

Fabric Manipulation and its impact on Fashion Designs Education (part 1)

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Ready-made garment Technology's Readymade Garment

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Abstract: *The present research demonstrates an interaction technique as fabric implementations for putting garments on a three-dimensional character with manipulating them with its application on fashion. Furthermore to realize and examine the potential of the fabrics and materials which could be manipulated using different techniques and processes to innovative designs and artwork which could be applied to fine art, originate textile or fashion scenario. On the other hand, to develop different ways of altering fabric to provide contrasts, to create a sense of fullness, and create surface effects. Some of these methods are very old, but contemporary fabric artists and fashion designers continued to use them and adapt them in new styles.*

Key words: *Fabric implementations, fullness, surface effects, contemporary fabric.*

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I. Introduction

Treptow (2013) [1] explained that "fabrics are fashion raw material." out of them, the motif is transformed into garment design products. Dior (2009)[2] pronounced that: "Fabrics do not only convey the dream of a designer but also motivate the ideas". They can be a source of revelation and many of his designs were born from fabric inspiration. Jones (2009)[3] proclaimed that "the fabric or the materials from which the garments were made could determine the success or failure of a style that is considered good on paper. Most of the designers, however, choose fabrics before originating a piece or a collection. They like to have the extraordinary quality by the texture and material manipulating and then, search for something that has the pretty fit design.

Textile artists and fashion designers use a wide range of media, materials, techniques, and transfer them to texture within their work [4]. Textile designers and artists are continually striving for innovative designs and practical work.

In the field of textile and fashion design, practitioners examine and work out with different techniques of manipulating fabric. Fabrics for interiors and home, however, manipulation designs could be used in practical applications, such as fashion garments and accessories. In addition, they could also be used in scenarios where the function of textiles work isn't basically dependent on the fabric manipulation itself such as freestanding structures, hangings, and soft presentations.

As far as designers actively engaged in fashion design to develop their ideas by considering what they have discovered, the information could then feed into the fashion design process. This application gives them information on the properties of fabrics, both synthetic and natural. Volino and his colleagues [5] explained that putting garment on a 3D character is often a tiresome, monotonous, as time-consuming task. A typical approach is to allocate parts of the garment around the target body as solid thin sheets to simulate and perform "stitch-together" and show the impacts of gravity. The three-dimensional performance might be placed in a particular pose (e.g., arms outstretched) and then some "throwaway" animation may be used to get the character into a desired pose. However, Dachille and others [6, 7] proposed that placing thin sheets in three-dimensional space using a 2D input device is difficult, and it is not capable of bending easily without breaking for exploring various nonstandard ways of wearing clothes.

Although recent prompt garment simulation systems enable real-time manipulation of clothes: the consumer can grab a piece of garment and drag it around in 3D space, but this is like manipulating clothes with tapered sticks of wood; it's not ideal for putting clothes on a three-dimensional character.

Punpongson et al (2018) [8] clearly explained that the appearance of fabric motion is proposed to affect the human observation of the curvature of his body. The curvature lines and stiffness of fabric is an influential indicator for determining the body comfortability, eventually, influencing a consumer's purchase

decisions. In the textile industry, the curvature lines and stiffness of garments are significantly considered to supply customers with favorable impressions.

II. The Research Plan.

II.1.The problem of research and limits:

The conceptual frameworks with the combination of two different technical styles might produce modern and contemporary artworks.

For organising the experience of the research, the analytical approach should be used in monitoring and studying the concept of the rules of different types of lines on fashion design.

II.2.Research question

1. To what extent could the techniques of fabric manipulation as an input to the integration of the rules of different types of fabrics in fashion design serve the body shape?
2. Should the field of fashion artworks combine with explaining the aesthetic of different types of manipulation that could help the fashionable dress model?

II.3.Research Importance

1. The research emphasizes the relationship between fabric manipulation and the construction of a dress fashion trend.
2. Fashion designers have to understand the mechanisms of different fabric manipulation for creating aesthetic values.
3. The types of fabric manipulation should meet the needs of the body Figure group / occasion and be able to express the individuality as well as the creativity of the designer.

II.4.Research Goals

1. The research seeks to draw a shed light on the fabric manipulation techniques practices and the works performed on fashion design through the effect of types of manipulation.
2. The research supports the field of fashion designers and work in the college specifically in terms of experimental and formative terms that carry the methods of applying fabric manipulation techniques and the aesthetic innovated dimensions.
3. The research improves the appreciation of beauty through the fantastic framework and dimensional types of the body as well as diverse values.
4. The research unlocks the students' intelligent horizons to inside the world of fashionable art and its actual application of use of this idea.
5. The research help the students to be able to express inspiration, thoughts and a natural instinctive state of mind deriving by knowing the type of technique.

II.5.Search Limits

1. The work is mainly dealing with student's ready-made garment specially and, the beginners of fashion designers in general.
2. Emphasis on the body figure and designers need to consider for whom they are styling what type of garment they promote, and for what particular occasion.

II.6.Research hypotheses

The combination, and assemblies, between the different types of fabric manipulation, renovates, and expands the art fashion field in the college with modernistic and synchronous designs.

III. The Art of Manipulating Fabric

III.1.What is Fabric Manipulation?

Fabric manipulation is a three-dimensional approximation of clothing from flat patterns. There are numerous ways to manipulate and redesign fabric or control it so as to become 3-dimensional forms. During history, people have invented different ways of modifying fabric to provide contrasts, to create a feeling of fullness, and create a surface and different textured effects. Some of these methods are very old, but the artists of contemporary fabric continue to use and integrate them in innovative ways.

III.2.Fabric manipulation–

Wolff and singer (2013) [9, 10] explained that the large variety of techniques, applications, and materials enables the students to create a unique textile surface with rich and exotic textures, gorgeous color and

three-dimensional manipulated forms. There is an array of new and innovative techniques that can be made with exploration and experimentation of reshaping the fabrics.

III.3.Types of manipulation.

III.3.1.Gathering.

Gathering could be done by hand or by machine. Just the threads, elastic materials. Gathering however, is only one or both edges to produce different effects, as does the volume and shape of fabric as shown at Photo (1).

III.3.2.Shirring

Shirring means gathering the fabric with multiple rows of stitching. These rows can be stitched all in one direction or in two different directions crossing each other. It could also do shirring pattern by stitching for example wavy- or angled lines as each style produces different outcomes as at Photo (3).

III.3.3.Rushing

Rushing is a related method, in which layers of fabric are gathered on parallel sides and then sewn to a layer underneath. You sometimes see this fabric technique on the tiers in the sides of prom and party dresses as at Photo (4).

III.3.4.Ruffles

Parute (2018) [11]. Narrated that the general effect of fabric ruffles can show similarly flounce, where ruffles are the same style of detail and occasionally used interchangeably. From a pattern and construction view, however, they are shaped in very different forms. Generally speaking, a ruffle is constructed by using a piece of a rectangle fabric that is gathered up into a smaller area. When ruffle is stitched into a seam line, such as on the waistline of a skirt, the excess fabric fullness will be obviously gathered on the stitch line originating small pleats of fabric.

Ruffle is often used as neat as smart in an appearance on clothes and is a pleated piece of decorative fabric. The word ruffle is mysterious, but it might be from the Low German word ruffelen which means to wrinkle. Moreover, a fancy wrinkle at the bottom of the dress is ruffling fabric manipulation [12].



Photo (1).



Photo (2).



Photo (3).



Photo (4).

III.3.5.Flounces

Flounce - according to Collins dictionary[13], a flounce is a piece of cloth that has been stitched into folds and fixed around the edge of something, for example a gown with a flounce around the hem, or a skirt, tablecloth, curtain as at Photo(5,6).

In contrast, a flounce is mostly based on a more circular model; otherwise, more like a donut-shaped pattern. The inside edge of the “donut” is the edge that is stitched into the seam line while the outside edge of the donut originates fullness at the hemline as Photo (7).



Photo (5).



Photo (6).



Photo (7).



Photo (8).

III.3.6.Frill

According to Merriam-Webster dictionary [14], frill a gathered, pleated, or bias-cut fabric edging used on clothing. Figuratively it also refers to something decorative or useful and desirable but not essential. The following photos are showing some sort of Flounces,.



Photo (9).



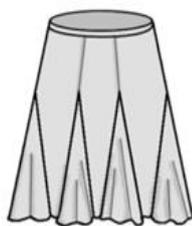
Photo (10).



Photo (11)

III.3.7.Godet

There are different methods in which fabric can be decreased in size to suit the body curve or enlarged to innovative volume. One way of creating fullness and volume in a skirt or dress is by inserting panels into the fabric and these are commonly known as godets.



(A)



(B)



(C)



(D)

Photo (12).

Nicoll Collections (2012) [15] showed that the style of the godet pattern has been used to create skirts and dresses that tend to be smooth over the waist and hips line and to create fullness through the skirt. In addition, the outline of the garment's body has lengthened the line of the garment down before it flowed smoothly into the fuller folds of fabric. A godet skirt is a triangular piece set into a skirt gore to give added

fullness to a flared hem edge. Godet makes the skirt flare and eventually creates more fullness to the skirt as shown at Photo (12 A, B, C, D).

III.3.8.Pleating

Kume and his colleague (2015) [16] have defined the Pleats as folds established on a piece of fabric. According to the technical language, the related terms have differences. The principles of pleats are important by which the characteristic of pleats as some sort of texture is one of the fundamental elements of design, aesthetic tools and the means by which designers can subtly adjust the spotlight and effects on the clothing. The technology of pleats is focused here on manual and semi-industrial techniques. A patterned framework from simple knife pleats, to complex one as tessellations.

Pleating involves folding fabric back on itself, sometimes very tightly, to give a dimensional effect. The pleats can be pressed with an iron to create sharp edges or left unpressed to allow them to curve more naturally for a softer effect as at the Photo

(13 A ,B, C, D)is showing Matan Shaked Bridal Collection(2019) is A Modern Bride’s Dream wedding dress, whilst the Photo(14)is showing Ezpopsy double-breasted Sleeveless Pleated Dress.



Photo (13).

Photo (15) is showing Wu's Resort '17 collection as finely-tuned balance between deconstruction and control. Intricately crinkled-chiffon assembled from layered strips .this dress has a two-tone skirt with sharp accordion pleats for fluidity.

Photo (16) Classic Glen Plaid Pleated Suit Dress.

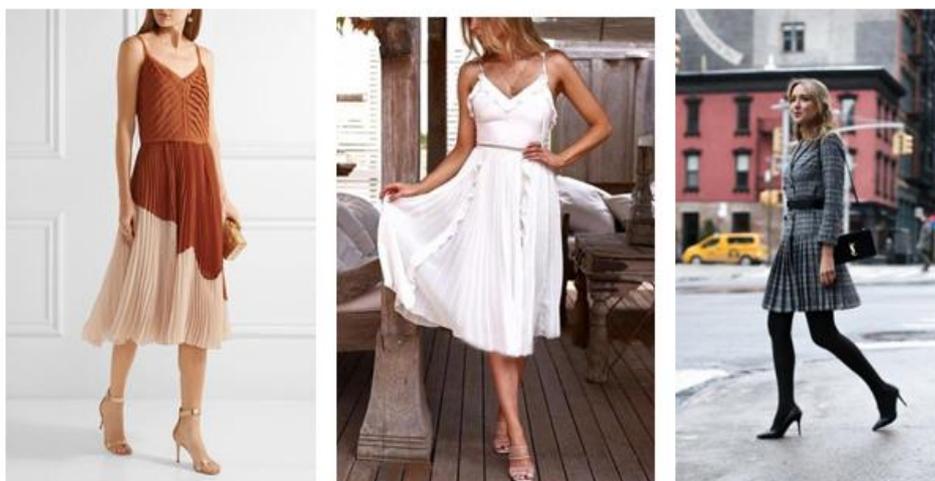


Photo (14).

Photo (15).

Photo (16).

III.3.9.Tucking

Kazlacheva (2015) [17] explained that the tucks are one of the 3D clothing elements. Tucks are not only decorative in fashion design and pattern making, but the tucks are sometimes constructive elements too as darts transformations.

The explanation categorized the tuck as four factors as role, structure, forming line and fixing contour. Every factor of those has its definitions in diagram in Photo (17).

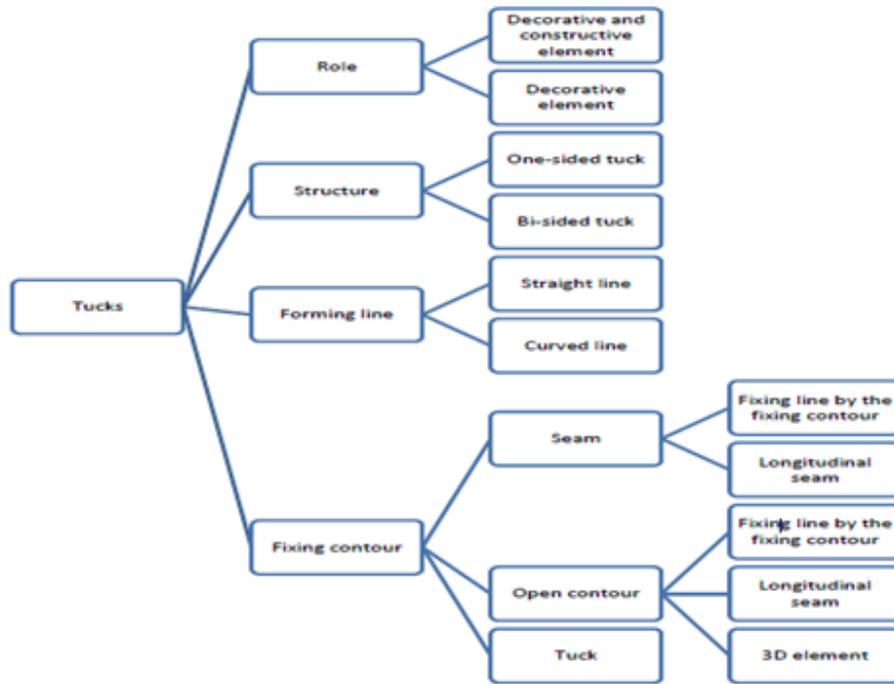


Photo (17)

Kazlacheva and others have explained [17, 18,19] with a diagram about the varieties of tuck as four categories(roles,structures,forming line and fixing contours) as shown at Photo (20).



Photo (18).



Photo (19).



Photo (20).

Kazlacheva considered the bust darts when transformed into 3D elements like frills, tucks, ruffles, and draperies. Kazlacheva continued that in ladies clothing, the dresses offer more possibilities for different assortments in the fashion design.

Photo (18) presents a model of a lady's dress with the transformation of bust darts in tucks, which are fixed in the neckline in small ruffles. Instead of darts in located at the same place, Kalacheva explained that the use of multiple tucks became essential as a fundamental part of the collection. Rather than being stitched all the way through the dart apex, Tucks is very similar to darts but have the fabric free at this point, as shown in Photo (19, 20).

III.3.10.Smocking

Essel (2015) et al [20] defined Smocks as fashionable patterns that could be constructed by different styles. It'sexpressively related to tailoring design orientation, in particular, is a coarser hand-woven.The Characteristics of smocks is a thicker plain weave structure with vertical narrow band or strip. Moreover,smocks is typically the same width throughout their length, where distinguishes it from other hand-woven fabric. On the other hand and traditionally, the handspun yarns were used with gradual diminishing in size.

Referring to the origins tracing of the fabric decorations used in early peasant clothing, Teresa (2014) [21] with her blog showed that Smocking is an Anglo-Saxon word. This method of fabric manipulation uses stitching to gather fabric, creating areas of tension and release in a sculptural effect. The raised areas on the fabric might look like tubes, squares, or pinwheels. Fashion designers may use complicated grids and patterns in the fabric to tell them where to place stitches and pull the fabric together.



Photo (21).



Photo (22).



Photo (23).



Photo (24).

Smocking requires a piece of fabric such as silks, linens, and cotton work as shown in Photo(21)as illustrated varieties of smocks patterns. Photo (22) is showing the Radiate Smocked Mini Dress, from Zimmermann's spring 2018.

Photo (23) demonstrates A-line frock that finished with stretchy smocking at the waist and sweetly puffed sleeves. Photo (24) is sowing Jessica Simpson wearing a hand made by Nui Jersey Smocked Dress, Christian Dior Platform Slide and Matthew.

III.3.11.Origami Textile Design

Wu (2003) [22] has defined that origami, "the Japanese word" consists of two words as Ori (fold) and kami (gami = paper). Although origami has been a part of Japanese culture for more than a thousand years, it started in China, the birthplace of paper. Papermaking was developed in China two thousand years ago but the Chinese did not readily share this knowledge. It eventually traveled to Korea and then Japan by the seventh century where the practice of origami was expanded to an art form.

Balkcomet al. (2008) [23] explained that the option of using Fabric was critical to the growth of the concept of combining origami and fashion. Obviously, Fabric's lack of constantly formable character can never establish superiority over the paper for simply handled construction. Dupioni silk and silk organzaboth were the

two most functional materials. Both are lightweight and rigid so they maintain the creases very well, in addition to Silk have a natural luster and perform light well.

Magrone [24] explained that Origami paper folding is typically the inspiration for the sculptural forms. The considerable endeavor was to explore and solve the relationship between the geometric and the organic human forms created by the origami paper folds. This gave something to the challenge of the exact delicacy Origami models that appeared for the first time as student projects in Bauhaus around 1930. The same models are studied today from the point of engineering by mathematicians for their geometric and mechanical properties. However, until the present time, origami is not completely understood.

Contemporis (2017) [25] defined Origami as the art of paper folding as a motivated design in different ways. Recently, fashion has moved to origami to find inspiration for creating engineering pieces that are futuristic, original, and, complicated design. The origami-inspired pieces of clothing and accessories are models ranging from the style of a box to a simple adequate use for every day, as shown in the following Photos:-



Photo (25).



Photo (26).



Photo(27).



Photo (28).

Photo (25) Designed by Azzedine Alaïa, is origami pleated-skirt dress white dress with detailed pleating on the skirt that gives it a look of folded paper.

Photo (26) Raised / Unfolded fabric dresses designed by Jule Waibel .

Photo (27) Short foil crinkles skirt designed by ISSEY MIYAKE.

Photo (28) bold dress folded to look like origami pieces, but it's made from thick paper, adding more originality to the style.

The two highly artistic fashion designers, Miyake (2012) [26] influenced the origami in the fashion concept. Issey Miyake is known for his unconventional designs and reinterpretations of traditional textile designs in various modern materials. Miyake transcends both his Japanese heritage and his designs in Western couture to redefine the concept of clothing and reinvent the activity of wearing clothes.

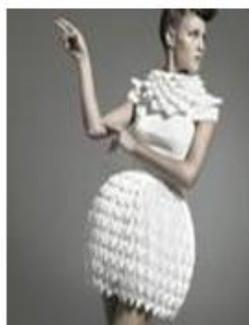


Photo (29).



Photo (30).



Photo (31).

His pleated fabric creations are especially inspiring because they show how modern clothes can be high-tech as well as fun. His innovative fabrics for pleated garments are created by uniting the advanced technology of permanently pleated polyester with the traditional form of paper lanterns as shown in Photo (29, 30).

Photos (29) an intricately folded skirt and neckline give this origami-inspired white dress an artistic and futuristic look.

Photo (30) the mathematical precision of origami art with the fashion conscious mental sharpness was the most inspiring factor among others.

With modern ideas into clothing, the brand was awarded the Design of the Year 2012, Miyake win an “Oscar” in the fashion category of Design of the Year 2012 in London Museum.

Miyake focuses on the innovative area of fashion along with scientific research, environmental knowledge and mathematical accuracy in nature.

III.3.12.Folded fabric

The automotive industry, as was recently invited to Germany by a company who manufacture textiles globally, was asked to present research and exploration into folding and examples of how it can be applied within textile design. Behind the scenes I've been working a lot on folding experiments, researching and testing different materials and production techniques. See below images, it was taken of folded fabric at the pleating factory.

III.3.13.Foldability

From interior products to home and lighting design, Foldability as a knowledge to develop connotations in cooperation with brands over a range of implementations.



Photo (32).

However, through sets of designs, packaging, exhibition design and automotive interiors, Foldability could be design innovated. In a range of materials, 3D and 2D fold design includes paper, fabric, and metals are replicated through print, weave or knitting techniques as shown in the photo (32) as some designs of Foldability.

III.3.14.Trapunto& Quilting

Trapunto originated in fourteenth-century Sicily. The term Trapunto comes from the Italian word for 'to quilt.' Trapunto, sometimes called stuffed work, is a method of quilting that uses at least two layers of cloth and padding. First, a design is outlined in stitching. Then shapes inside those stitches are stuffed with extra batting to give them more dimensions. Sometimes Trapunto also involves a stippling stitch, in which tiny random stitches are placed tightly together in areas bordering the raised sections. These little stitches make the background seem flatter and heighten the 3-D effect of the shapes stuffed with batting, filled reliefs and probably interesting to quilters: Cording, Quilting and Stuffing.

Inserting cords inside channels sewn into doubled fabric creates three dimensional surface patterns. You can use different diameters of cord for different end-results. Try making an entire surface with cording or just one decorative motif. Basically it means adding fiberfill. This can be done either directly on the main fabric surface or you can make separate stuffed appliques.



Photo (33).

Photo (34).

Photo (35).

Photo (36).

Photo (37).

Photo (33, 34) is showing different quilting methods with raised reliefs, such as Trapunto and boutsis.
Photo (35) is showing unusual or remarkable Trapunto example utilizing heavy stuffed quilting to create distinguished ribs and spine in a figure.
Photo (36) is showing Vogue Runway by the Schiaparelli Fall 2015 Couture fashion show.
Photo (37) is showing the Vogue Runway by Valentino Spring 2013 Couture fashion show now.

IV. Conclusion

In several aspects, the fabric manipulation in its simplest construction, are useful. From the point of functional, it provides ease and comfort. Aesthetically, they maintain an elongated feminine silhouette and the lines also extend body movement. On the other hand, from the point of social behavior of a society, however, for its users, the fabric manipulation are connected with traditional advantages, out of the trend, which might be contradicted with the youth conception as set aside in fashion. Fabric Manipulation on the other hand has more illustrations and colorful pictures that let you see the results made in different kinds of fabrics. It might even be faster to understand the different passages following the step-by-step illustrations. Surely there are fewer variations to the different techniques.

Fabric manipulation and ornamentation techniques make the garments into a one-of-a-kind piece of art, which includes various techniques that reshapes the surface of the material by creating 3-dimensional patterns on the garments. Incorporating the basics of fabric manipulation.

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