

# *Experimental Procedure*

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### **3. EXPERIMENTAL PROCEDURE**

The methodology pertaining to the study on, “**Design development using computer aided softwares for surface embellishment on khadi silk saree**”, has been carried out in three phases as described below:

#### **PHASE I**

- 3.1. Preliminary survey and Development of manual sketches for surface embellishment
  - 3.1.1 Conduct of preliminary survey
  - 3.1.2. Selection of sampling method
  - 3.1.3. Preparation of questionnaire
  - 3.1.4. Pre-testing the questionnaire
  - 3.1.5. Administering the questionnaire
  - 3.1.6. Consolidation of data
  - 3.1.7. Selection of Design
  - 3.1.8. Design development through manual sketching
  - 3.1.9. Evaluation and Selection of design for CAD

#### **PHASE II**

- 3.2. Designing with CAD
  - 3.2.1 Design process
  - 3.2.2. Selection of motif
  - 3.2.3. Editing the motif
  - 3.2.4. Selection and Application of motif on background

#### **PHASE III**

- 3.3. Surface embellishment on khadi silk saree and Evaluation

### **3.1.1. Conduct of preliminary survey**

A survey is a process of collecting data from existing population. Initial survey is needed to find out the consumers likes and dislikes. Designers also need to carry out survey to help them with their idea, says King (2001). Surveys provide important information for all kinds of research fields. A survey may focus on different topics such as preferences depending on its purpose. Since survey research is always based on a sample of the population, the success of the research is dependent on the representativeness of the population of concern. There are several ways of administering a survey. The most common mode is collecting responses through questionnaire, Gupta (2007)

This method was selected to gather information from khadi marketing personal, khadi users, textile experts about the essential design features required for surface embellishment on khadi silk sarees.

### **3.1.2. Selection of sampling method:**

Sampling may be defined as the selection of some part of an aggregate or totality on the basis of which a judgment or inference about the aggregate or totality is made, explains Kothari (2004). Sampling is the process of selecting units from a population of interest so that by studying the sample we may fairly generalize our results back to the population from which they were chosen, states Chakraborty (2009).

#### **Simple Random Sampling**

Sinha and Ghoshal (2006), reveal that a random sample is taken such that every item in the population defined in the research has an equal chance of being selected. Simple random sampling is random sampling without replacement, and this is the form of random sampling mostly used in practice.

The investigator has planned to select the simple random method of sampling to gather information for the study as careful selection of sample will give good results; therefore the investigator selected khadi marketing personnel, khadi users and textile and fashion experts in and around Coimbatore as samples for the study.

**Khadi marketing personnel:** Personnel from twenty khadi shops that has been selling khadi silk sarees from last 5 years were selected.

**Textile and fashion experts:** Fifty members working in colleges and universities in the field of Textile, Apparel and Fashion Designing were selected to obtain information.

**Users of Khadi:** Fifty khadi users were selected to give their opinion about the features of khadi and the designs developed for surface embellishment on khadi silk saree.

### **3.1.3. Preparation of questionnaire**

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, this is not always the case. It contains a series of questions asked to individuals to obtain statistically useful information about a given topic. When properly constructed and responsibly administered, questionnaires become a vital instrument by which statements can be made about specific groups or people or entire populations, Sharma (2004).

A questionnaire is a form prepared and distributed to secure responses to certain questions. It is a device for securing answers to questions by using a form which the respondent fills by himself, states Saravanavel (1999). The layout of a questionnaire should be such that it is easy to read and pleasant to the eye and the

sequence of questions should be easy to follow. A questionnaire should be developed in an interactive style. This means respondents should feel as if someone is talking to them, points out Kumar (2009).

Three different questionnaires were prepared to collect information from khadi marketing personnel, khadi users and textile and fashion experts respectively

Questionnaire intended for khadi marketing personnel contained sales pattern, design features and colour preferred by the customers, preference for design and colour as expressed by the customer, and most demanded silk sarees and their features. (Appendix. I)

Khadi users were administered with a questionnaire which had the details for the aspects usage of khadi silk saree, preference for design, colour combinations and surface embellishment and purchasing pattern were collected from the 50 users of khadi using a questionnaire (Appendix - II).

Questionnaire intended for textile and fashion experts was included with details such as recognition for khadi silk, opinion about designs used on khadi silk sarees, suggestions to improve design in khadi saree, suitable surface embellishment work for sarees and colour combinations for surface embellishment work (Appendix - III).

#### **3.1.4. Pre-testing the Questionnaire**

Before the final form of the schedule was prepared the preliminary experiment was done on a sample basis. The prepared interview schedule was given to ten subjects to find out the drawbacks of the schedule and to form a clear idea about extent of non-responses. The necessary modification was made. After pretesting, the final form was prepared.

### **3.1.5. Administering Questionnaire**

Questionnaire thus prepared was administered to the selected khadi marketing personnel, khadi users, textile experts during their leisure time and instructions were given to fill the questionnaire. Enough time was given for filling the questionnaire. The filled in questionnaires were collected back as and when the personnel completed their response.

### **3.1.6. Consolidation of Data**

The data thus collected for different aspects were consolidated and tabulated and presented in the results and discussion Chapter. The details thus collected laid the foundation for design development for surface embellishment on khadi silk sarees.

### **3.1.7. Selection of Design**

Design features, the element and principles of design can be called the language of art and design. Designing can be defined as relating and visually arranging components or elements to create effects says Gokarneshan (2004). Designing is a process of delineating a product to meet the functional and aesthetic performance criteria with efficient use of available resource, and the engineering of the fabric is defined as the applied science dealing with relationship between raw material and finished product. The sources of inspiration for a designer are infinite point out, Bond and Beazley (2004).

The investigator has selected four different art forms originated from India, Indonesia and Egypt (Appendix IV). The selected respondents were asked to select the art forms .Out of the four ancient art forms, Bali art forms seemed to secure maximum responses. Based on the responses, an ancient art form of Bali was selected to surface embellish khadi silk saree.

The very soul of Bali is rooted in religion and is expressed in art forms. The Balinese people, who are primarily Hindu, have a long and illustrious history. Arts and crafts are a significant part of their culture. From the 10<sup>th</sup> to 11<sup>th</sup> century, Hinduism continued to merge with local customs. Balinese traditional painting was restricted to ceremony aspects. Balinese Wayang is two-dimensional drawing that characterized a Hindu-Buddhist epic such as Mahabharata and Ramayana. Modern Balinese painting such as Ubud, Sanur, and Batuan has its own style. Ubud paintings have more open spaces and explore human figures. Sanur depicts erotic scenes and animals. Batuan presents legendary scenes.

### **3.1.8. Design Development through Manual Sketching**

Based on the ancient art form selected for surface embellishment on khadi silk saree, ten sketches were done (Figure 1 to 10) to give choices between the designs. Each and every detail of the selected art form was studied carefully and inspiration taken from the Bali art form has been depicted in each of the designs developed for surface embellishment.

### **3.1.9. Evaluation and Selection of Design for CAD**

Ten sketches thus made had been presented before the respondents and they were asked to rank the designs using a rating scale. Rating scales were framed to collect information pertaining to the evaluation of design development by manual sketching and CAD for surface embellishment on khadi silk saree, suitability, acceptability and marketability (Appendix IV).

## **3.2. DESIGNING WITH CAD**

According to Gray (1998), in textile designing the designs could be created by scanning existing design and making modifications. The computer is recognized as a universal graphic tool, which could be used comfortably to

develop any desired design. CAD design packages assist people who do not have drawing skills, remarks Tate (2004).

**Adobe Photoshop:** With Adobe Photoshop Express, it's easy to improve the design. Choose from a variety of one-touch effects, or simply drag your finger across the screen to crop, rotate, or adjust color. Add artistic filters like Soft Focus or Sketch. Designer can undo and redo changes until desired expected result.

### **Top Editing Features**

- **Basics:** Crop, Straighten, Rotate, and Flip
- **Color:** Exposure, Saturation, Tint, Black and White, and Contrast
- **Filters:** Sketch, Soft Focus, and Sharpen
- **Effects:** Vibrant, Pop, Border, Vignette Blur, Warm Vintage, Rainbow, White Glow, and Soft Black and White
- **Borders:** Rectangle, Rounded, Oval, Soft Edge, Vignette, Rough Edge, Halftone, and Film Emulsion.

Photo shop is also image creation software as well as an editor. Photo shop can create any effect or style needed in a drawing or painting or layout. There are graphic software that can do specialized work faster and more efficient than Photo shop, but Photo shop can do it all in one program. Photo shop works by altering individual pixels in an image as opposed to a vector drawing program that draws with points, lines and objects mathematically. Photo shop is best with images that have complex textures, blends and photo realism, but Photo shop is also very good at vector drawing as long as the image doesn't need to be scaled and you don't need specialized CAD drawing tools.

#### **3.2.1. Design process**

New menu is used to create a new canvas namely a design of any size and resolution can be created. From the scanned images the relevant images are

opened in the new canvas. The design area required could be cropped by using marquee tool from the image menu. The same is opened in a new file and then it is hanged to index mode in the edit menu. This menu enables to change hundreds of colours into two colours for easy editing.

### **3.2.2. Selection of Motif**

The selected Bali art design was scanned and used for creating variety.

### **3.2.3. Editing the Motif**

Editing is done using pencil tool. To assist the same, grid lines were used. This process is called as edging. In this proceeding, all the faults of the design are blot out. After edging different colours are filled into design. Relevant colour is applied for the motif. Then the motif is ready after the background colour is filled.

Following these procedures for editing of the motif, careful editing was carried out and selected colours were filled. Motifs thus created were stored in library.

### **3.2.4. Selection and Application of Motif on Background**

The suitable background colour is analyzed and selected in such a way to suit the motifs. New menu is created and for a new canvas size, of width 4.5” and length 6.5”. Area for the border in a fixed size, of width 0.5” and length 6.5” are selected. Then by using move tool required motif is selected, from the weave library copied and pasted in the required area. Area for the pallu in a fixed size, of width 3.75” and length 3.5” are selected.

For filling pallu background, move tool is used to select the required pattern, copied and pasted for pallu. Then the motifs which are ready for placement on a saree have been used and also changed in their position to create variety. Finally all motifs are arranged in a saree known as layout.

Based on the procedure the selected motifs such as Bali art design were applied on the selected background. The placement of selected motifs was also done in addition to the positional change of the motifs to create more variety. Designs thus created are given in Plate IV to VII.

**Design: 1**

In this design, pink and black colour are used as a saree base colour. Bali art form has been form placed in the pallu. Bali bead pattern is used around the saree as border .Lines in gradation is placed above the lower border of the saree. Beads in the zigzag pattern have been arranged diagonally along the pallu. Body of the saree is filled with stud pattern.

**Design: 2**

In this design, green colour is used for pallu of the saree and blue colour for the body. In the border stylized zigzag lines were used to represent the ornament used around the hair. In the pallu decorated painting of bali art form is used. Floral motifs are used in the pallu and putta motifs are repeated all over the saree.

**Design: 3**

In this design, two colours combination of black and green are used. Single zigzag line is used along the border. Ornamental motif in bigger size is placed in repetition above the border and the same motif in smaller size is placed along the lower part of the saree. Pallu is decorated with Bali art forms and floral motifs were used as half puttas in the body.

**Design: 4**

In this design, violet and pink colours were used in the pallu and body in shaded form. Bali art form is placed in the left side of the pallu. Floral motifs were used in the

border. Bali ornamental design is placed along the border in uniform size. Rhythmic representation is followed in the placement of design. Lower part of the saree and pallu are filled with ornamental stud pattern with gradation in size.

**Design: 5**

In this design, double colour combination is used with blue and pink. Ornamental stud pattern is arranged in scalloped form around the border of the saree. Bali art ear ornament has been used in a modified form to embellish the lower border of the saree and smaller beads in circular form is placed above. Pallu is designed with a Bali art form along one side and small like pattern is evenly arranged in the pallu.

**Design: 6**

In this design, black colour is used as a saree base colour. Floral motifs are used in half putta along border design. The pallu is designed with Bali art painting and placed in the centre of the pallu. All around the motif, small geometrical motifs are arranged in repetition.

Scalloped design effect in three rows is given along the border of the saree. Lower part of the saree is filled with an inspiration taken from the crown of the Bali art form. A single bead pattern is placed repeatedly all over saree.

**Design: 7**

In this design, blue and grey colour are used as a saree base colour. Bali art painting is placed on the centre of the pallu. Diamond shaped ornamental design is used along two sides of the border.

**Design: 8**

In this design, dark and light blue colour is used for saree base. Small ornamental stud motifs are used in the pallu and in the body. Pallu is decorated with Bali art form design. Border is decorated with beaded pattern in a rhythmic way. Dew drop pattern is also included in the body of saree.

**Design: 9**

In this design, green colour is used as a saree base colour. Pallu is emphasized with bali art design. Stud motifs are used as puttas in the body. Modified ornamental crown pattern is used along border and pallu of the saree. Beaded pattern in straight line is placed above the zigzag line of the border. Dew drop pattern is designed in repetition along the lower border of the saree.

**Design: 10**

In this design, black colour is used as a saree base colour. Pallu is placed with Bali art design. Zigzag lines are lines and small dew drop motifs are used around the pallu. Zigzag lines and dotted lines are also used along border of the saree. Lower part of the saree is also designed with ornamental crown pattern.

**3.3. SURFACE EMBELLISHMENT ON KHADI SILK SAREE AND EVALUATION**

Based on the evaluation, design number S5 is selected for surface embellishment. The design thus selected is included with a bali art form of lady including ornaments. The art form is finished with hand painting and ornaments with golden beads. The entire pattern included in the saree is designed with ornamental bead (Plate IX)

Surface embellishment is initially started with transfer of design on the saree and marking of dots. Hand painting method is used to finish the art form and the ornaments are completed with a golden colour bead as seen in the picture. Entire design in the saree is completed with golden colour bead by fixing each and every bead with fabric glue and hand stitching is done wherever necessary.

The investigator had used 23,000 beads to complete entire pattern and has taken 60 hours of time to finish the work. Surface embellished saree is evaluated by the selected khadi marketing personnel, khadi users and khadi experts using a rating scale as given in Appendix IV. The surface embellished saree is given in Plate X.



**Figure 1**



**Figure 2**



**Figure 3**

**PLATE I**



**Figure 4**



**Figure 5**



**Figure 6**

**PLATE II**

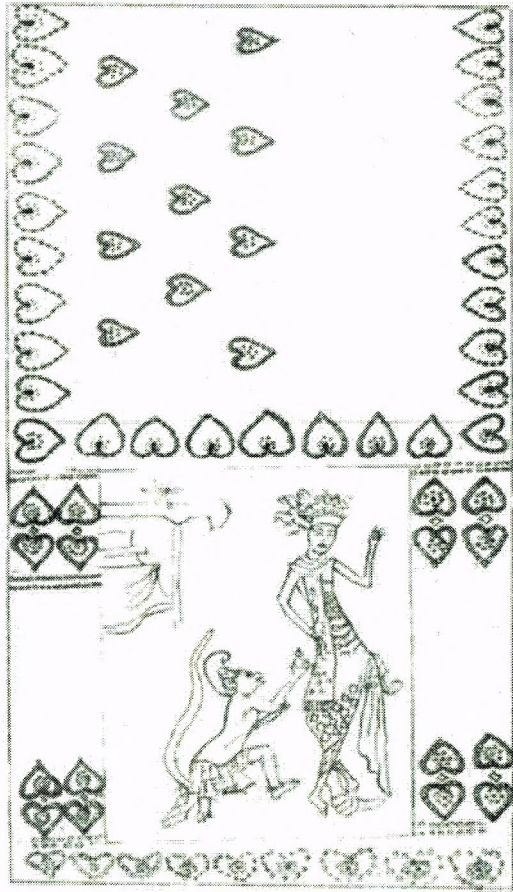
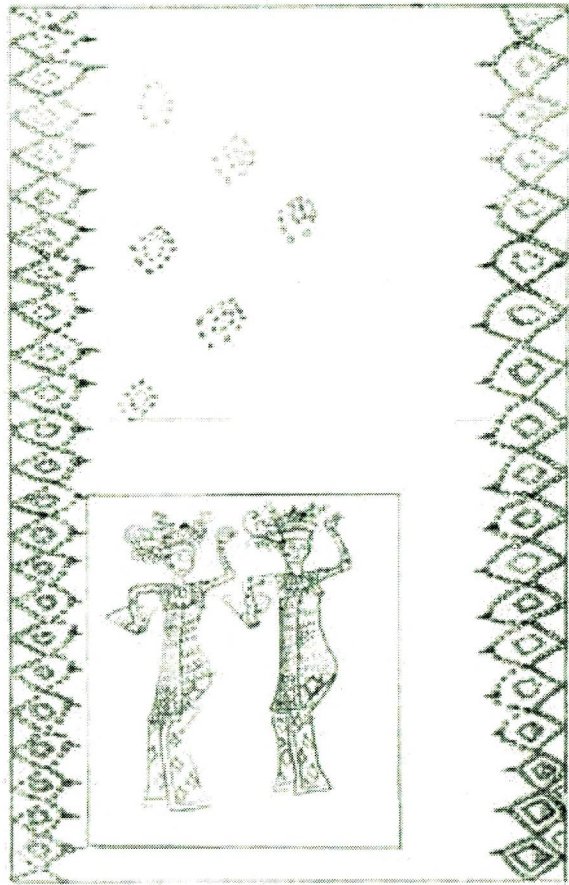


Figure 7



Figure 8

PLATE III



**Figure 9**



**Figure 10**

**PLATE IV**



S1

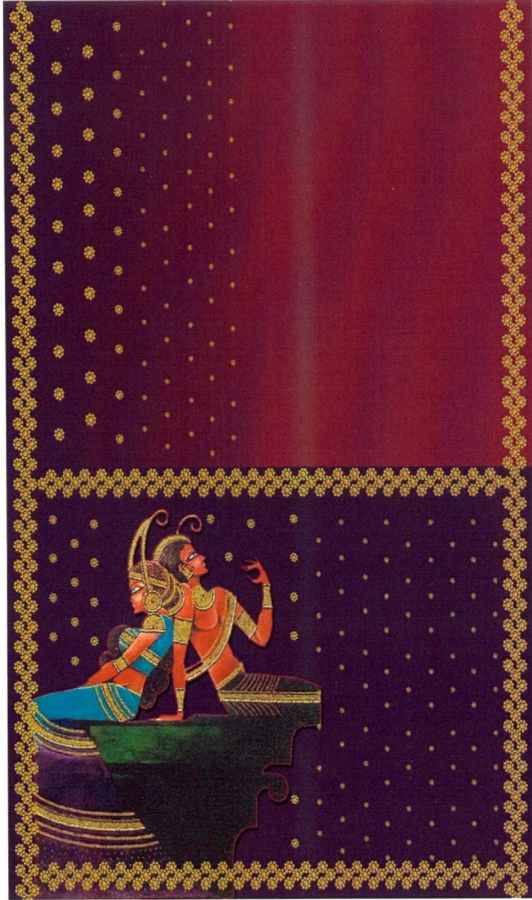


S2



S3

PLATE V



S4



S5

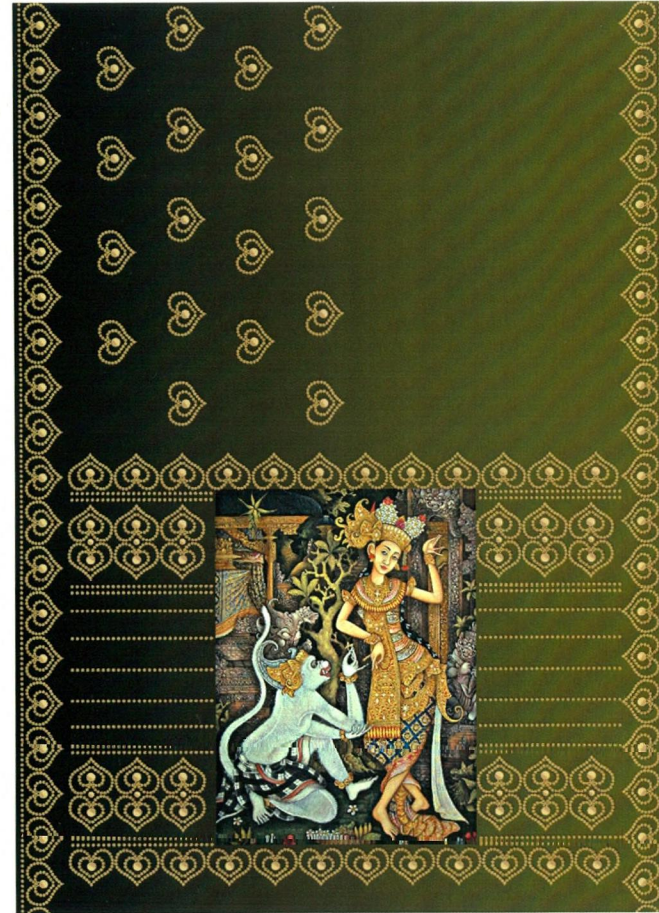


S6

PLATE VI

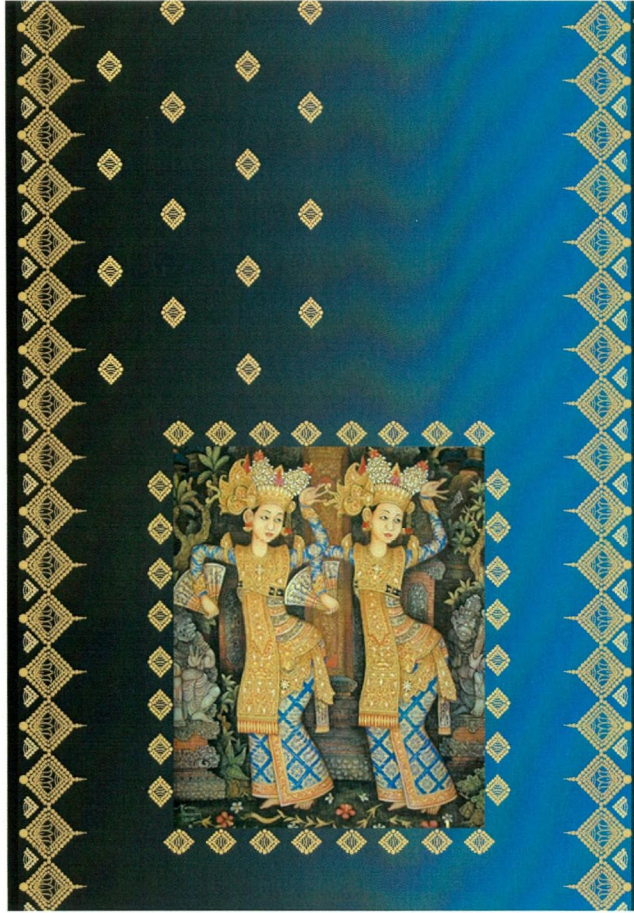


S7

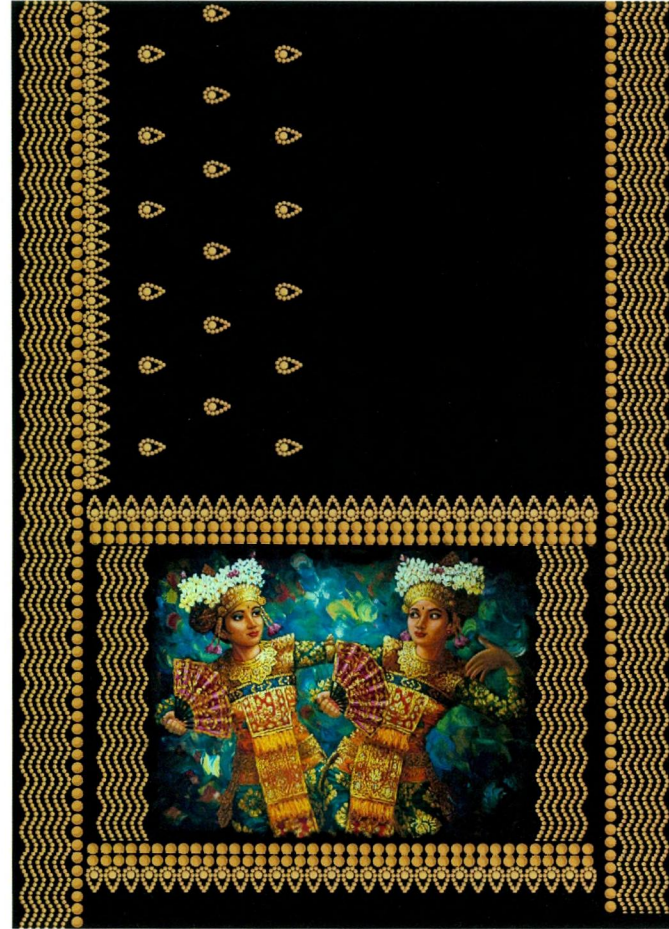


S8

PLATE VII

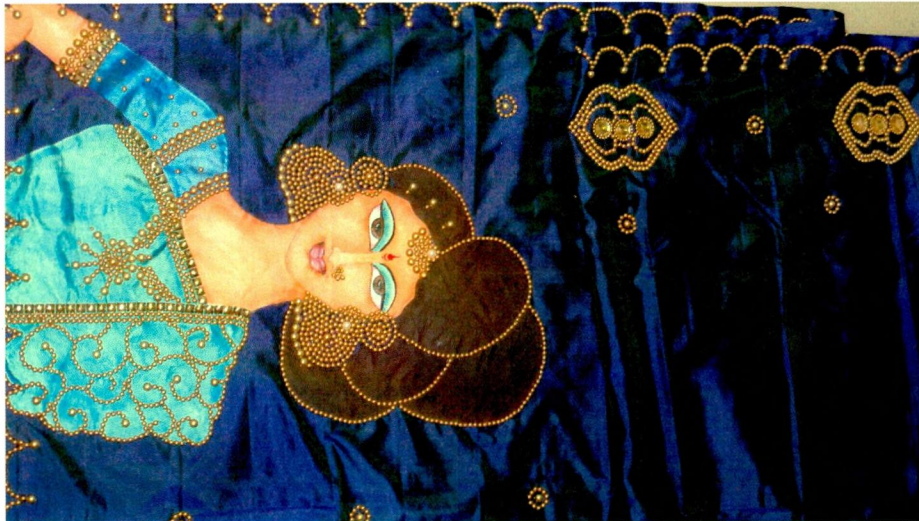
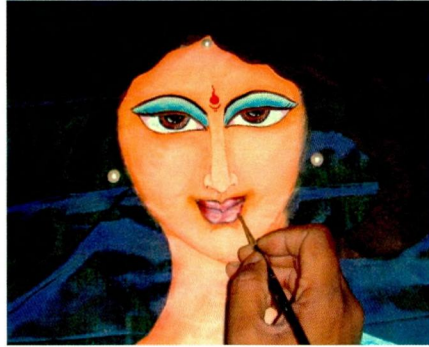
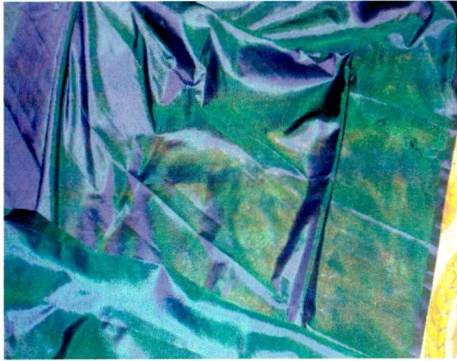


S9



S10

PLATE VIII



**PLATE IX**

**SURFACE EMBELLISHMENT BEAD AND  
PAINTING WORK**



**PLATE X**

**DRAPING ON SURFACE EMBALLISHED, KHADI SILK  
SAREE ON MANNEQUIN**