

Printing of tunics by simulating Anasazi ceramic patterns and their construction

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■ **ABSTRACT :** For this study, different patterns of Anasazi pottery were collected from various secondary sources. A total of forty Anasazi ceramic patterns were documented through photographs and given code numbers from 1-40. After documentation, thirty ceramic patterns were shortlisted by the panel of 15 judges. These patterns were then used for simulation for developing tunic designs. Different designs of tunics (30) were developed in different silhouettes using basic black and white colour combination of Anasazi ceramic patterns. These designs were developed through computer aided designing (CAD) using Corel Draw X4. While designing tunics, different Anasazi ceramic patterns were simulated, trimmed, adjusted, enlarged, and reduced in size with the help of different tools provided in Corel Draw X4. Thirty designs of tunics were shown to the respondents to get their preferences. On the basis of preferences of the respondents, five top ranked designs of tunics were selected for printing and construction. Printing of selected tunic designs was done through screen and stencil printing techniques depending upon the intricacy of design used. These printed tunics were then constructed using measurements of 36" size dress form.

■ **KEY WORDS:** Anasazi, Tunics, Printing, Construction, Designs, Patterns

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Apparel occupies a very special place in our present day society. It satisfies one of the essential necessities of mankind apart from food and shelter. By selection of an appropriate design, texture and colour in clothes, an individual can dress to his/her advantage. One feels happy, cheerful and confident when one is properly dressed (Radder and Shailaja, 1995). Many people wear clothes according to fashion. Fashion is the prevailing style accepted by the majority of a group at any given time. The person, who gives substance to a fashion idea by expressing it in the form of a design and

style for apparel, is a designer. The word designing refers to the total composition of lines, forms, colours, shape and texture in a decorative manner (Mitra, 1987).

Anasazi was a prehistoric Native American civilization that existed from approximately 100 to 1600 AD, centered around the present-day Four Corner areas of the Southwest United States. They are known for their unique style of pottery, today considered valuable for its rarity. The haunting beauty of Anasazi black on white pottery is timeless legacy of the prehistoric southwest (Anonymous, 2004). The Anasazi people are

known for their unique style of pottery, today considered valuable for its rarity. The haunting beauty of Anasazi black on white pottery is timeless legacy of the prehistoric southwest. The dignity of classic vessel forms is tempered by compliment of bold and vibrant geometric designs.

Printed garments are evident on the Ajanta cave figures and other old frescos and some of the textile motifs still current. In the traditional resist dyeing, there is the use of same earth colours as found in pottery. Usually the design is in black and is applied on the red ground like in ancient pottery (Chattopadhyay, 1995).

The concept of textile printing was developed in India few centuries before the birth of Christ. It is an art and science, probably as old as the art of weaving of textiles. The process of printing textiles can be considered as localised dyeing in which colour is applied in the form of a viscous paste of a designed pattern. Conventionally, printing of fabric is carried out by hand and machine. Hand printing includes block, batik and screen printing, while machine printing involves stencil printing and roller printing etc. The basic difference between the methods employed is the speed with which the designs are transferred to the fabric (Prayag, 1990).

Screen printing is a technique first used by the Chinese almost 2000 years ago. They used human hair stretched across a wooden frame to form the screen. To that, they attached a stencil made from leaves together into different shapes. Subsequently, the Japanese adopted the screen printing process and used woven silk to make the mesh and lacquers to make stencils. The use of silk is where screen printing got its alternative name – silk screening or silk screen printing. Silkscreen printing consists of three elements –the screen which carries the image to be printed, the squeegee and the inks. It can be used to print on most surfaces, including paper, plastic, fabric, and wood. Screen printing is a form of stencil printing, whereby the screen consist of a synthetic fibre or metal gauze stretched taut over a frame. Parts of the gauze have the holes blocked off (non-printing area) and the printing paste is forced through the open printing areas by a rubber or metal blade, called a squeegee, and onto the fabric beneath (Wynne, 1997).

The phenomenal versatility of this process commercialized the screen printing to such an extent that it was considered solely as commercial printing process. The popularity of the printing process is, not only due to

the novel and attractive effects obtained in printing but also due to the fact that in many cases, printing is also able to cover many incidental and acquired fabric defects (Dixit, 2000). Moreover, screen printing can be made more attractive, colourful and elegant using various types of embellishments.

According to Miles (2003), screen printing is the most versatile and important method used for introducing colour and design to textile fabrics. It is a process of bringing together a design idea, one or more colourants, and a textile substrate (usually a fabric) using a technique for applying the colourants.

A study by Ritamabhara (2004) was conducted on the development of designs for screen printed household articles. The results of the study revealed that twenty three per cent of the respondents possessed screen printed household articles. Among the various articles, respondents preferred bed-sheet, cushion cover, lampshade, table cloth, sofa back, telephone mat, table mat and pillow cover. Foliage, flower, creeper, circle, abstract, stylized were the most preferred motifs along with orange, blue, green, black, maroon and pink are most preferred colours. Two coloured combination was most preferred followed by three coloured combination. Fabric of casement, organdy and poplin were preferred in blue, fawn, pink and white colour. In the case of embellishments, lace, mirror and beads were preferred the most. The bed-sheet of poplin was given the first preference on the basis of design, while lamp-shade was preferred most for its embellishment.

Sharma (2005) developed stencil printing designs for entrepreneurship. The effect produced by different placement of designs using vector graphic was also studied and these selected placements were applied on various articles. This study also aimed at imparting technical training to empower rural women. Such an empowerment will not only supplement the family income but also enable the rural women in establishing home base entrepreneurship.

Poonam *et al.* (2011) conducted a study to develop design for *Kameez-dupatta* suitable for screen printing. Theme based thirty one Chinese motifs were identified comprising of eleven geometrical, twelve floral and eight animal/birds motifs and created by application of coral draw 9. Created motifs were evaluated by thirty experts and five top ranked motifs were selected from each category. Selected fifteen motifs were used for

development of twenty two designs suitable for screen printing on *Kameez-dupatta*. Out of twenty two designs, six designs were finally selected for application on *Kameez-dupatta* which were placed with all possible variations. These placements were again shown to the experts to record preferences. Centre front placement for *Kameez* was most preferred followed by diagonal from armhole and diagonal from shoulder placement. Over all placement for *Dupatta* was most preferred, followed by border with centre motif placement. Two top ranked placement were used for printing of *Kameez-dupatta*.

A tunic is one of the several types of garments for the body, usually simple in style, reaching from the shoulders to a length somewhere between the hips and the ankles. The name derives from the Latin *Tunica*, the basic garment worn by both men and women in Ancient Rome, which in turn was based on earlier Greek garments (Anonymous, 2015).

The present study has been planned with the following objectives:

- To prepare the most preferred tunic designs using screen and stencil printing techniques
- To construct the printed tunics for college girls

Personal interview technique was used for collecting the required information from 90 college going girls selected randomly from different colleges of Ludhiana city in year 2015-2016. Prepared tunic designs (30) were shown to them. After studying the preferences of the college going girls for the developed tunic designs, five top ranked designs of tunics were selected for printing and construction. Printing of selected tunic designs was done through screen and stencil printing techniques depending upon the intricacy of design used. After printing, these tunics were constructed using standard body measurements (dress form of 36" size) of this age group.

On the basis of preferences of the respondents, five top ranked designs of tunics *i.e.* design A₁, F₁, G₁, L₁ and M₁ were selected for printing. The tunics were made in white colour using silk and crepe fabric with black printing as in Anasazi ceramics.

Screen preparation :

For the screen preparation, different designs were prepared in CAD. Then, those designs were transferred on a film sheet by printout which was then used to

prepare the screen stencil. After transferring the designs to a film, these were attached to the screen mesh, which were photo chemically processed on the screen fabric by screen exposing machine.



Plate 1 : Printout of design on film sheet

The photo emulsion was applied on the screen mesh. Photo emulsion is thick liquid substance which reacts to light. Essentially, photo emulsion becomes "tougher" when exposed to light, making it more difficult to remove from surfaces. The parts of the stencil that were required to keep solid, were exposed to the light and then the rest was washed away with lukewarm water until image was fully open. The developed screens were then air dried or in sunlight.



Plate 2 : Screen exposing machine with bottom light source

Printing was carried out on a long flat table covered with a layer of felt. For printing, the screen was fixed to

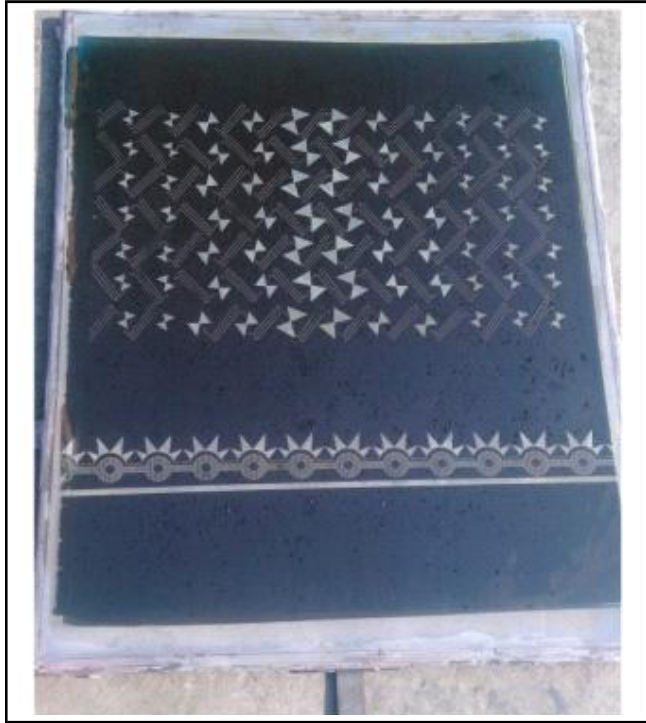


Plate 3 : Developed screen

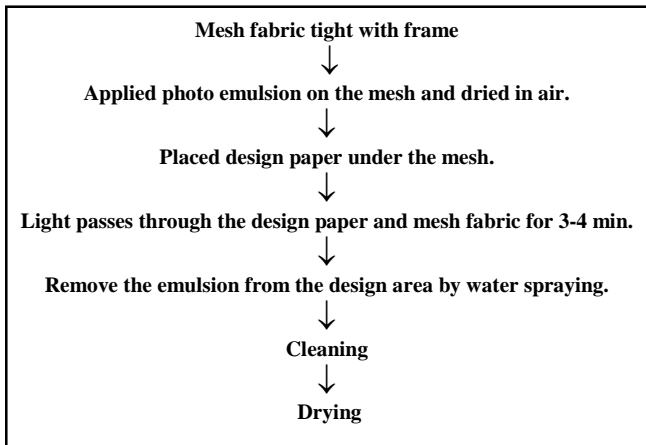


Fig. 1 : Sequence of printing screen preparation

a table using hinges. Screen printing paste was applied to the fabric by placing the screen over the material. Printing paste was then forced through the fine mesh openings by applying pressure using a squeegee. Thus, the designs were printed on the fabric.

Composition of screen printing paste used:

- 15% - Binder (Zytrol)
- 80% - Water
- 1% - Emulsifier (R 55 Zydex)
- 2% - Fixing agent (104 cht)

- 2% - Thickener (tkf)
- 8% Printing Ink added to the above paste (K4 black and K2-W white, Zydex).



Plate 4 : Printing of Design G₁ and L₁ in process

Curing of printed fabrics :

After the printing, curing was done at 180°C for 150 seconds.



Plate 5 : Curing in process



Plate 6 (a) : Screens used in printing

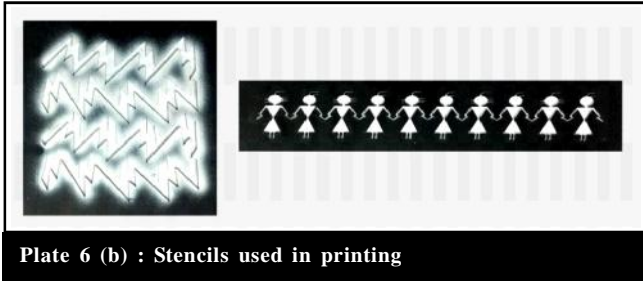


Plate 6 (b) : Stencils used in printing

Construction of tunics:

After printing, these tunics were constructed using standard body measurements (dress form of 36” size) of this age group.

Details of prepared tunics :

Tunic A₁:

Measurements used:

| | | |
|-----------------|---|--------------|
| Length of tunic | - | Front- 94 cm |
| | | Back -137 cm |

Material required :

| | | |
|--------------------------------|---|---------|
| Fabric (Crepe) | - | 4.5 mtr |
| Lining (synthetic crepe) | - | 4.5 mtr |
| Black fabric for border (Silk) | - | 0.5 mtr |
| Hooks | - | 4 |
| Zipper | - | 1 |

It was a sleeveless tunic in crepe fabric with a combination of mandarin collar and a stylized neckline and the emphasis was given at the waist with a single row of design and light gathers as a detail element. The tunic was prepared in cascade style and hem line was finished with bias binding using black silk fabric (Plate 7a).

Tunic F₁:

Measurements used :

| | | |
|-----------------------------|---|-------|
| Length of tunic | - | 99 cm |
| Length till waist belt | - | 43 cm |
| Width of printed waist belt | - | 5 cm |

Material required :

| | | |
|--------------------------|---|---------|
| Fabric (Silk) | - | 2.5 mtr |
| Lining (synthetic crepe) | - | 2.5 mtr |
| Zipper | - | 1 |

This was an overall printed sleeveless tunic made in silk fabric. It has a black printed belt at the waist and sweetheart neckline. The intricacy of the lines used in

the printing of the tunic gives it a very unique geometrical effect. The same pattern of printing was used at the back of the tunic and a slit at the hemline (Plate 7a).

Tunic G₁:

Measurements used :

| | | |
|-----------------------|---|-------|
| Length of tunic | - | 99 cm |
| Length of the sleeves | - | 30 cm |

Material required:

| | | |
|--------------------------|---|---------|
| White fabric (Silk) | - | 2.5 mtr |
| Black fabric (Silk) | - | 1 mtr |
| Lining (synthetic crepe) | - | 2.5 mtr |
| Zipper | - | 1 |

This was straight tunic with sleeves in silk fabric. In this tunic, fish motif was printed diagonally on the front panel. Black and white check design was printed on the centre back panel. White on black printing was done on sleeves border (Plate 7a).

Tunic L₁:

Measurements used :

| | | |
|------------------------|---|-------|
| Length of tunic | - | 99 cm |
| Depth of the back cowl | - | 30 cm |

Material required :

| | | |
|--------------------------|---|----------|
| Fabric (Crepe) | - | 2.75 mtr |
| Lining (synthetic crepe) | - | 2.75 mtr |
| Side zipper | - | 1 |
| Back zipper (golden) | - | 1 |

It was a white coloured sleeveless tunic with a ban collar in black crepe fabric. Printing was done on the bodice area and at the bottom, a narrow border was given to give a complete look to the tunic. It has a cowl back and above the cowls there was printed border with an opening. The armholes were finished with black piping. A slit at the back hem was given for ease (Plate 7a).

Tunic M₁:

Measurements used :

| | | |
|------------------------|---|-------|
| Length of tunic | - | 99 cm |
| Depth of the back cowl | - | 30 cm |

Material required :

| | | |
|--------------------------|---|----------|
| White fabric (Silk) | - | 4.5 mtr |
| Black fabric (Silk) | - | 4.5 mtr |
| Lining (synthetic crepe) | - | 2.75 mtr |



Tunic A₁

Tunic F₁



Tunic G₁

Tunic L₁

Plate 7 (a) : Constructed tunics



Tunic M₁

Plate 7 (b) : Constructed tunics

Side Zipper - 1

It was sleeveless white silk tunic with a combination of bustier and boat shape neckline and box pleats were used in the lower part. The bodice has over all print. The back of the tunic has same printing pattern as front (Plate 7b).

Conclusion:

So it can be concluded that this information can be further used effectively by designers who are working for custom designing. The fusion of traditional ceramic patterns and contemporary design elements used in this study would be great inspiration to the budding designers. A similar study may be carried out by using other printing techniques like digital, block etc. Other products like

household articles, bags, stoles, foot wears etc. can also be developed using similar techniques.

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