

Fabric manipulation as a fashion inspiration source for children clothes

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Abstract:

During the whole design process sources of inspiration plays a major role, where it is considered the spark for creation. For this reason the designers usually search for novel inspiration sources to innovate new designs catching the eye of customer. The art of fabric manipulation was used in this work as a nontraditional inspiration source to create novel children clothes. Cotton fabric was chosen to accomplish the created designs after dyeing by reactive dye via tie and dye technique. Three ideas of fabric manipulation which are layering and slashing, applique and cut surface quilting in addition to the accomplished clothes were analyzed aesthetically according to the elements and principles of fashion design. From the aesthetic analysis it was observed that, the using of fabric manipulation art as inspiration source facilitated the design process and assisted in creating cheerful, joyful and unconventional children clothes.

Keywords:

Fabric Manipulation, Inspiration Sources, Fashion Design, Children Clothes, Cotton, Tie and Dye

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Introduction:

Designers in textile and fashion industry are under constant pressure to develop novel design ideas where, the design must catch the mood of the season and the eye of the customer. In addition to that fashion industry changes very quickly and continuously poses new challenges to resources and skills (Eckert, and Stacey 2000). For example in knitwear most production machines have been replaced in the last ten years, when technical innovations in machine knitting have nearly reached the patterning and shaping potential of hand knitting. In the early 1990s garments were still mainly sold on patterns and fancy structures; current fashion demands simple elegant knitwear with interesting shapes (Eckert, and Stacey 2000). A design process includes multi creative processes which are research, analysis and decision making. During the whole design process sources of inspiration plays a major role where, the fashion designer needs a novel and fresh spark for creation. Inspiration is considered a magic tool for all designers and it can be found everywhere. (Paksoy and Yalçın, 2005). Garments, photographs of garments, art objects and natural phenomena can be used as inspiration sources by designers for their designs. It is well known, that the inspiration sources help designers to create features of individual designs such as silhouette, details or pattern motifs in knitwear. (Eladwi and

Kotb, 2015).

Sources of inspiration

Sources of inspiration and its personal interpretation, visually and technically, play a vital role in increasing creativity within the design process (Mete, 2015). Anything visual can be considered as a source of inspiration for a design, from a John Galliano garment to a plate of baked beans. The visual appearance and connotations of the objects are the most interested points to designers than anything else (Eckert and Stacey, 2003; Al-Yamani and Bukhari, 2011).

One source of inspiration can be used to create a design, or several sources can be incorporated in one design as designer garment, a Roman ornament and a piece of tree (Eckert, and Stacey 2000; Al-Yamani and Bukhari, 2011).

As all artists, designers and illustrators research for inspiration sources to improve their work and concentrate on absorbing new ideas all the time. (Morris, 2006). Garments (modern or historic), natural objects, Museums and artifacts, architecture, magazines, websites, and textile are considered the most common fashion inspiration sources which be used by designers (Eckert, and Stacey, 2000; Morris, 2006; Sorger and Udale, 2006; Tatham, 2003; Paksoy and Yalçın, 2005; Kotb, 2014; Calderin, 2011). A very important tactile source of inspiration is textile. As the marble which informs the sculptor what it wants to

become, fabric also suggests what shapes and types of manipulation will transform it into a work of art. Silk, chiffon, ribbed knit, lycra, taffeta, or wool felt can confer uniquely different characteristics although they have been made by the same pattern of garment. The designer can design with fabrics based on how they coordinate and contrast with each other. Weight, body, and weave will provide further direction. (Calderin, 2011).

Fabric manipulation

Fabric manipulation is a way by which, the fabric becomes more dimensional. (Przybylek, 2019). The flexibility and softness of fabric enable it to be manipulated in many different ways to synthesis raised textured, tear and lumpy surfaces that can be both regular and irregular. Manipulated surfaces can be used as a decoration –for example, a ruffle- or as a finished piece, such as a quilted panel. Tearing, scrunching, pleating, tucking,

applique and gathering are the old and well known methods of manipulation. But modern fabric artists continue to use and adapt them in novel ways (Triston and Lombard, 2011). The following are some new ideas of fabric manipulation:

1.1.1. Layering and slashing

Several layers of woven fabric are used in this type of manipulation which accumulated on top of each other and stitched by machine in orderly spaced lines. Except the bottom layer all layers of fabric are cut through, using very sharp small scissors or stitch ripper. The raw, cut edges are brushed, either with a suede brush or toothbrush, to raise the fibers and create a 'faux chenille' effect. The stack can be made from the same fabric or a variety of different ones (Triston and Lombard, 2011). Figure (1) shows the slash and layer manipulation technique



Fig. (1) The layering and slashing manipulation technique

1.1.2. Trapping

This manipulation is relative to layering technique; in which a sheer or transparent fabric is used over the top of a background to hold in place something in between. The background fabric can be plain or printed and the top layer can be completely see-through for example chiffon or netting. While in the middle part scraps of fabric and threads, beads and sequins, natural and found objects, papers and plastics, powders and glitters,

coins and washers can be employed. Also, both top and bottom layers can be transparent, allowing the middle layer to be encased in fabric and viewed from the two sides. Depending on the content of the middle layer, hand or machine stitch should be used to hold the top and bottom layers in place, permanently trapping the contents. (Triston and Lombard, 2011). Figure (2) shows trapping manipulation technique.



Fig. (2) The trapping manipulation technique

1.1.3. Repiecing

A new textile surface can be achieved through

this technique by stitching, cutting and repiecing fabrics and threads in regular or random way. The

selected fabrics, threads and recycled materials can be diverse in their textures, densities, weaves and patterns, but there needs to be a unity between them in the color scheme, tone or theme to make a harmonious whole (Triston and Lombard, 2011). In this technique the strips of fabric stitch along their edges on a thin background of fabric. These machine stitches can be small or large, straight or decorative, free or patterned. After that, the newly formed surface is cut into several equally sized squares, which repieced in a new formation on to a new thin background fabric and re stitched by hand or machine. (Triston and Lombard, 2011). Figure (3) shows repiecing manipulation technique.



Fig. (3) The repiecing manipulation technique

1.1.4. Reverse Smocking

This method of fabric manipulation utilizes stitching to gather fabric and creating areas of tension and release in a sculptural effect. This raising areas look like tubes, squares or pinwheels. Smocking requires a soft fabric not stiff or thick; silks, linens, and cottons work well in this technique. (Stephanie Przybylek, 2019 ; Wolff, 1996). Figure (4) shows reverse smocking manipulation technique.

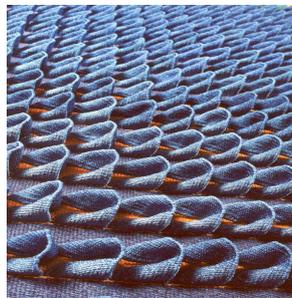


Fig. (6) The cut surface quilting manipulation technique

1.1.7. Cut away applique (reverse applique)

This is a free machine embroidery technique, which also referred to as reverse applique. More than one layer of fabric is used in this technique. These layers are piled up and hand stitched by



Fig. (4) The reverse smocking manipulation technique

1.1.5. Stuffed Quilting

Two layers of fabric are used in quilting; between these layers padding is inserted. Commonly a thin butter muslin is used for the underneath layer. The padding is inserted from the back of the material into 'pockets' created by stitching around the design. (Wolff, 1996; Brown, 2004). Figure (5) shows stuffed quilting manipulation technique.

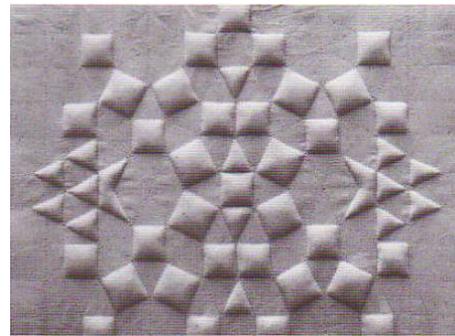
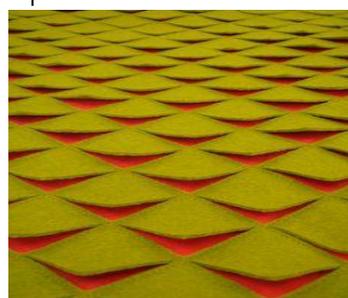


Fig. (5) The stuffed quilting manipulation technique

1.1.6. Cut surface quilting

This technique is used to create geometric designs loosely inspired by traditional square patchwork quilts. (Singer, 2013). Figure (6) shows cut surface quilting manipulation technique.



straight stitch. After that by using small and sharp scissors selected areas are cut away close to the stitched boundaries to reveal the fabrics beneath, giving a soft-edged finish. Through this technique several created surfaces can be achieved as follow:

- Cutting away the top layer.
- Cutting through all layers to make holes and spaces.
- Slitting layers and stitching them back.
- Cutting away layers from both sides to reveal a single middle layer of fabric.



This versatile technique confers the opportunity to make small or large, angular or fluid shapes, patterns and designs (Triston and Lombard, 2011). Figure (7) shows the cut away applique manipulation technique



Fig. (7) The cut away applique manipulation technique

1.2. Children clothes

Children were dressed like adults clothes until the late nineteenth century, but they were made more comfortable by simplified the design and flatten it. Children's clothes were usually made by family member or, dressmaker. The mass production of children's clothes began in the 1870s, but these early garments were simple basics with little style or, imagination (Abdel Ghani *et al.*, 2014)

The cotton is the most fiber which widely used in children's clothes, because it is comfort, safe and inexpensive fiber. In addition to that, the cotton fabric can be dyed in bright shade with several colors and it can be available in different weights and designs of woven and knitting fabrics. Pure cotton fabric is worn next to the skin and it is ideal for T-shirts and underwear, where it is soft and absorbent (Abdel Ghani *et al.*, 2014; Weber, 2008). With their sensitive skin, babies especially, need soft clothes. Also Cotton helps to keep infants dry and comfortable as it is a breathable fiber (Weber, 2008). Cottons can be layered or quilted for greater warmth during fall and winter. Also it can be made in Heavyweight as durable twills and denims (Abdel Ghani *et al.*, 2014; Weber, 2008).

The aim of this work (which is a part of graduation project) is to explore a new inspiration source of fashion design and utilize it in designing children clothes. This source is the art of fabric manipulation by which adding a new texture to the plain cotton fabrics and create fun and cheerful children clothes.

2. Experimental work

2.1. Materials

2.1.1. Fabric

100% cotton fabric (1/1) plain weave having 25 ends/cm and 25 picks/cm.

2.1.2. Chemicals

Common salt and soda ash of laboratory grade chemicals were used.

2.1.3. Dyes

Commercial reactive dyes (Blue, Green, Orange, Pink, Yellow and Purple) were used to dye the cotton fabric.

2.2. Methods

2.2.1. Tie and dye technique

The cotton fabric was dyed with reactive dye by tie and dye technique according to the following procedure:

1. The pattern of tie and dye is prepared by knotting and folding parts of cotton fabric.
2. The fabric was firstly impregnated in warm water. After that it was squeezed and impregnated in aqueous solution of reactive dye (with different shades) in alkaline media (20g/l of soda ash) and salt (40g/l) at 60 °C for 1 hour.
3. The dyed fabric was patched in plastic sheet for 24 hours.
4. Finally, the dyed fabric was dried in ambient condition, then washed by 2 g/l nonionic detergent at 40 °C for 20 min., finally rinsed by tap water and dried.

2.2.2. Fabric manipulation

In this work three techniques of fabric manipulation were carried out and used as inspiration source for kids' clothes.

2.2.2.1. Layering and slashing

This technique was carried out in design (1), (2), (3) and (4), by the conventional method. Where, two or three layers of woven dyed cotton fabrics were used and fixed on top of each other by machine stitches in regular spaced lines and squares. After that, the top layers of fabric were cut through using sharp small scissors.

2.2.2.2. Applique

This technique of manipulation was carried out by two methods:

- **Hand applique;** in which the patterns were created by the attachment of smaller pieces of fabric (circles, stripes) to the larger piece of contrasting colour fabric. Then, these pieces are sewed by hand stitches. This method was used in design (5) and (6).
- **Reverse applique;** in this method, two or three layers of fabrics were put on top of each other both with right side up. The applique template was printed onto the top fabrics. Then, the design was cut inside of marked line in the top layer. Hand stitches were added along the edge of the cut-out part of the top fabric to join the fabrics together. This method was carried out in design (8) and more than two layers of fabric were used in design (7).

2.2.2.3. Cut surface quilting

The cut surface quilting technique is used in this work with some alteration where, small and large strips of cotton fabrics were fixed by hand or machine on surface of the basic fabric and cutting these strips horizontally to smaller distance than their width. After that the slashing parts were fixed by hand stitch on different points to give a geometrical effect. This method was employed in design (9), (10), (11), (12).

2.2.3. Designs and their layout

Twelve designs of children clothes were created and executed by dyed cotton fabric with manipulation techniques. Their patterns have been carried out as described in metric cutting (Aldrich, 1997). The following pictures show each design and its pattern.

2.2.3.1. Design no. 1

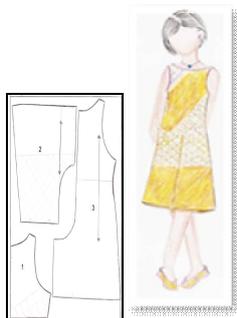


Fig. (8) Design no. 1 - Fatam Faris design and its pattern

Width: 90 cm, **length:** 90 cm, **Layer:** two layers, **size:** 4 years, **Scale:** 1:30, **Layout:** (1-Upper part of front jump suit. 2- Lower part of front jump suit. 3-Back of jump suit)

2.2.3.2. Design no. 2



Fig. (9) Design no. 2 - Fatma Bassem design and its pattern

Width: 90cm, **Length:** 152cm, **Layer:** two layers, **Size:** 6 years, **Scale:** 1:30, **Layout:** (1-front of blouse. 2- back of blouse. 3-inform of blouse front. 4-inform of blouse back. 5- part 1 of the trouser back. 6- part 1 of the trouser front. 7-part 2 of the trouser back. 8- part 2 of the trouser front. 9- waist band of trouser front. 10- waist band of trouser back).

2.2.3.3. Design no. 3

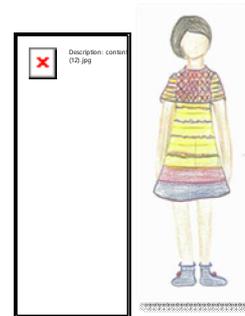


Fig. (10) Design no. 3 - Shereen Essam design and its pattern

Width: 90 cm, **Length:** 112 cm, **Layers** = two layers, **size:** 6 years, **Scale:** 1:30, **Layout:** (1- lower front of dress 2-lower back of dress 3-upper front yoke of dress 4-upper back yoke of dress 5- sleeve of dress 6-front neck inform of dress 7-back neck inform of dress).

2.2.3.4. Design no. 4

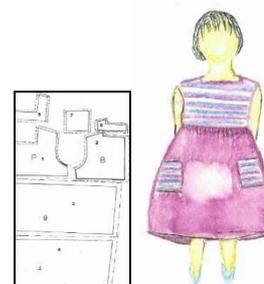


Fig. (11) Design no. 4 - Amani Ebrahim design and its pattern

Width: 90 cm, **Length:** 79 cm, **Layer:** two layers, **Size:** 4 years **Scale:** 1:30 **Layout:** (1- Upper part of front dress. 2- upper part of back dress. 3part of lower back dress 4-lower part of

front dress. 5- front neck in form 6- back neck inform-7 pocket).

2.2.3.5. Design no. 5



Fig.(12) Design no. 5 - Fatam Faris design and its pattern

Width: 90 cm, **length:** 84cm, **Layer:** two layers, **size:** 4 years, **scale:** 1:20, **Layout:** (1- Upper front yoke. 2- Front of dress. 3- upper back yoke. 4-

back of dress. 5- Front neck inform. 6- Back neck inform. 7- Short sleeve. 8&9-cuffe of sleeve.)

2.2.3.6. Design no. 6

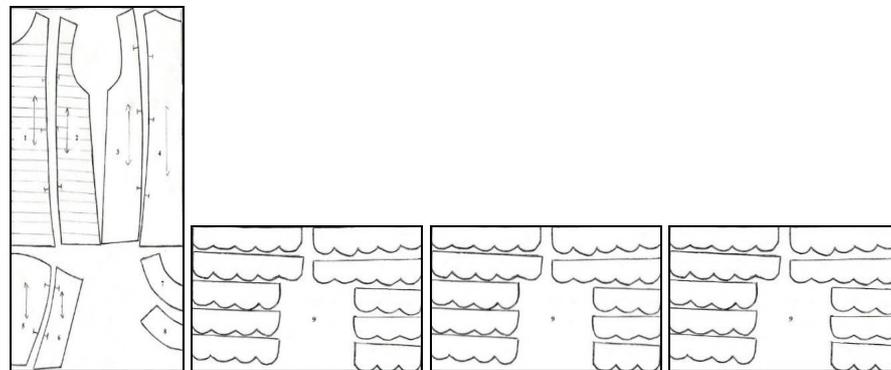


Fig. (14) Design no. 6 - Fatma Bassem design and its pattern

Width: 90cm, **Length:** -length of layout (1): 96cm -length of purple, yellow, and blue strips: 28cm **Layer:** two layers, **Size:** 4 years, **Scale:** 1:20 and 1:15 for strips layout, **Layout:** (1-part 1 of front dress. 2-part 2 of front dress. 3-part 1 of back dress. 4-part 2 of back dress. 4- part 2 of back dress. 5-part 1 of sleeve. 6-part 2 of sleeve.7-inform of front dress. 8-inform of back dress. 9- decorative strips).

layers, **Size:** 4 years, **Scale:** 1:15, **Layout:** (1- upper front yoke of jumpsuit. 2-upper back yoke of jumpsuit. 3-lower front of jumpsuit. 4-lower back of jumpsuit. 5 & 6- back straps of jumpsuit. 7&8-front straps of jumpsuit).

2.2.3.7. Design no .7

2.2.3.8. Design no. 8

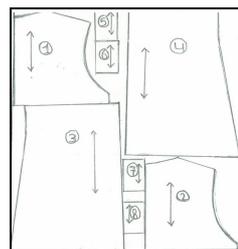


Fig. (13) Design no.7 - Shereen Essam design and its pattern

Width: 90 cm **Length:** 48 cm, **Layers:** two

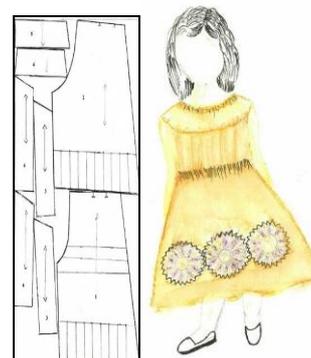


Fig. (15) Design no. 8 - Amani Ebrahim design and its pattern

Width: 90 cm **Length:** 124 cm **Layers:** two layers **Size:** 6 years **Scale:** 1:7 **Layout:** (1 -upper part of front dress 2-upper part of back dress 3- lower part of front dress 4-lower of back dress 5- front of yoke 6-back of yoke of dress).

2.2.3.9. Design no. 9

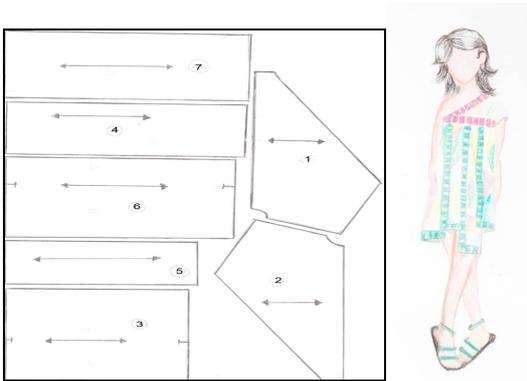


Fig. (16) Design no. 9 - Fatam Faris design and its pattern

Width: 90 cm, **Length:** 84 cm, **Layer:** one layers, **Size:** 6 years, **Scale:** 1: 18, **Layout:** (1-Upper part of front dress. 2- Upper part of back dress. 3, 4, 5, 6, 7- lower parts of dress.)

2.2.3.10. Design no. 10

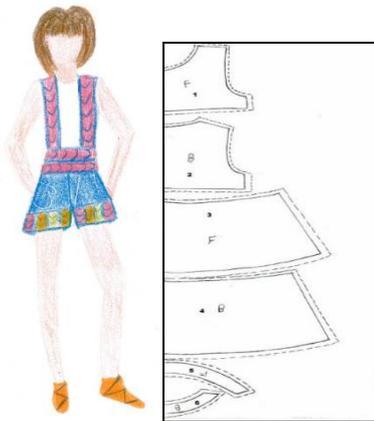


Fig. (17) Design no. 10 - Fatma Bassem design and its pattern

Width: 90cm, **Length:** 80cm, **Layer:** two layers, **Size:** 4 years, **Scale:** 1:16, **Layout:** (1-front of lower part of jumpsuit. 2-back of lower part of jumpsuit. 3-front strap of jumpsuit. 4-back strap of jumpsuit. 5-front inform of lower part of jumpsuit. 6-back inform of lower part of jumpsuit).

2.2.3.11. Design No. 11

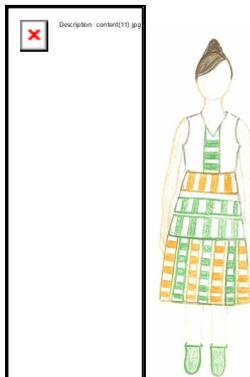


Fig. (18) Design no.11 - Shereen Essam design and its pattern

Width: 90 cm, **Length:** 124 cm, **Layers:** two layers, **Size:** 6 years, **Scale:** 1:25, **Layout:** (1-

lower front of dress. 2-lower back of dress. 3- upper front yoke of dress. 4-upper back yoke of dress. 5-front armhole inform of dress. 6-back armhole inform of dress. 7-front neck inform of dress. 8-back neck inform of dress.)

2.2.3.12. Design no. 12

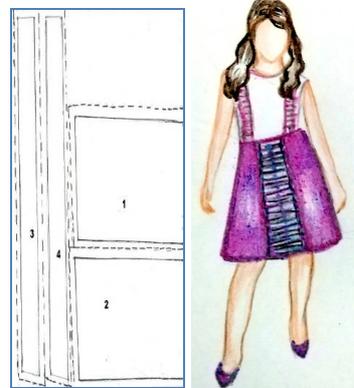


Fig. (19) Design no. 12 - Amani Ebrahim design and its pattern

Width: 90cm, **Length:** 100cm, **Layer:** two layers, **Size:** 6 years, **Scale:** 1:6.5, **Layout:** (1-front of jump suit. 2- back of jump suit. 3- front strips. 4- back strips).

3. Results and discussion

3.1. The analysis of inspiration sources and the final products

Any person studies design whether, an artist, architect, or fashion designer utilizes the same basic tools which are the elements of design. These are color, line, shape, space, and texture. All of these elements can be used individually and in combination to create different visual effects. The main element which is used in this work is texture; texture describes the surface characteristics that determine the look and feel of an object. Fabric texture results from the fiber, yarn, construction, and finish used. In the present work the plain cotton fabric was altered and gifted different textures through the fabric manipulation technique. Changing the texture of fabric and adding new texture make the clothes design unique, more individual and wonderful. The using of cotton fabric in all designs (twelve designs) is considered a very suitable fiber type for kids' clothes which affords comfort (soft feel, no skin irritation and high absorbency) and safety (no static build up) properties.

The following is the analysis of each inspiration idea of manipulation technique and its resulted designs.

3.1.1. The first idea; slashing and layering

The first idea of manipulation is the layering and slashing technique as shown in fig. (20); in which more than layer of fabric in different colors is used. This technique was used via different

ways; by slashing the top layers to give strips shape (which may be vertical, horizontal or diagonal) or by slashing in four sided to give checks or flower shape. Also it was used in both ways. This manipulation technique adds more volume and weight to the fabric. And the resulted effect differs according to the way in which it would be used. If it used as vertical lines, it will lead the eyes up and down, and give a feeling of

strength, dignity, and formality and in case of horizontal lines, the eyes move from side to side, giving the illusion of width rather than height. But the slanted lines add movement and excitement to the clothing. In addition to that this manipulation technique gives chance to use different colors of layers which make the clothes design more joyful and fun.



Fig. (20) The applied slashing and layering techniques



Product no. (1); Fatam Faris



Product no. (2); Fatma Bassem



Product no.(3); Shereen Essam



Product no. (4); Amani Ebrahim

Fig. (21) The products of slashing and layering inspiration source

The slashing and layering technique gives the four kids designs the pleasant and cheerful effect in addition to excitement by moving the eye through the whole design. This technique was utilized through different ways as shown in fig. 21. In design (1) and the upper part of design (4) it gives flower shape by slashing in four sides and

machine sewing in vertical and horizontal direction in addition to use 3 colored layers (yellow, violet and turquoise colors in design (1) and fuchsia, yellow and blue in design (4)). But slashing and secured each side or rib by small stitches in design (2) allows the two lower layers to be more apparent and confers a leaf shape.

However in design (3) and the lower part of design (4), the slashing of the upper layers and stitches are in horizontal lines but with different distances; small in design (3) and larger in design (4).

The distribution of layering and slashing technique had been done in a pleasant order and good proportion in all four designs which produces a delicious harmony. In design (1); jumpsuit, adding small part of slashing and layering on the left shoulder and back which repeats the large part in the front of design makes attractive asymmetrical balance and harmony. In design (2) the slashing and layering is appeared in blouse in bigger scale than those in trouser, which moves the eye in the whole design and make the symmetrical design more interesting and delightful. But in design (3); the tubular dress, the technique was repeated in the same shape and size but in a different way and distance as it was made on the two pockets in the lower part of the dress. This difference makes the symmetrical dress more enjoyable. While, the slashing and layering was repeated in design (4); the bell dress, in a different way where it is appeared as flower or checks in the top part of dress and as horizontal lines with different distances in the lower part of the dress. This variation of slashing and layering shape as well as the gradation effect in the lower part of dress creates a good rhythm.

In addition to the manipulation technique, the color element was used carefully in these designs. Color in kids clothes play an important role in their psychology, so bright colors were utilized in dyeing of cotton fabric to elevate kid's mood via adding happiness and fun.

The design (1) of this group is a yellow jumpsuit with violet and blue colors. The yellow color expresses excitement and stimulates action, which encourages kids to be cheerful and joyful. The calm effect of using blue and violet colors in the lower layers balances this excitement effect. But the blouse and trouser in design (2) were dyed in dark bluish green or petrol color; however employing warm yellow and fuchsia colors in the lower layers produces vibrate effect and reduces the boredom effect of dark bluish green color. Pink color in design (3) gives good emotions and spirits in addition to the feeling of happiness. The combination of white with pink in addition to blue and violet colors of lower layers gives the calm and peaceful effect. The using of bright color scheme which is split complementary color scheme in design (4); yellow with red violet and blue violet is very appropriate to kids' clothes. This color combination gives joyful and blissful impression for this dress.

The silhouette of these designs; tubular in design (1), (2), (3) and bell shape in design (4) gives comfort and freedom of movement that encourages a child to move, play, and explore.

3.1.2. The second idea; applique

The base rule of applique is the stitching of cut-out designs of different fabrics to another fabric to create a decorative effect. This technique is extremely appropriate to kids' clothes, where different decorative features can be accomplished through it. This technique makes kids' clothes more delightful and joyful and promotes their mood.



Fig. (22) The applied applique techniques



Product no. (5); Fatam Faris



Product no. (6); Fatma Bassem



Product no.(7); Shereen Essam



Product no. (8); Amani Ebrahim

Fig. (23) the products of applique inspiration source

As shown in fig. (23), the applique was employed via two ways; traditional in design (5), (6) and reverse applique in design (7), (8). The traditional one was creatively applied, where gathering strips and different size of circles were used in design (5), and multi coloring strips are fixed between princesses lines in design (6). The gathering stripes in design (5) invite the eye to travel without interruption over the entire dress. In addition to its distribution with circle pieces which, was done in a good manner and produces a pleasant harmony. While the colorful strips in design (6) were applied gradually along the dress and sleeve which, awards continuity and feeling of movement consequently gives good rhythm.

On the other hand, the reverse applique provides kids' clothes versatile effects as activity, excitement and happiness where multi coloring layers were used in design (7) and different hand stitches in addition to geometrical effect in design (8).

The color element plays remarkable role in these four designs where, it is the first aspect which catches the eye especially in design (5) and (6). Using of bright colors in design (5) and (6) give children the happiness and joyful emotions. The two designs have multi colors and combination of warm and cold colors, which is very appropriate to children clothes. The pink color in design (5) gives a feeling of gaiety, activity and cheerful which is balanced with peaceful and faithful effect of white color. Furthermore using yellow, yellow green and blue colors in small scale with good distribution on white color balance the pink color in the top part of the dress which moves the eye and creates an interesting design. The contrast effect is the main feature in design (6) by using more than one color scheme which affords great contrast effect. Yellow with complementary violet color as one scheme, in addition to use triad color

scheme in yellow, turquoise and pink colors gives a considerable contrast. This effect confers kids the activity and energy, also make the dress fabulous and elegant. But in design (7) and (8) calmness is the first impression when the eye observes them that related to the using of the violet color as well as pale yellow and blue in design (7) and salmon pink in design (8). The arrangement of yellow and blue colors with violet in reverse applique in design (7) makes the design more contrast and interest. In addition to that, employing blue and yellow shoulder strips repeats the colors in reverse applique design, catches the eye and creates a good harmony with the whole design. The violet color in the reverse applique as well the herringbone stitch in design (8) creates emphasis to the lower part of dress; however the large bertha collar catches the eye to the top part, produces a good balance and adds joyful and blissful emotions to kids.

The four designs are considered comfort clothes where, their silhouette enables kids to move and play in free way, also the neck opening shape makes the wearing and taking off is easy.

3.1.3. The third idea; cut surface quilting

The cut surface quilting is used in these designs with some alteration where, small and large strips of cotton fabrics were fixed by hand or machine on surface of the basic fabric and cutting these strips horizontally to smaller distance than their width. After that the slashing parts were fixed by hand stitch on different points to give a geometrical effect.

The geometrical effect of cut surface quilting makes these four designs more animated, dynamic and active. This dynamic effect affords kids clothes to be more interesting and pleasant. In addition to that, it catches the eye firstly before anything else and makes the clothes more kindly and friendly with kids. It simulates kids personality where, activity, movement and vitality.



Fig. (24) the applied cut surface quilting techniques



Product no. (9); Fatam Faris



Product no. (10); Fatma Bassem



Product no.(11); Shereen Essam



Product no. (12); Amani Ebrahim

Fig. (25) the products of cut surface quilting inspiration source

This manipulation technique has been employed with different width of strips and by different ways and it presents a vital role in balance between design parts in these four designs. In design (9) small strips were fixed on the vertical seam lines and on the unequal hemline of the dress, which balances the diagonal neckline of dress. But two width of strips were used in design (10) where, small width of strips on the lower part of the short and large as a band and on the straps.

Also, the strips were used in large width with vertical and horizontal application in design (11). And the larger width strip was sewn by hand stitches on the vertical front line of strap skirt in design (12) and the cutting strips were fixed by decorative buttons, these decorative strips balances the pleated straps and makes a pleasant harmony.

The colors and the tie and dye techniques which used in these designs makes them more interesting

and versatile. The using of more than degree for both violet and green color in design (9) creates an amazing rhythm through the whole design. Also the degradation of green color in the cut surface quilting strip gives the dress more movement and activity. While using of warm yellow, orange and berry colors in design (10) gives the short cheerful and active emotions which elevate kids' mood and encourage them to play and rejoice. In addition to that, using blue with white colors as a back ground for these warm colors adds calmness effect and makes a good balance to the total emotions. The using of white color with simple tie and dye in the upper part of dress in design (11) balances the concentrated colors in the lower part and adds purity and cleanliness. Also, the excellent repetition of strips with changing its direction moves the eye all over the design and makes a good rhythm. The sunny yellow color in this design gives cheerful and optimistic effect in addition to balance the dark petroleum color. The color and tie and dye in the straps skirt in design (12) have versatile effects. The pink represents the sweet and innocent in addition to the energy, also the deep green adds more power to the pink and restful effect to whole design. While white color gives purity and peaceful effect, which balances the total emotions of design and achieves good harmony.

The comfort properties of these four designs have been achieved by the loose silhouette which enables kids to move freely and run in a floating way. Also, kids can wear these designs easily.

Conclusion

The sources of inspiration are very important in fashion design process. And the searching for new and unconventional sources helps in creating novel and unique designs. The fabric manipulation art was used as nontraditional inspiration source to design children clothes in this work. The utilized ideas of fabric manipulation technique assisted to create twelve cheerful children designs. In addition to the using of both cotton fabric and tie and dye technique to implement the designs helped the whole image of children clothes to be more cheery and joyful.

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