

Madhubani art- a design inspiration to develop motifs for hand painting on skirts for adolescent girls

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ABSTRACT

The tradition of painting has been carried in India since the ancient times. The exquisite murals of Ajanta and Ellora, Buddhist palm leaf manuscripts, Mughal and Kangra schools of miniature Indian paintings, stand as evidence to this fact. These traditional Indian paintings, depict a love for nature and its forces. Among all the traditional paintings, Madhubani painting as its name itself indicates *forest honey*, it has its own place for its replication of flora and fauna. In order to revive the tradition in the minds of youngsters an attempt was made by selecting the common motifs like birds, fish, sun and borders from Madhubani style which were then developed into designs by arranging in proper fashion. The inspired traditional Madhubani motifs were beautifully hand painted on fabrics for skirts. The selected Madhubani designs, colours and constructed fashion garments were liked by the adolescent girls.

Key Words : Madhubani art, Motifs, Hand painting, Adolescent girls

INTRODUCTION

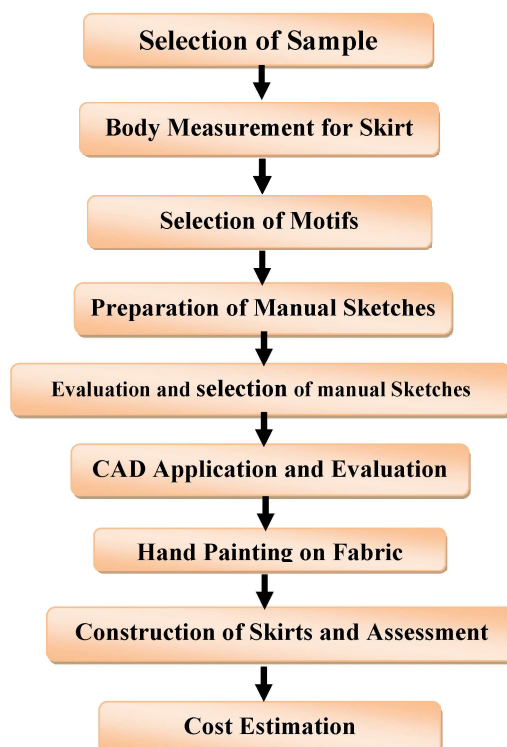
The term *Fashion* is frequently used as a synonym for glamour and style. Fashion doesn't limit itself to dressing but is an expression of the mood and taste of an individual. Indian art history has given a rich storage of traditional painting in Indian sub-continent from pre-history to present time. The style of painting differs from region to region and period to period. Madhubani painting is one of the traditional arts. Madhubani paintings are also referred to as Mithila art, as it flourished in the Mithila region of Bihar. These paintings were initially drawn on the walls and were known as Bhatti Chitra. The paintings were mainly created by village women. Surface embellishment through painting on fabrics embraces a wealth of different historical and contemporary techniques. All over the world people continue to develop traditional and innovative methods to decorate garments or to create an art form that re-interprets the traditional skills. Keeping these facts in mind, the investigator has made a study on Madhubani Art with the following objectives.

- 1) To select the inspired madhubani designs
- 2) To hand paint the selected motifs on fabric
- 3) To construct skirts for adolescent girls
- 4) To evaluate the skirts

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METHODOLOGY

This project focuses on design development from the Madhubani art and its application on garments for the adolescent girls as per their preference.



Selection of sample :

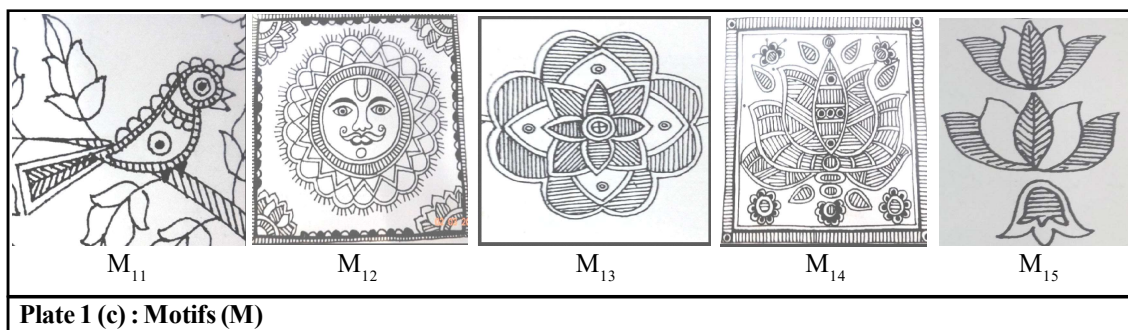
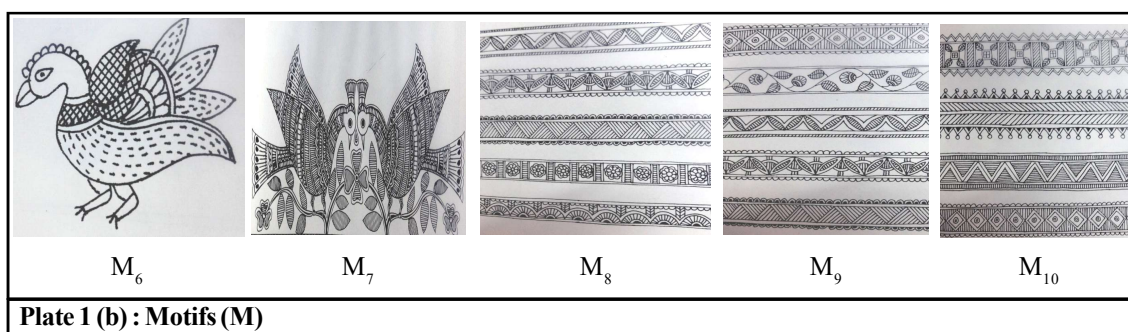
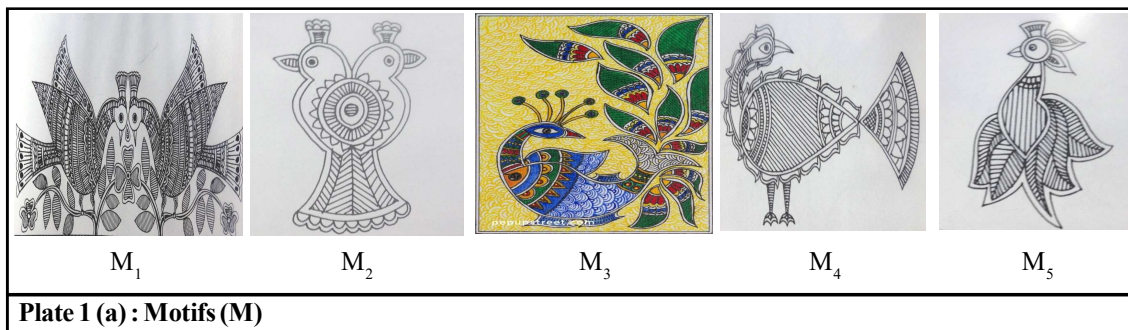
Sampling, is a process of selecting a few from a larger group to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group. The samples selected were a randomly selected group of adolescent girls.

Body measurement for skirt :

Good fit is a combination of two components namely good and comfortable. The first and the most important ingredient for proper fit is measurements (Sodhiya, 2004). The measurements are taken comfortably without pulling the tape too tightly or too loosely but keeping it firmly by placing two fingers in between the tape and the body. In order to construct garments that will fit well body measurements were taken for 25 adolescent girls. The main body measurements taken for the construction of skirts were Waist Circumference, Hip Circumference and Skirt Length. Then the body measurements were standardized.

Selection of motifs :

The motifs from Madhubani art which were inspiring were selected for the study. The common motifs like birds, fish, sun and borders were developed into designs by arranging in proper fashion. The selected motifs are presented in Plates 1 (a), (b), (c).



Preparation of manual sketches :

The selected Madhubani designs were developed suitable for the skirts through manual sketching. About twenty five manual sketches were prepared [Plates 2 (a) (b) (c) (d) (e)].

MS₁ – The design MS₁ comprises of madhubani design with a peacock on either side of a flower on a semicircular skirt. Continuous curved lines are formed on either side of the flower.

MS₂ – On a semicircular skirt twin peacock motif facing opposite sides was drawn. Two motifs were at one level and the middle one was slightly at a lower level. The Silhouette of circular skirt was used for this design.

MS₃ – Madhubani design MS₃ comprises of a big bird motif with fish on its body was designed. The bent bird was enriched with the traditional Madhubani pattern. This decoration was done on a particular portion of the skirt.

MS₄ – On a semi circular skirt, a bird motif was drawn at the centre. The bird has a bent appearance with the beak facing the tail.

MS₅ – On the silhouette of semi circular skirt a bird motif with Madhubani style was designed facing downwards.

MS₆ - The design MS₆ was done on semicircular skirt. The elements of design namely line and shape which are used at the borders of Madhubani pattern were applied in this design running from waistline till the knee level of the skirt. It gives an illusion that there is a separate piece from the waistline till the knee. The design comprises of diagonal lines ordered with semicircular pattern. A petal motif was drawn on either side on the front portion of the skirt. This was enriched with a border.

MS₇ - This design consists of horizontal lines running in segments at the waistline of the skirt. Each segment consists of vertical lines and enriched with semicircular, triangular shapes and diagonal effects. The vertical lines ended with dot to enrich the design.

MS₈ - On a semi circular skirt, a leaf like motif was drawn on either side of the front portion. Each petal design was divided into two segments which comprised of right angled triangle and the whole design was filled with diagonal lines.

MS₉ - The design MS₉ was done on a semicircular skirt. A group of leaf motif was filled in a triangular shape. The leaf motif was filled with lines. This brought a principle of progression in design.

MS₁₀ - On a semicircular skirt, two bird motifs facing each other were drawn which were placed at the centre of the skirt. They were enriched with feathers. Horizontal lines were drawn on the body of the birds.

MS₁₁ - On semi circular skirt, at waistline and border line of the skirt, horizontal zigzag lines were used. One segment was completely shaded and the other segment was decorated with vertical lines. The edge of the design was decorated with semi circular patterns. The front blank portion was decorated with circular designs.

MS₁₂ - This design was applied on the silhouette of a circular skirt. At the side portion of the skirt emphasis was given by decoration with butterfly motif. The butterfly motif was filled with Madhubani border designs. An emphasis was given to the design by the sting of the butterfly.

MS₁₃ - This design was an informal one drawn at the left bottom of the skirt. Two curved lines were drawn over which petal like designs were drawn. Leaf designs were also drawn over that filled with diagonal lines. Checks were also used in the design.

MS₁₄ - This design was applied on semicircular skirt. It was drawn from waistline till the knee level on the skirt. This design comprised of curved lines forming triple folds on petals, within which two bird motifs facing each other was drawn.

MS₁₅ - On a semicircular skirt, semi circular motifs were drawn. The motifs were arranged horizontally in alternating manner along the bottom of the skirt. The motifs were arranged in the four layers. The semicircular motifs were enriched with diagonal lines with semicircle at the centre.

MS₁₆ - The design MS₁₆ was done on a semi circular skirt. A Madhubani fish motif was drawn inside a circle. The body of the fish was decorated with lines and semicircles. The semi circular design was drawn along the side of the circle. The motifs were placed continuously along the bottom of the skirt at an equal interval. A border line was drawn on top of the motifs. The rest of the portion was slightly shaded.

MS₁₇ - On a semicircular skirt, madhubani inverted full lotus motif was drawn at the waistline. The motif was filled with stripes. The petal of the lotus flowers was drawn throughout the bottom of the skirt. A semicircle was drawn on top of each motif to smoothen the design.

MS₁₈ - On a semicircular skirt, design at the waistline was done with horizontal lines forming

segments. Each segment was beautified with fish motif, triangular and semicircular shapes with diagonal line patterns. To emphasis the informal effect two elongated diamond motifs were used.

MS₁₉ - On a semicircular skirt, at the border peacock motif was used. At the top, over two horizontal lines semicircular designs were drawn.

MS₂₀ - This design was drawn on a semi circular skirt with triangles at the border. Each triamgle comprised of diagonal lines with centre line. A continuous border design was drawn from the waist line till the bottom edge of the skirt. This border was designed with two petals, triangular designs and semicircles at the edges.

MS₂₁- This design was done with a triangular pattern at the centre around which circles were drawn. The triangular motifs comprised of horizontal lines and in each segment triangles, semicircles and vertical lines were also drawn.

MS₂₂ - This design comprised of decoration at the waist line. It formed an informal pattern with curved diagonal lines forming segments. Each segment comprised of triangles, vertical lines and floral motifs.

MS₂₃ - This design comprised of petal motifs filled with border designs depicting the

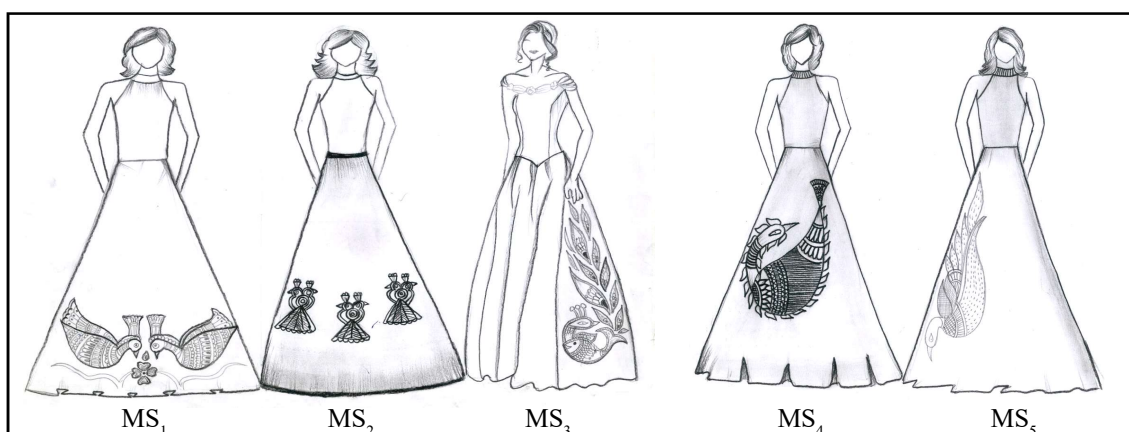


Plate 2 (a) : Manual Sketches Of Skirt (MS)

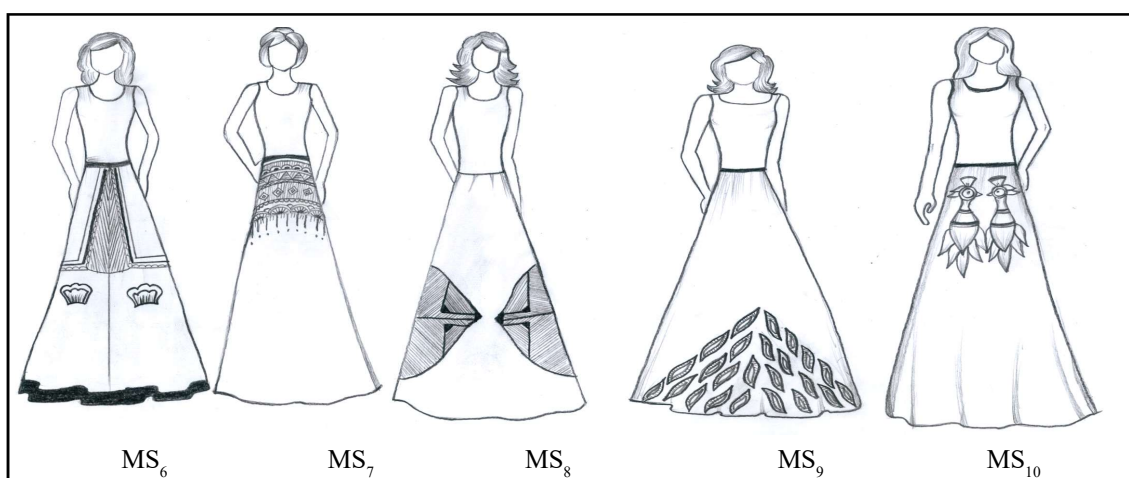


Plate 2 (b) : Manual Sketches Of Skirt (MS)

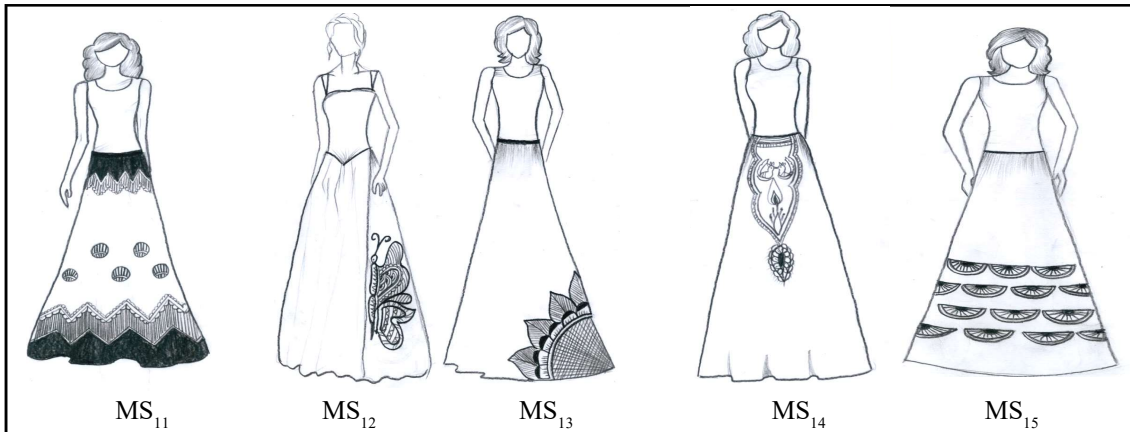


Plate 2 (c) : Manual Sketches Of Skirt (MS)

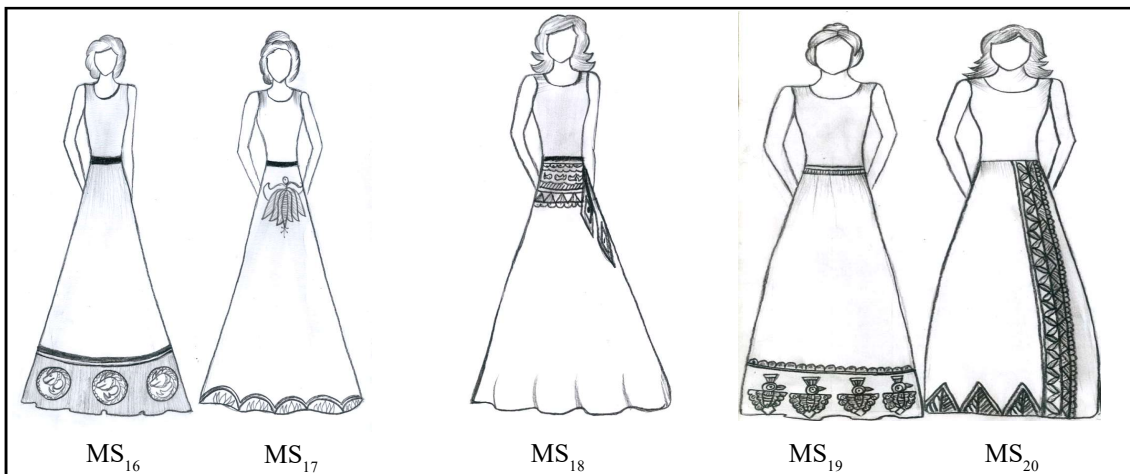


Plate 2 (d) : Manual Sketches Of Skirt (MS)

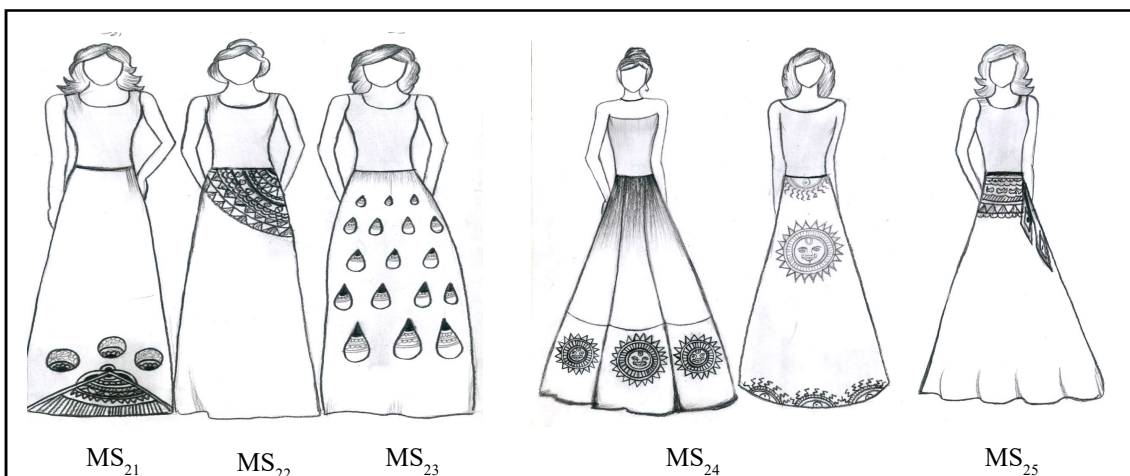


Plate 2 (e) : Manual Sketches Of Skirt (MS)

Madhubani patterns. The size of the petals varied from smallest at the waistline to the biggest at the bottom. About five rows were formed expressing progression in designs.

MS₂₄ – On a panel skirt, sun motif was drawn with triangular outline. Each panel was decorated with this sun motif.

MS₂₅ – This was designed on a semicircular skirt with elaborate sun motif at the centre. A semi circular design with zigzag line at the edges and circle at the centre were used at the waist line. A similar motif was applied at the bottom of the skirt. These manual sketches were assessed and first ten sketches were selected for further study.

Evaluation and selection of manual sketches :

The twenty five designs developed for the Madhubani art were displayed to find the preference of the adolescent girls. The manual sketches were assessed. From their preferences, ten designs were selected for manual colour sketching, and CAD incorporation. Thus prepared manual sketches were evaluated and ten sketches were selected for further study.

Computer aided designing application and evaluation :

The CAD systems allow making of two dimensional and three dimensional product illustrations and visuals. It is possible to create computer aided garment patterns, gradations and a virtual first pattern of the model. So Computer Aided Designing was involved in the study.

CAD application :

The four selected manual coloured sketches were converted into Computer Aided Designs and kept for evaluation. The Corel Draw software was used to design the selected skirt designs by the following procedure. First the croqui was drawn using pen tool and shaped using shape tool. The outline of the garment is drawn using pen tool and bezier tool. The edges of the garment were given a soft and smoothened appearance using smooth tool. Colour eye dropper tool was used for selecting the colours from the image and colour board and filling the garment with colours. Free hand tool and shape tools were used in drawing the motifs used in the garment design. The motifs present in the fabric is rendered using free hand tool. This procedure was used for designing all four Computer Aided Designed (CAD₁ to CAD₄) garments, relating to Madhubani art.

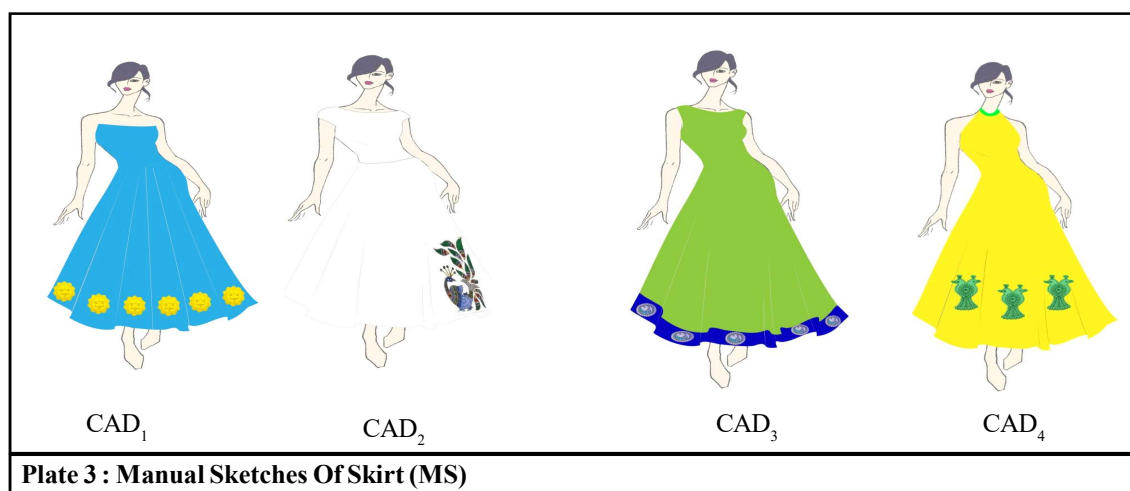


Plate 3 : Manual Sketches Of Skirt (MS)

Evaluation and selection of CAD Designs :

The designs were assessed according to the preference of the subjects with the help of visual aids. As per their preferences the pictures were selected for garment construction. (Plate 3).

Hand painting on fabric :

Based on the evaluation, design number CAD₁ - CAD₄ were selected for hand painting. The selected Madhubani motifs were hand painted on the respective fabrics. The hand painting was done with suitable fabric colours and paint brushes. Painting brushes of different sizes were used for painting the motifs conveniently (Plate 4).

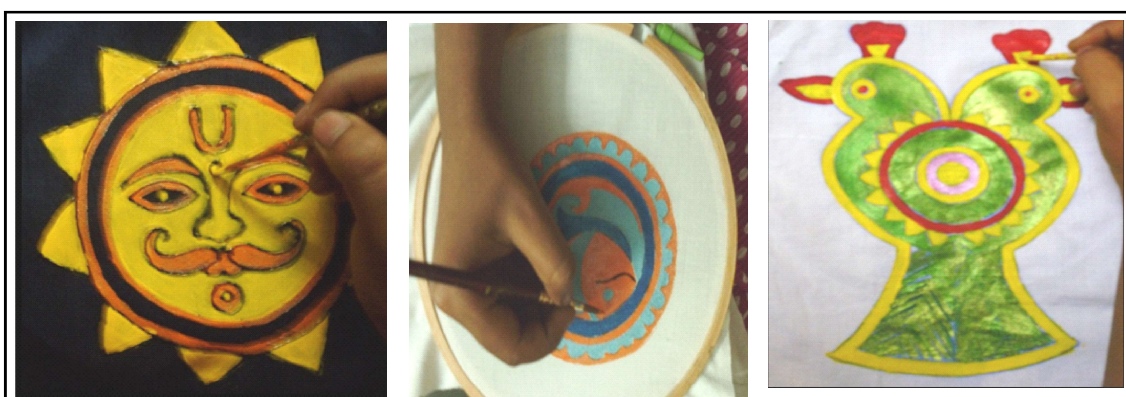


Plate 4: Hand painting on fabric

Construction of skirts :

Garment construction is one of the basic content of fashion designing. Every fashion designer should have detailed knowledge about the process of garment construction (Jindal, 1998). The skirts were constructed by the following steps.

Selection and sourcing of the material :

According to the selected four garment designs, Fabrics were sourced. All the materials were procured from the respective shops as per the requirement. Fabrics varied according to the garment design. Raw silk is nothing but sericin containing silk (www.britannica.com). Raw silk material was selected for the study. It was procured from Arihant Fabrics, Coimbatore. Silk cotton fabric is a blend of both fibers, containing positive characteristics of each into a single textile. A light weight, silky and comfortable weave, silk cotton fabric has a soft hand – feel and a sturdy, silken drape, along with a versatility that makes it suitable for an extended variety of garment uses (www.nyfashioncenterfabrics.com). Silk cotton material was selected for the study which was procured from the shop CCD, Coimbatore. Net is an open Fabric, which is created by connecting the intersections in woven, knitted or crocheted constructions to form a mesh like appearance that will not ravel. Fabric made in a variety of geometric shaped meshes of different sizes and weights. Net material was selected for the study which was procured from CPC, Coimbatore. Crepe is a Fabric with a finely wrinkled or pebble surface and crisp fell (www.goldensilks.com). This material was selected for the study and was purchased from Arihant Fabrics, Coimbatore.

Drafting :

Drafting is defined as a method of drawing patterns on paper with mechanical precision using body measurements. A good drafting makes a good fit. Drafting enhances the accuracy of cutting, stitching and fitting of an attire when worn. It is one of the important steps in achieving good fitting of a garment. Paper patterns were prepared for skirts based on standardized measurements. The instructions followed for drafting skirt are given in Appendix- VII, respectively.

Alteration and transfer of pattern :

The basic skirt pattern was altered according to the designs selected namely circular, semicircular and Panel skirts. The preparation of fabric was done by washing, drying and pressing before it was cut. After thorough pressing of the fabric, trial layouts were made by keeping weights or 2 pins per pattern to make sure that the cloth would be sufficient. Straight grain line on patterns was kept parallel to the fabric selvedge. To ensure this, the pattern was measured, adjusted and pinned on the Fabric (Saluja, 2006). Seam allowances width varies with the garment type. No seam allowance is required on the fold line. It is important that seam allowances added to the pattern are accurate and clearly marked (Aldrich, 2005). Accordingly, the paper patterns were placed on the fabric in the most economical way. Adequate seam allowances were left for each piece. Pattern details namely fold line, grain line, name of the pattern and cut number were followed while placing them on the fabric.

The drafted and altered patterns were transferred using different tools namely tailor's chalk and tracing wheel suitable for various materials namely silk cotton, crepe, raw silk, netted. After transferring the pattern, the fabric was cut according to the outline with appropriate seam allowances.

Construction of skirt :

Every collection was very carefully researched and planned so that all the items in it complements with each other and have basic principles and elements of design like line, shape, value, colour, proportion, balance, unity, rhythm, emphasis and their application to fashion. All these elements were used while constructing the garment (Plate 5).

**Garment – 1 (G_1) :**

Panel skirt was constructed with ten panels. The panels were attached. Then the waistband

and draw strings were attached. The hemline of the skirt was finished.

Garment – 2 (G_2) :

The circular skirt was constructed. A panel was attached on one side of the skirt. The waistband was finished with elastic and then the bottom hemline was finished.

Garment – 3 (G_3) :

The semi circular skirt was constructed. The side seams were attached. The border was attached to the bottom of the skirt. The placket was finished with fastener and waistband was attached along with drawstring. The hemline was finished.

Garment – 4 (G_4) :

The construction of semi circular skirt was made. The side seams were finished. The placket opening was finished with using a fastener and the waistband was finished with elastic. The bottom hemline was finished.

Evaluation of the constructed garments :

The constructed garments were evaluated in two ways as explained below.

Visual inspection :

The visual inspection was made by twenty judges of post graduate students of Textiles and Fashion Apparel of Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore. The garment design, colour selection, painting and overall appearance were studied.

Feedback through self assessment :

The garments were made to wear by the subject and feedback was obtained through self assessment about the principles of good fit namely ease, line, grain, set and balance.

Cost estimation :

The cost of the material, decorations, trimmings, paintings and stitching were calculated for the garments G_1 , G_2 , G_3 and G_4 , and recorded.

RESULTS AND DISCUSSION

Manual sketches :

From the data obtained, it is obvious that the maximum rating of 96.6 per cent was noticed in sample MS_{24} to be excellent followed by samples MS_3 (93.4 %), MS_{16} (93.2 %), MS_2 (90.0 %), MS_{19} (86.3 %), MS_{11} (83.8 %), MS_7 (83.4 %), MS_{20} (82.4 %), MS_5 (80.2 %). The designs namely MS_1 , MS_4 , MS_8 , MS_{10} , MS_{12} , MS_{14} , MS_{15} , MS_{18} , MS_{22} and MS_{23} were rated between 70 - 80 per cent of judges to have excellent general appearance. And the designs MS_6 , MS_{13} , MS_{17} and MS_{21} were rated below 70 per cent to have excellent general appearance.

Design created with CAD :

The results obtained by assessment of computer aided designing are presented in the Table 1.

From the Table 1, it is clear that the design CAD_1 was rated to have excellent general appearance

Table 1 : Designs created with CAD

Sr. No.	Design code	Excellent	Very good	Good	Fair
1.	CAD ₁	97.3	1.5	1.2	-
2.	CAD ₂	83.4	10.0	4.6	2
3.	CAD ₃	90.0	3.4	6.6	-
4.	CAD ₄	86.6	7.5	4.3	1.6

by 97.3 per cent of judges. The design CAD₃ was rated with 90 per cent and the design CAD₄ was rated to have general appearance by 86.6 per cent of judges. The design CAD₂ was rated with 83.4 per cent. Hence it could be concluded that the ranking of the Computer Aided Designs was in the order CAD₁, CAD₃, CAD₄, CAD₂ as per their assessment of the judges.

Visual Inspection Of Skirt Garment :

The results of the visual inspection of skirt are presented in the Table 2.

From the Table 2, it is clear that the maximum of 98 per cent of judges rated the garment G₂ as excellent in design followed by the garments G₁, G₃ and G₄ with 90, 86 and 71 percentages, respectively. The maximum of 93 per cent of judges rated G₂ to have excellent colour selection followed by the garments G₁, G₃ and G₄ with 90, 88 and 80 percentages, respectively. As for the trimmings and decorations are concerned, the maximum of 81 per cent of judges rated the garment G₂ as excellent followed by the garments G₁, G₃ and G₄ with 80, 74 and 70 percentages, respectively.

Table 2 : Visual inspection of skirt

Sr. No.	Garment	Design				Colour selection				Trimmings and decoration				Overall appearance			
		Excellent	Very good	Good	Fair	Excellent	Very good	Good	Fair	Excellent	Very good	Good	Fair	Excellent	Very good	Good	Fair
1.	G ₁	90	8	2	-	90	6	5	-	80	10	10	-	94	6	-	-
2.	G ₂	98	2	-	-	93	4	3	-	81	14	5	-	100	-	-	-
3.	G ₃	86	9	5	-	88	7	5	-	74	20	6	-	86	14	-	-
4.	G ₄	71	18	9	2	80	18	2	-	70	20	7	3	84	11	3	2

The overall appearance was rated as excellent by 100 per cent judges for the garment G₂ and G₁ was rated by 94 per cent of judges, followed by the garments G₃ and G₄ with 86 and 84 percentages, respectively. Hence it could be concluded that the garment G₂ had excellent colour selection, design, trimmings, decorations and overall appearance

Feedback through self assessment :

The Feedback through self-assessment is presented in the Table 3.

Ease :

From the Table 3, it is clear that the maximum of 92 per cent of the subjects rated garment G₂ to have excellent ease followed by the garments G₁, G₃ and G₄ of 86, 84 and 80 percentages, respectively.

Table 3 : Feedback through self-assessment

Sr. No.	Garment	Ease				Line				Grain				Set				Balance			
		Excellent	Very good	Good	Fair	Excellent	Very good	Good	Fair	Excellent	Very good	Good	Fair	Excellent	Very good	Good	Fair	Excellent	Very good	Good	Fair
1.	G ₁	86	10	4	-	86	8	5	1	84	14	2	-	86	13	1	-	80	18	2	-
2.	G ₂	92	6	2	-	88	9	3	-	86	10	4	-	90	7	3	-	94	4	2	-
3.	G ₃	84	10	4	2	82	13	3	2	72	18	10	-	80	18	2	-	82	13	5	-
4.	G ₄	80	14	6	-	76	19	2	3	70	15	12	3	74	21	3	2	78	20	2	-

Line and grain :

As for the line and grain of the garment is concerned the garment G₂ was rated 88 and 86 percentages, respectively to have excellent line and grain, followed by the garments G₁, G₂, G₃ and G₄ with 86, 82 and 76 percentages, respectively for line and 84, 72 and 70 percentages, respectively for grain.

Set :

As for the set of the garment is concerned, the garment G₂ was rated 90 per cent to have excellent set followed by the garments G₁, G₃ and G₄ with 86, 80 and 74 percentages, respectively.

Balance :

The balance was rated to be excellent by 94 per cent of subjects for the garment G₂ followed by G₁, G₃ and G₄ with 82, 80 and 78 percentages, respectively.

Hence it could be concluded that the garment G₂ had excellent ease, line, grain, set and balance.

Table 4 : Cost estimation

Sr. No.	Garment code	Particulars	Cost (Rs.)	Total cost (Rs.)
1.	G ₁	Material cost	490	1,500
		Trimmings and decorations	10	
		Paintings	300	
		Stitching charge	700	
2.	G ₂	Material cost	635	1,475
		Trimmings and decorations	40	
		Paintings	300	
		Stitching charge	500	
3.	G ₃	Material cost	455	1,350
		Trimmings and decorations	95	
		Paintings	250	
		Stitching charge	550	
4.	G ₄	Material cost	420	1,155
		Trimmings and decorations	85	
		Paintings	300	
		Stitching charge	350	

Cost estimation :

The cost estimation is presented in the Table 4.

From the Table 4, it is clear that the cost incurred for material, designing and construction of the samples namely G_1 , G_2 , G_3 and G_4 were Rs. 1,500, Rs. 1,475, Rs. 1,350, and Rs. 1,155, respectively. The cost of constructed skirts ranged from Rs. 1,500 to Rs. 1,155 which is affordable by middle income groups.

Conclusion :

It could be concluded that the inspired traditional Madhubani motifs were beautifully hand painted on fabrics for skirts. The selected Madhubani designs were liked by the adolescent girls. The colours preferred and constructed garments were well appreciated by the adolescent girls.

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