CHAPTER - III

METHODOLOGY

The present study was an endeavor to document, analyze, preserve and conserve the rare textile artifacts of personal collections of individuals.

In view of the above, the present chapter deals with an in depth information on various methodological aspects adopted to conduct the research. A detailed work plan and sequential procedure relevant to the research has been discussed under the following heads:

3.1 Pilot Study

3.2 Research Design

3.3 Selection of Sample

3.4 Documentation of Textile Artifacts

3.5 Analysis of Documented Textile Artifacts

3.6 Development of Database

3.7 Application of Conservation Treatment on Textile Artifact

3.8 Workshops on Preventive Conservation of Textile Artifacts at Household Level

3.1 Pilot Study

Pilot study was an essential step as the research was exploratory in nature. It created the base for the study enabling the investigator to become conversant towards the concept of preservation and conservation of traditional textiles.

Initially over a coffee table conversation and interaction with few textile lovers, the investigator established that residents of Vadodara and nearby places possessed vast collection of inherited valuable textiles not accessible to many. In due course of time, it also revealed that they had passion for textiles' collection but few had knowledge regarding its preservation and conservation.

The investigator's keen interest in the field of heritage textiles further led to undertake a study on aged traditional textiles of three families for preliminary work. The textile collection was documented both in descriptive and photographic form through observation method using structured interview schedule.

Museums selected from Gujarat, Maharashtra and Delhi were personally visited to elicit first hand information with regard to the standard practices adopted for preservation and conservation of textile artifacts all over India which would further aid the investigator to analyze the artifacts in a better informed way.

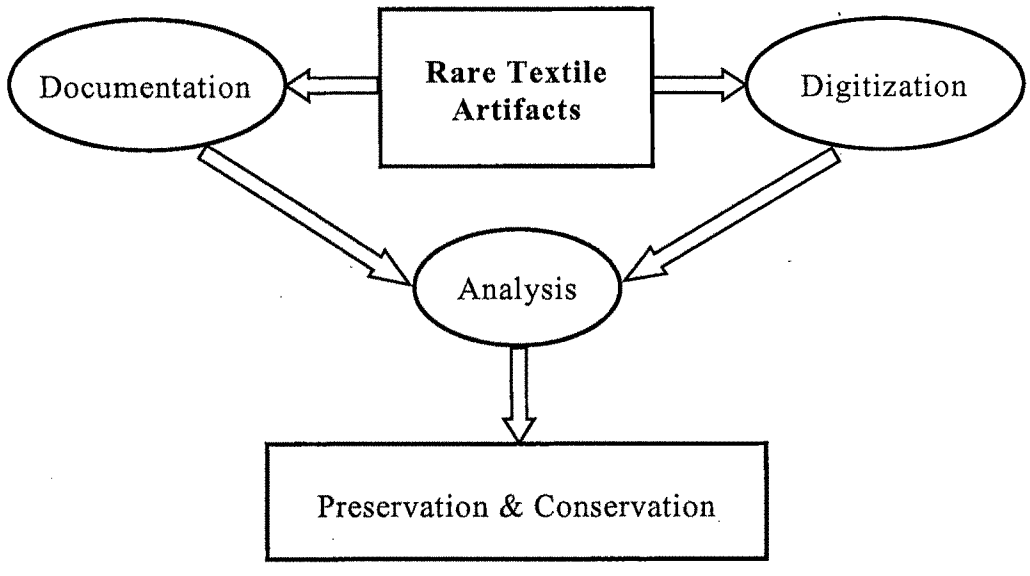
A workshop on "Conservation of Thanka Painting" organized by Baroda Museum and Picture Gallery, Vadodara was also attended by the investigator to get acquainted to the skills, materials and methods requisite for preservation and conservation of a specific textile artifact.

3.2 Research Design

The research was formulated with the key endeavor to document the rare aged textiles and to conserve them as national heritage of the country.

Exploratory cum Experimental research design with multi methodological approach was used for the study. The survey method employing observation, interview and case study was elected for the work.

3.2.1 Conceptual framework



- Development of Database
- Curative Conservation of an aged silk textile artifact
- Workshops on preventive conservation

Figure 3.1: Conceptual Framework

3.3.1 Locale of the study

Gujarat was purposively selected as a locale of the study on the basis of the information obtained through primary and secondary sources.

The data pertaining to the pilot study revealed that individuals in Gujarat possessed a valuable collection of textiles which were a part of their anthology during the time of study but, may not be tomorrow with no or limited public accessibility.

An in depth reference of secondary sources also revealed that Gujarat, being the state wealthy in cultural legacy is inhabitated by a population that had affluent reserves of innate aged textiles passed down through generations.

3.3.2 Sampling design

Purposive sampling design was followed to tap the respondents for the study. On the basis of the preliminary survey, six museums were selected to study the standard practices adopted for preservation and conservation of historic textiles for the partial fulfillment of the study. The selected museums were Baroda Museum and Picture Gallery, Vadodara; National Museum, Delhi; Calico Museum, Ahmedabad; Palace Museum, Jaipur; Kelkar Museum, Pune and City Palace Museum, Udaipur. Museum visits were made, personal interviews of the curators and conservators of the respective museums were conducted coupled with observation method to get an insight regarding the same.

Snowball technique was used to locate individuals from different background and geological locations of Gujarat. An attempt was made by the investigator to identify and persuade individuals in national spirit to share their possessions for academic endeavour. Persistent telephonic conversation enabled them realize the need of the

time while their rare textiles would degrade over a period of time and be a grave loss to the nation, in view of their accessibility to public for their general awareness perpetual to one's overall growth.

Deliberate sampling method was adopted for the selection of nine individuals based on their promptness to share their textile assets and feasibility of the investigator for a representative study. The selected individuals were

Mr. Kanubhai Salvi, Vadodara;

Ms. Usha Joshi, Vadodara;

Ms. Namrata Parikh, Vadodara;

Ms. Kalpana Bhatt, Bhavnagar;

Ms. Mandakini Devi Chauhan, Santrampur;

Ms. Gyaneshwari Devi Rana, Jambughoda;

Ms. Ambika Devi Parmar, Devgarh Baria;

Ranisahib Sugan Kunwar Singh, Devgarh Baria;

Ms. Alaukika Devi Khachar, Jasdan;

Rare textile artifacts selected purposively for documentation and digitization were 95. The criteria being historic in nature, more than 70 years old with limited or no public accessibility.

A sample size of 36 participants for the didactic workshop on preventive conservation of traditional textiles represented different strata of Gujarat. The decisive factors being interest, passion and inquisitiveness towards traditional textiles and its' preservation and conservation besides individual's exclusive aged textile possession.

3.4 Documentation of the Textile Artifacts

The investigator personally visited the individuals for data collection. The documentation of the textile artifacts was done through descriptive method supported with photography.

Structured interview schedule (Appendix I) was formulated and administered to attain detailed information regarding the artifact that included the date of acquisition, origin, possession, dimensions, material used, technique, type and degree of damage, present storage system and any other preservation practices coupled with observation method. The other tools employed were measuring tape, pick glass and magnifying glass.

Each artifact was laid on flat surface against a white bed sheet with minimum handling and creases under appropriate day light for photography by a digital camera bearing resolution of 5.0 mega pixels. The magnified image of the damaged area of the artifact was also captured for further identification and analysis. Corel Draw 13 was used as editing software of the pictures.

3.5 Analysis of the Documented Textile Artifacts

The documented textile artifacts were analyzed in terms of origin, material, technique, category, type and degree of damage based on the primary and secondary sources.

Visual assessment and observation methods were used to assess the physical, chemical, biological and multiple damages in the textiles. Magnifying and pick glass were used to report the type and extent of damage that had occurred in each textile artifact. Further, digitized images were also magnified to maximum

resolution to confirm the analysis. The investigator even attempted to categorize the type of damage for better analysis based on the relevant secondary sources as stated in the following table.

Table 3.1: Category and the type of damages

Category of Damage	Type of Damages
Physical Damage	Permanent Creases Permanent Folds Raveling or fraying of yarns Water logged stains Abraded areas Tears at folds Breakage of yarns
Chemical Damage	Colour fading Yellowing Zari tarnish Holes due to ageing
Biological Damage	Insect holes Brown stains

Qualitative analysis was used to judge the condition of the textiles. Condition rating code was devised for the present study based on the referred literatures (8, 67) and relevant interpretations of the type and extent of damage occurrence in a textile artifact as stated below:

Excellent: EX

- No visible damage or deterioration.
- Preventive conservation practices to be followed to maintain the textile artifact in excellent condition.

Good: GD

- Minor damage but no active deterioration.
- Damages like small holes, creases, tears, folds, colour fading, fraying of yarns are found.
- Preventive conservation treatment may be needed to stabilize the artifact.

Fair: FR

- Some damage but slow deterioration.
- Damages like tears at folds, large holes, abraded areas, worn down parts or multiple damages found.
- Preventive conservation treatment may be needed to stabilize the artifact like repairing a tear or mending a hole.

Poor: PR

- Significant damage or active deterioration.
- In such cases textiles are fragile and vulnerable, have suffered end to end deterioration and are in almost shattered condition or structurally unstable.
- Curative conservation treatment is needed to stabilize the artifact.

Treatment priority code was assigned to each artifact based on the present condition so that the artifact if necessary can get required remedial treatment. The investigator adopted the following operationally defined priority code.

High:

Needed for textile artifacts in poor condition. Requires immediate conservation treatment.

Medium:

Needed for textile artifacts in fair condition. Requires remedial treatment like mending or darning of holes or tears etc.

Low:

Needed for textile artifacts in good or excellent condition. Requires correct preventive conservation practices to ensure good condition.

3.6 Development of Database

The fabricated database incorporated the detailed documentation of the textile artifacts in both photographic and descriptive form.

A coding system was formulated for the documented textiles based on the classification of the traditional textiles. The coding system consisted of abbreviations for the classification such as WN for woven textiles, ED for embroidered textiles, RD for resist dyed and P for printed textiles. On the basis of this coding system, catalogue numbers were assigned to the textile in that specific collection (for example 1st woven textile = WN1).

In view of the present research need, the investigator designed a template that included a detailed yet accurate data about each artifact. It was as follows:

(1) Item Name

(2) Catalogue No.

(3) Date of Acquisition

(4) Place of Origin

(5) Material

(6) Technique

(7) Dimensions

(8) Description

(9) Credit

(11) Category of Damage

(12) Type of Damage

(13) Condition

(14) Treatment Priority

The collected and analyzed information with photographs were fed in the stated format of the template using Corel Draw 13 and Microsoft Office software for the development of the database.

3.7 Application of Conservation Treatment on Selected Textile Artifact

On analysis of the documented textiles, it was found that majority of the silk artifacts showed alarming signs of deterioration. Consolidating shattered silk has been a long standing difficulty in textile conservation due to the fact that most embrittle silk cannot withstand the stress of mechanical consolidation achieved through needle and thread. Hence, an experimental approach towards conservation of an aged silk saree with the application of adhesives for stabilization was carried out.

Selection of the artifact and treatment was based on the degree and type of damage, suitability of the textiles and feasibility of the treatment. Therefore, a woven Paithani saree of Gujarat acquired from an individual's collection was selected as an object for the case study.

3.7.1 Materials and methods

3.7.1.1 Materials

- The artifact under study was a rare Paithani Saree of early 20th century made in pure silk and zari from the state of Gujarat, India.
- Naturally aged seri silk was used to prepare samples for the study.
- Nylon net was used as a support fabric for the ancient silk textiles.
- Polyvinyl Acetate (PVA) and Polymethyl Methacrylate (PMMC) were used as adhesives in two concentrations 5 per cent and 10 per cent.

3.7.2 Methods

3.7.2.1 Methods of investigation

The condition of the object under investigation was assessed visually and detailed written as well as photographic record was maintained. The condition report of the artifact before treatment included the following details.

1) Item Name
2) Catalogue No.
3) Date of Acquisition
4) Place of Origin
5) Material
6) Technique
7) Dimensions
8) Credit
9) Category of Damage

10) Type of Damage

11) Condition

12) Treatment Priority

13) Present storage system

3.7.2.2 Evaluation of the consolidation method

Naturally aged fragile silk textile fabric that suited experimentation for conservation methods using adhesives was selected for the study.

The support fabric samples were treated with the adhesives based as the subsequent procedure.

- A clean wooden table was prepared with a non-stick plastic tightly secured with cello tape on all the four sides forming a layer between the table and the support fabric.

- The support fabric (nylon net) of required size was laid on it and the prepared concentration of the acrylic adhesive was lightly brushed onto it. The intent of this technique was to create a film from the adhesive to which the fabric was embedded.

- After drying the prepared support fabrics of different concentrations i.e. 5 per cent and 10 per cent were attached to the naturally aged silk textile by two methods that were cold and hot process. In cold process, the back side of aged textile was placed on the face side of the support fabric and bound to each other by brushing the acetone solution on it. Further it was allowed to dry.

- Similarly in the hot sealing method the adhesive coated supporting textile was pressed on the reverse side of the aged silk textile by pressing with light and warm iron.
- Then the consolidated samples were subjected to various tests like transparency, stiffness and tensile strength for evaluation of the most preserving and secure method of adhesive lining for aged silk textiles.

a) Tensile Tests

Test strips measuring 20cm x 2.5cm were conditioned for at least 24 hours at 27°C ± 2°C, 65% R.H. Data was then acquired under same ambient conditions on an Instron 1121 Universal Material Testing System as per ASTM 5035-95 that is standard test method for Breaking force and Elongation of Textile Fabrics with a gauge length of 3 cm and a cross head speed of 30 mm/min. Six replicates from each sample were analyzed discarding the results for the strips which broke close to the jaws and calculating average value for the remainder.

b) Stiffness Test

Test strips measuring 15cm x 2.5cm were conditioned for at least 24 hrs at 27°C ± 2°C, 65% R.H.±2% R.H. Data was then acquired under same ambient conditions on Cantilever Stiffness Tests as per the standard test method. Six replicates from each sample were analyzed and calculated average value for all.

c) Transparency

The transparency in terms of sustaining the textiles in the same form as the original one was visually evaluated.

3.8 Workshops on Preventive Conservation of Textile Artifacts at Household Level

Workshops on preventive conservation of textile artifacts entitled "Preserving our Heirlooms" was organized to create awareness about preventive care amongst textile collectors at household level.

Two workshops of four hours each were organized. One was organized at the Department of Clothing and Textiles, Faculty of Family and Community Sciences, The Maharaja Sayaijirao University of Baroda, Vadodara (Plate 3.1) and the other one with Jaycees Women Club, Baroda Metropolitan Chapter, Vadodara on March 1st and 9th, 2012 respectively.

Lecture cum demonstration method was used to enable participants understand the basic concepts of collection care, good housekeeping and plan long term future of their collection in an informed way, within the resources available to them.

The lecture was supplemented with a Power Point presentation highlighting the importance of traditional textiles, factors affecting its degradation, need and role of preventive conservation in today's world to save our textile heritage.

It was followed by demonstration on the different methods of preventive conservation that included basic cleaning (vacuuming) of the textile artifacts, different types of storage methods such as flat, rolled and hanged (Plate 3.2-3.4) depending on the condition of the artifacts and basic mending or stitching to prevent further loss to the damaged textiles.

A questionnaire schedule (Appendix II) was administered to all the participants on the completion to know their feedback regarding the workshop. The questionnaire included the demographic details of the respondents, awareness regarding the related terms, sources of information, possession and reason for preservation of traditional textiles. The data on present storage system and their keenness to implement the knowledge acquired during the workshop was also elicited.

A technical manual entitled "Preserving our Heirlooms" was prepared by the investigator to assist individuals for preventive care of their textiles at household level and maintain the textile heritage.

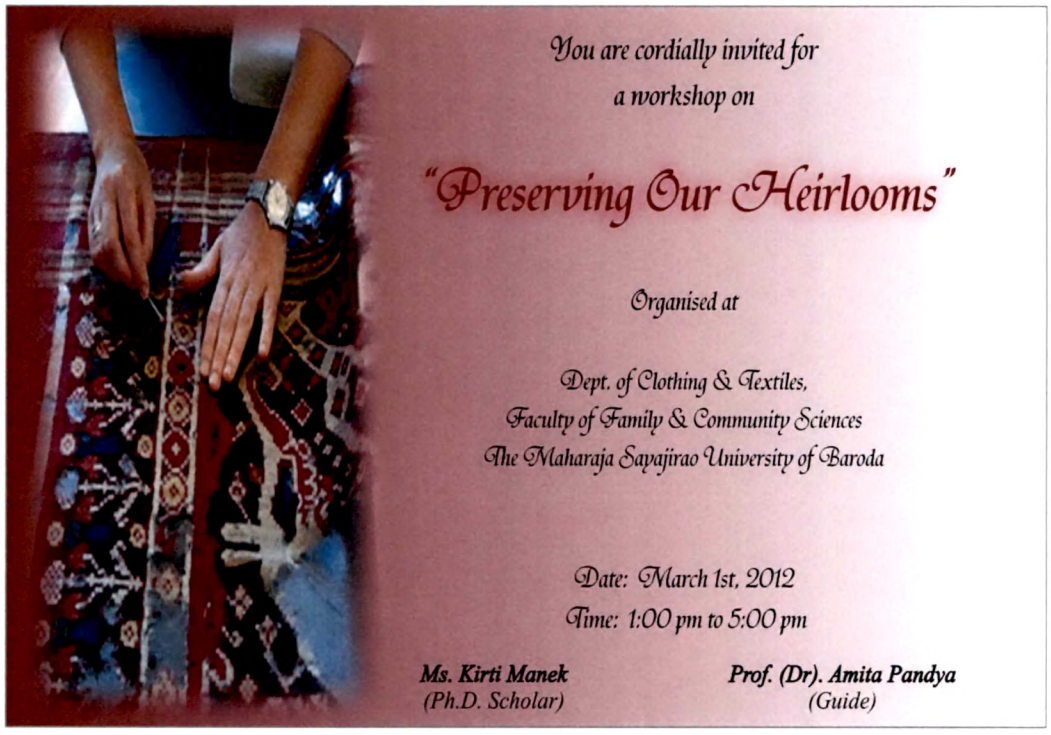


Plate 3.1: Invitation card designed for the workshop organized at the Dept. of Clothing and Textiles, Faculty of Family and Community Sciences, The Maharaja Sayaijirao University of Baroda, Vadodara

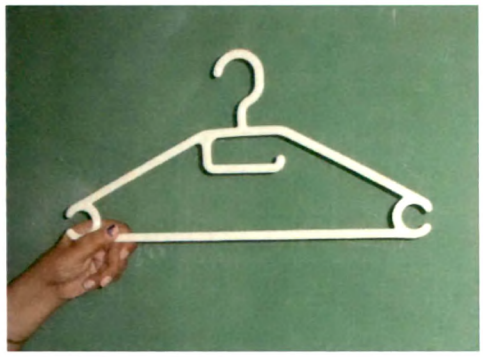


Plate 3.2a: Select the hanger as per the size of the garment

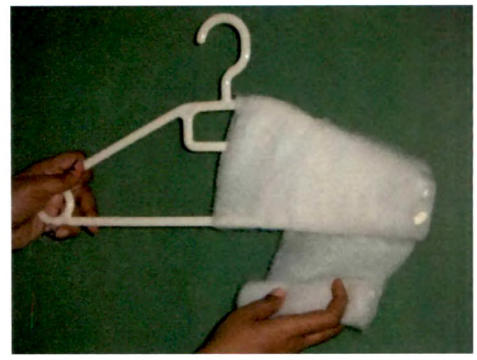


Plate 3.2b: Wrap narrow strips of polyester batting around the hanger

Plate 3.2c: Pad the hanger until it attains a rounded form without sharp ends

Plate 3.2d: Preparation of paper pattern for cover

Plate 3.2e: Tracing of paper pattern on muslin for hanger cover

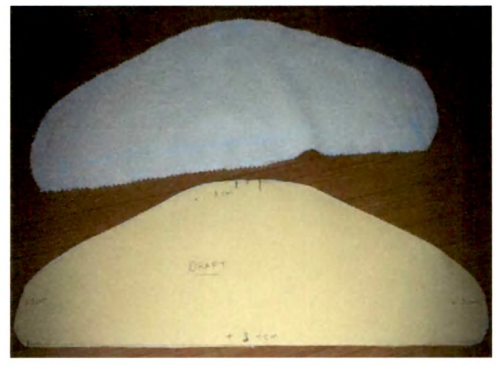


Plate 3.2f: Ready paper and muslin draft of the hanger cover

contd...

Plate 3.2g: Stitched muslin hanger cover

Plate 3.2h: Muslin cover placed over the padded hanger

Plate 3.2i: Lower hem finished with slip stitch

Plate 3.2j: Garment placed over a padded hanger

Plate 3.2k: Garment covered with dust cover, ready for storage

Plate 3.2: Preparation of padded hangers: Vertical storage

Plate 3.3a: Polyvinyl chloride tube covered with prepared unbleached, washed muslin cover

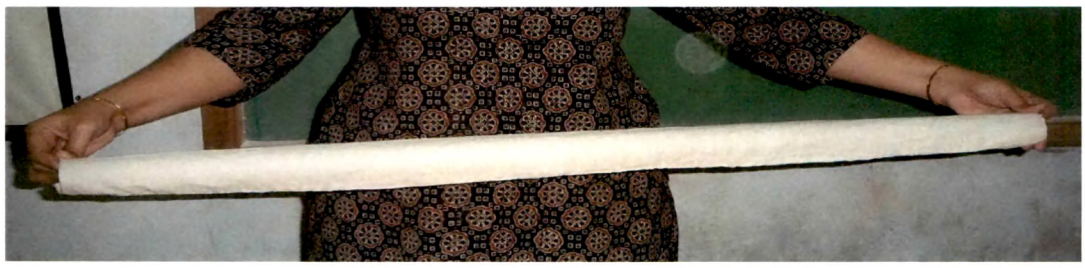


Plate 3.3b: Polyvinyl chloride tube ready for rolled storage

Plate 3.3c: Placing of textile to be stored on muslin fabric with right side inside

Plate 3.3d: Covered with muslin fabric and rolling the textiles over the prepared tube

contd...

Plate 3.3e: Fasten the wrapping in place with ties of cotton twill tape

Plate 3.3f: Textile roll ready for storage

Plate 3.3: Preparation of rolled storage: Horizontal storage

Plate 3.4a: Box to be used for storage

Plate 3.4b: Lining the box with unbleached, washed muslin fabric large enough to envelop the stored textiles

Plate 3.4c: Placement of crumpled muslin along major folds to prevent formation of hard creases

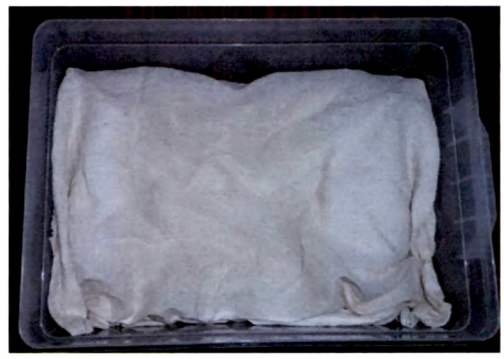


Plate 3.4d: Covering with the same lined muslin fabric before closing the box

Plate 3.4e: Box ready for storage

Plate 3.4: Preparation of boxed storage: Horizontal storage