikwad Shala Vikas Sankul	84	6634
Total		07		211	30114

The details given above were collected personally by the investigator from the stated SVS.

3.7 SAMPLE OF THE STUDY

Sample for the present study was selected purposively considering the nature of the study and bearing in mind the feasibility aspect for the experimentation, data collection along with an intention of getting all the necessary facilities in the schools. First of all, the list of grant-in-aid Gujarati Medium Secondary Schools of Vadodara district was collected from the District Education Officer (DEO) Office, Vadodara. Then, considering the availability of necessary facilities of resources for organizing different activities of CHEP, two schools (*VakalVidhyalay*,

Bajwa and Mahirewa Adarsh Vidhyalay, Bajwa) were selected with the prior permission of the school management. An intact class of Standard IX from each school was considered as the sample for the present study. The group of students from *VakalVidhyalay, Bajwa* was treated as experimental group whereas the group of students from *Mahirewa Adarsh Vidhyalay, Bajwa* was treated as the control group. The detail of the same is given in the table no. 3.2.

Table 3.2
Sample of the Study

Sr. No.	Name of the School	Group	No. of Students
1.	VakalVidhyalay, Bajwa	Experimental	51
2.	Mahirewa Adarsh Vidhyalay, Bajwa	Control	51
		Total	102

3.8 DESIGN OF THE STUDY

The design of the present study was Quasi-Experimental Design under the Experimental research study. Under this, the ‘Pre-test - Post-test Non-equivalent Group Design’ was adopted. Best and Kahn (2000) describes that, “This design is often used in classroom experiments when experimental and control groups are such naturally assembled groups as intact classes, which may be similar.” The design of the study is presented as below.

O ₁	X	O ₂
O ₃	C	O ₄

Where, O₁ and O₃ are pre-tests

O₂ and O₄ are post-testes

X stands for Experimental Group and C stands for Control Group

3.9 PLAN AND PROCEDURE OF THE STUDY

The study was conducted in five different phases, shown in the following figure.

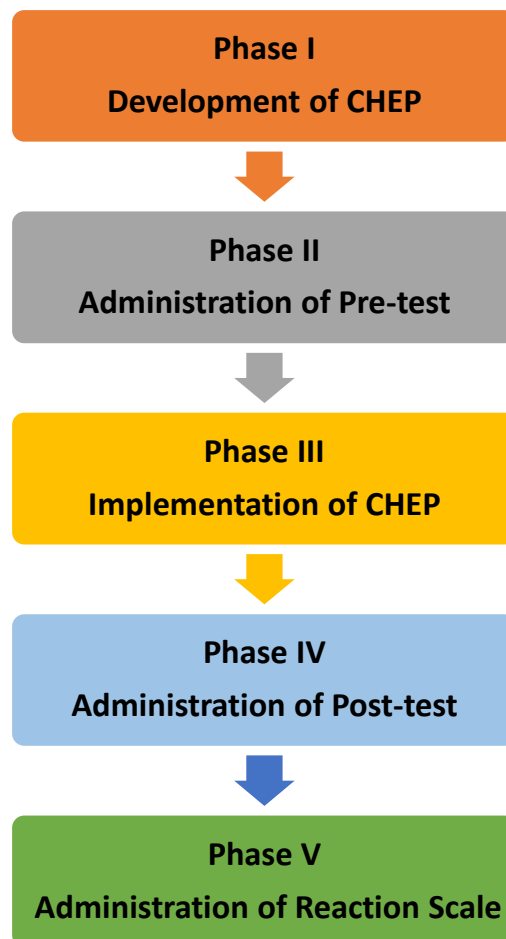


Figure 3.1 Different Phases of the Study

Phase I - Development of CHEP

Under this phase, a composite programme based on six (06) domains of Cultural Heritage Education was developed by the investigator with the support of resource persons, who are contributing for the promotion of Cultural Heritage Education at school level. The list of resource persons those who have contributed in the development of CHEP, has been given in the Appendix E. The programme consisted of variety of activities correlated with school subjects of Standard IX. The relevant supporting materials were also identified and provided to the students during facilitation of the programme. The activities of CHEP can be seen from Appendix – A.

Phase II - Administration of Pre-test

Under this phase, a Pre-test (Cultural Heritage Education based Knowledge Test) was administered to the students of experimental and control groups with a view to measure their achievement in terms of knowledge related to Culture and Heritage. The constructed Pre-test can be seen from the Appendix – C.

Phase III - Implementation of CHEP

The developed CHEP was implemented on a selected experimental group of students during the two semesters of the academic year 2015-16. Under this implementation, some activities were merged in the co-curricular activities with some necessary additional inputs, while rest of the activities of CHEP were organized on every Saturday as well as on last working day of each month. Hence, looking to the available months during two semesters, total 36 hours devoted for the implementation of activities under CHEP, apart from the activities which were merged under CCA. A brief report was also prepared by the investigator during the implementation of the CHEP to judge students' sensitization towards different domains of CHEP with respect to their interest, aptitude and active participation in the various activities.

The detailed schematic presentation for the implementation of CHEP has been given in the table no. 3.3. This it to be noted that various activities were not done at a stretch during the allotted hours. But they were done as per the convenience of the regular school time table. Some selected photographs showing the implementation of various activities under CHEP can be seen from the Appendix – H.

Table 3.3

Schematic Presentation for the Implementation of CHEP

Sr. No.	Domains of Culture and Heritage	Date	Allotted Hours	Activities	Mode/ Approach of the Activities
1.	Built space and Heritage Sites	2/3/2016 to 3/3/2016	5 hours	<ul style="list-style-type: none"> • A visit to EME Temple • Walk to the side of Natural Heritage, Sindhrot 	Field visit &Field interaction Demonstration & Discussion
2.	Languages	16/2/2016 to 18/2/2016 23/2/2016 to 25/2/2016 27/2/2016 to 21/3/2016	8 hours	<ul style="list-style-type: none"> • Language Enrichment Programme • Creative Writing • Book Review • Store Writing • Poetry Writing • Comprehension Task • Collection of Activities for Language • Proficiency Development 	Workshop/Schedule
3.	Films	24/1/2016 to 25/1/2016	5 hours	<ul style="list-style-type: none"> • Watching of Historical Documentary Films. • Films on Natural Resources • Films on Environment Education 	Demonstration & Discussion
4.	Sports and Yoga	6/1/2016 to 9/1/2016 17/2/2016	6 hours	<ul style="list-style-type: none"> • Participation in <i>Khel Mahakumbha</i> • Lecture of <i>Yogacharya</i> 	Yoga Activities Participation
5.	Cultural Practices	7/1/2016 2/1/2016 26/1/2016 10/2/2016 15/2/2016 to	6 hours	<ul style="list-style-type: none"> • Performance based activities • Drama • Folk Songs • Role Play • <i>Rangoli</i> Making • Traditional Day Celebration 	Demonstration Exhibition Workshop Orientation

		16/2/2016 26/2/2016		• Celebration of Special Days	
6.	Performing Arts	22/2/2016 to 23/2/2016	6 hours	• Through CCRT kit material	Exhibition Demonstration Discussion

The schematic presentation shows that total 36 hours had been allotted during 26 days for the implementation of CHEP apart from that some of the activities like; World Environment Day, World Yoga Day, Celebration of Independence Day, National Sports Day, National Science Day, Celebration of *Hindi Divas*, National Youth Day, Celebration of Republic Day, *Matrubhasha Gaurav Divas* and World Heritage Day; which were merged in the said CHEP as some co-curricular activities. The implementation time of CHEP was considered in accordance with the strategy evolved under each domain of Cultural Heritage Education Programme and the co-curricular activities stated above which were already suggested in the academic calendar (Named, “*Vasarika*”) developed by Gujarat Secondary and Higher Secondary Education Board, Gandhinagar. This can be seen from the Appendix – D.

Phase IV- Administration of Post-test

Under this phase, the post-test was administered to the students of experimental group with a view to measure their achievement in terms of knowledge related to Culture and Heritage and also to judge the effectiveness of the implemented CHEP.

Phase V- Administration of Reaction Scale

A five-point reaction scale was administered to the students of experimental group mainly to study their reactions regarding the implemented CHEP. This was mainly to judge the effectiveness of CHEP on the basis of their reactions.

3.10 TOOLS FOR DATA COLLECTION

The following major tools were constructed by the investigator and used for the collection of data, under the present study.

- a) **Cultural Heritage Education based Knowledge Test:** The Cultural Heritage Education based Knowledge Test was constructed on the basis of the six selected domains of Culture and Heritage with a view to measure students' knowledge related to CHE. This test was of one-hour duration and included 100 multiple choice type questions. All the questions ensured the coverage of selected domains under CHEP. This Cultural Heritage Education based Knowledge Test was used as both pre-test as well as post-test.
- b) **Reaction Scale:** A five-point Likert type reaction scale was constructed and used to study the reactions of the students regarding the implemented CHEP. It was consisted of 23 statements which were categorized into construction, implementation and experiences of the students. The scale was validated on the basis of the suggestion given by the subject experts. Reaction scale can be seen in Appendix – E.

3.10.1 Development of the Tools

A research tool plays a major role in any worthwhile study as it is the significant factor in determining the sound data, which in turn, helps in arriving at database conclusions about the study in hand, which ultimately helps in providing suitable remedial measures to the problem concern. The following tools were developed by the investigator in the present study for the purpose of data collection.

- a) Cultural Heritage Education based Knowledge Test
- b) Reaction Scale

The brief description about the development of tools has been given as under;

a) **Cultural Heritage Education based Knowledge Test**

Cultural Heritage Education-based Knowledge Test was developed by the investigator. Six domains of CHE such as; Built Space and Heritage Sites, Languages, Films, Sports and Yoga, Cultural Practices and Performing Arts were taken into consideration for the development of this tool. In the initial stage, total 120 multiple choice type questions were constructed under

the initial format of the said test. This initial format of the CHE based knowledge test can be seen from the Appendix-B. The test items were discussed with the panel of five experts with regard to their appropriateness, relevance and capacity to describe domains of CHE. Also, this initial format of CHE based knowledge test was administered on a group of ten (10) Standard IX students to judge its validity and standardization of the instructions. Based on the feedback and suggestions of the experts, 120 multiple choice type questions were scrutinized and all those test items requiring modifications were modified by the investigator. Thus, the final form of CHE based knowledge test was constructed, which can be seen from the Appendix-C. All the questions under this test were categorized in the domains, as given in the table no. 3.4.

Table 3.4
Categorization of Items under CHE -based Knowledge Test

Sr. No.	Domains of CHE	No. of Questions
1.	Built Space and Heritage Sites	20
2.	Languages	19
3.	Films	16
4.	Sports and Yoga	13
5.	Cultural Practices	19
6.	Performing Arts	13
	Total	100

b) Reaction Scale

As the second significant tool for the present study, the investigator developed a reaction scale with a view to know the reactions of the students regarding Cultural Heritage Education Programme, which was implemented on the experimental group. The Reaction Scale was developed under the guidance of experts with respect to its appropriateness, relevance and capacity to draw out the comprehensive ability of the students while giving their reactions. Total 23 statements were framed to know the reactions of the students regarding the implemented CHEP. The students were given five options (Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree) for each statement, out of which they have to select any one most appropriate option as their reaction for the given statement. Out of 23 statements, statement no. 16, 19 and 21 were having negative polarity. All the major domains were taken into consideration while development of this tool.

3.11 DATA COLLECTION

With a view to collect the data in terms of students' achievement regarding Cultural Heritage Education and their reactions about the implemented CHEP; the above stated tools were employed. First of all, Cultural Heritage Education Based Knowledge Test was administered on the experimental and control group as a pre-test. For this, initially the principal of both the schools were consulted to seek their permission for the data collection. After taking the prior permission, the pre-test was administered on 16th and 17th December, 2015 on experimental and control group respectively. The duration of the test was one hour. The students were ensured about the confidentiality of the information collected from them.

The same test was administered as post-test on the experimental and control group on 26th February, 2016 and 4th March, 2016 respectively, with the prior permission of the school authority.

Thus, the quantitative data in terms of achievement scores were collected. After that to study the effectiveness of implemented CHEP, students' reactions were collected by employing a reaction scale. The reaction scale was administered to judge the effectiveness of CHEP from the perspectives of students of the experimental group. Thus, the quantitative data were collected and analyzed further to draw out the findings.

3.12 DATA ANALYSIS

As the students were selected with the help of purposive sampling, non-parametric statistics was used for the data analysis. To test the stated hypotheses, the data analysis was done with the help of Wilcoxon Signed Rank Test, Mann - Whitney U - Test and Intensity indices. The Wilcoxon signed rank test was used to test the significance of the difference in the mean achievement scores of pre-test and post-test for the experimental and control groups respectively. The Mann - Whitney U - test was used to test the significance of the difference in the mean achievement scores of the experimental and control group in post-test. And to judge the effectiveness of CHEP in terms of the students' reactions, intensity indices were calculated.

3.13 CONCLUSION

The present chapter focuses on the overall research methodology with due emphasis on research design and appropriate statistical techniques used for the data analysis. The present chapter is the heart of entire research report as it explains the plan, procedure and structure of the research study. The next chapter explains in-depth data analysis and interpretations made on the basis of the analyzed data. Further, it prepares a background to draw out conclusions and major findings of the research study. The entire programme of present piece of research, presented in this chapter provides a clear cut direction for the work and thus, sets the stage for the analysis. Such analysis would lead to churning out the cream of work. This is the subject matter for the forthcoming chapter.