

Fabric Collage: The Beautiful Fabric from Scraps and Re-dress for the environmental sustainability

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Abstract: Interestingly, the smallest fabric scraps should never end up as wasted materials by burying and covering it over with soil, especially as a method of filling in or extending usable land. Finally, polluting the environment. The fabric collage, however, at different-sized fabric scraps (linen, cotton or silk...etc.) could be transferred to pleasing the senses and the mind aesthetically. However, to acquire knowledge of creativity, therefore, should be by merging elements of different fabrics to erect a montage. The process or technique of selecting, editing and fabrics piecing together as well as the separate sections of an image constructed by fabrics is to form a continuous harmony image with the environment. The technique can be done manually, by machines sewing or other related technique such as composite fabrics. Each result, therefore, will be different, unique, very beautiful and eventually environmental sustainability. The present research as an experiential approach to the studies of sustainability through the zero-waste fabrics showed that experiential education offers most effectively an educational experience connected with academic learning and practice, promote the development of an effective interdisciplinary curriculum. Furthermore, links students to job experience and opportunities for new creativity. The present research experientially approaches to sustainability studies. Showed that experience and observation learning offer educational evidence that most effectively connect academic education with practice. Furthermore, to enhances an effective interdisciplinary curriculum, connects students to job opportunities and work experience, as well as involves and empowers students. The have an instruction to collect the garbage garment of their own and reconstruct it for a new fashionable dress.

Key words: Fabric Collage, fabric scraps, environmental sustainability

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I. Introduction

The amounts of waste fabric materials are supposed to be minimal; they are more than just a physical aspect of our small pieces developed from a pattern-cutting method. They consist of primarily industrial processes that divert, extract, move, pump and get rid of billions of kilos of natural materials to produce and transfer fabric that leads to being wasted in the cutting floor by cutting and sewing the garment. Due to the manufacturing process, which is severely restricted by the type of model as well as pattern design, could lead to wasted material. New connotations in reducing waste now days involve various kinds of design-for-sustainability concepts concerning cutting-waste emerge. The new ideas are assisting to reduce the flow of garbage at the fashion design and manufacturing industry. Developing design, however, can further establish an advances process by entirely developing these new methods of understood clothing structure and construction.

Textile materials recycling appear to be growing nowadays on the global market. The lower quality of the resultant products, however, is the main prevents or hinders progress for textile materials recycling. Manufacturing garment without wasted fabrics, garments formed through the technique of zero – waste fashion design is consuming all of the required materials. In its broad sense, the zero-waste conception fashion refers to eliminate waste through all stages of garment design, production (McQuillan, 2013) [1].

Years by years, however, the environmental impacts of textiles have been increasing concern. According to the EIPRO study (EUR2014, Domask2007, Lau2015), [2,3,4] the garments represent 2 to 10 % of the EU's lifecycle environmental impacts. This consequence, just after food & drinks, transport and housing are forthcoming in the ranking which influences the environment as a product category in textiles. Depending on the type of fiber and the garment construction is made from, the problems of the environmental impact of textiles are significantly different in size. Generally speaking, they include five items such as:

- Energy consumption,
- Nutrients emissions (leading to eutrophication) and
- Eco-toxicity from washing (water heating and detergents) greenhouse gas
- (GHG) emissions, and
- Dying of textiles.

- Energy use, resource depletion and GHG emissions from processing fossil fuels into synthetic
- fibers, e.g. polyester or nylon.

Regarding the production of natural fiber crops, Important to be worthy of attention, the water consumption, poisoning from fertilizer, insecticide and substance that is toxic to plants as used to destroy unwanted vegetation. Furthermore, the applied energy and GHG emissions connected with fertilizers manufacturing and irrigation systems.

Cooper et al. (2013) [5] explained that garments as designed for increasing strength or endurance identified as the only most significant opportunity to reduce the carbon, water and waste in the UK. Correctly, if clothes have a longer serviceable life, they can be substituted less frequently. Eventually, minimizing the rejected volume and wasted in the garment industry as significantly slight manufacturing resources. By just nine months, research by WRAP (2012) [6] found that extending the average life of clothes would save £5 billion in resources used to equipping, launder and clothing disposable.

II. Conceptual Framework

II.1. Problem of the research problem

- How to utilising the entire width of the textile Ability to use zero- waste techniques in designing and producing fashionably design.
- The zero-waste design technique is good for approach to sustainability.
- To eliminating textile waste instead of going to landfill and polluted the environment.
- For how extend different approaches to zero-waste design, including draping, knitting and smart pattern making.

II.2. Research question

- To what extent could the techniques of fabric collage at different-sized fabric scraps as an input to the integration of the technique rules of merging fabrics in design serve environment?
- Should the field of fabric artworks combine with explaining the aesthetic of different designs of merging fabrics could help the environment harmony?

II.3. Importance of the research:

In the field of artistic work and garment technology, Zero-waste garment art is paramount of interest to clearly show the aesthetics and methodology of artwork by 2D and 3D. With these objectives, it could be in a sufficiently great and essential way as to be worthy of attention to emphasise on that ready-made garment artworks student at higher education does not offer educational and creative art in junior technical secondary school. Furthermore, it is not having the ability to correctly and satisfactorily self expressively. It's therefor, to originate a curriculum to promote these curricula.

II.4. Research Goals

- The research attempts to draw a shed light on the merging pieces of fabric techniques to works performed with the environment through the effect of minimizing the pollution.
- The research improves the appreciation of beauty through the fantastic artwork and dimensional types of the designs as well as harmonizes the design with the beauty of the environment.
- The research conquers the students' intelligent horizons to inside the world of fabric merging artwork and its actual application of the use of this technique.
- The research assists the students to the possibility of expressing inspiration, intellections and a natural instinctive state of mind deriving by knowing the technique of fabric collage.

II.5. Search Limits

- The work is mainly dealing with student's ready-made garment specially and, the beginners of designers in fabric artwork in general.
- Emphasis on helping the environment and designers to consider that technique.

II.6. Research hypotheses

The combination, and assemblies, between the different types of fabric merging, renovates, and expands the fabric artwork field in the college with modernistic and synchronous designs with environment.

- The research emphasizes the relationship between the wasted fabric and the construction of design contemporary trend.

- The technique of fabric collage should meet the required of the environment harmony and be able to express the individuality as well as the creativity of the designer.

II.7. Research Methodology:

Research follows the descriptive analytical method and application study. By initiating student projects for Experiential educational approaches incorporated with the above research, with aid of lingerie & evening dress and environmental study curricula, as well as combination between the course of fashion design the student direct to design new fashion and from the waste and old garments. The student's fabrics suppling based on their ecological and environmental performances. Moreover, the students connected with the industry through the internships in the global garment and fashion companies. The students carried out these samples to show how they used the wasted and garbage fabrics to be usable again.

II.8. Research terminology

II.8.1. Collage:

- A resembling without being an identical technique to the peppier collie.
- A visual expression technique of where the scraps of paper or even fabric possess different textures pasted to an image surface to improve and make more attractive areas but using a large assortment of materials having a perceptible, quality.

Previous Work

Necef et al. (2013),[7] have prepared to investigate the utilising of recycled garments as produced by considering fabric scraps. The materials used are Ne 28, 50% recycled cotton, and 50% polyester yarns were manufacturing from garment scraps of a clothing company and compared with Ne 28,50% cotton-, and 50% polyester yarns. Single jersey fabrics, therefore, with this type of threads, were knitted, garments as saw in the same production conditions. The products made from virgin materials were tested as the physical properties of yarns, fabrics and garments and compared with the scraped manufactured garments. The test results indicated that there is not a significant difference between recycled and virgin garments qualities. They concluded that recycled garments produced from fabric scraps would be used in the apparel manufacturing industry.

Recycled cotton processes from separation/shredding up to finishing investigated by Ütebay et al. (2019) [8]. This research reveals the impacts of the cotton type-based textile wastes by recycling the shredding fiber properties. They have been using the pre-consumer knitted cotton textile wastes. The collected, recycled cotton sorted according to fabric tightness (loose/single-jersey and tight/interlock) as well as the previous finishing treatments (untreated greige and dyed cotton fabrics). The properties of produced yarns were tested as a waste ratio of recycled fibers, fiber length, and it's spinnability as well. The collected wasted recycling of cotton fibers from single-jersey greige cotton fabrics showed the lower waste ratio of recycled fibers and higher yarn breaking strength values. Lower quality values contradict, have demonstrated by the recycled cotton fibers of dyed fabrics. The research concluded that better benefits for the resultant material could be accomplished by the knitted greige loosely cotton fabrics.

By using a closed-loop approach, Niinimäki et al. ((2019) [9] have reported with a particular chapter on their book, the possibilities, and limitations of the fashion design. It describes how future recycling technologies will transform a new trend in garment design. The development sustainability, however, enters the perception of the circular economy (CE) approach. The knowledge of closing the material and the technology of recycling loop defines the framework where the fashion designers have to re-innovate the future of recycling of wasted-materials. The chapter shows how this new knowledge of the recycling phase will conclude possible inclusions on fashion designers and the future ways of designing garment lifecycles. Furthermore, the section arranges a definition that enables the recycling of the design of the intentional fashion.

Leblanc (2019) [10] explained that from environmental, social and economic points of view, textiles and clothing recycling is likely helpful activity as opposite to landfilling or energy-generating. As far as cities progressively recycling old clothes, it has been invited to the next frontier for cities attending to reduce solid waste. The major benefit of textile recycling being done is the possibility to reprocess clothing and textiles. It could avoid pollution as well as energy-intensive production of different clothing. Clothing that couldn't be reprocessed might be adapted for a different purpose into products such as rags or recycled into fabric or different reprocessed material as shown in fig (1).



Fig (1) Image by Ellen Lindner the facts about recycling garments

Concerns for the society and consequently respond to it, all the highly skilled education, including, instructional design, requires the pedagogy and educational content, should permit the identification of the contemporary values. Jha and his colleague (2019) [11] reported that the responsibility of the educational process and the industry is to erect advanced thinking process concerning the requirement and possibility of outcomes and the following of waste-materials reduction as the design curriculum.

The Fashion Design program includes merging of different courses of innovation and knowledge-skills challenging to transverse the imagination-to- realisation process. The close groups of subjects such as garment construction, draping, engineering pattern development are the central part of the tangible realisation of the design conception. This type of pedagogical module is to demonstrate the interpretation and application of reflective elements of design thinking. Through a perceptible representation attached to the patternmaking is to generate sustainable process and solutions. On the other hand, it assists the creative solutions inside the classroom. This originated solution is an interaction between design, and the process of design is to minimise the waste to zero-wastage tackled by patternmaking.

The following figures are showing the redress technique.

Fig (2) Chloé jean skirt purple satin lace bohemian goddess Renaissance Denim Couture on Etsy[12]

Fig (3) is showing one of denim jean jacket that embellished with a French lace embroidered doily on the back, vintage doilies creating a pretty flounced, decorated shoulders, and delicate vintage as French doilies near the cuffs as an individual piece [13].

Fig (4) Boho ballroom jean skirt exquisite vintage Renaissance Denim Romantic hippie folk skirt long and wide skirt.



Fig (2)



Fig (3)



Fig (4)

Fletcher and her colleague (2012) [14] indicated in their book how sustainability and its capacity transferred from both the fashion system and the designers who work within it. The book is caring for transforming fashion designs across the garment's lifecycle and contains materials innovation. Furthermore, how the materials manufactured, usability, and re-usability. Besides, the book is showing how to express the ideas that are converting the fashion system at its origin into various styles indicating how to be more sustainable. Furthermore, it explained the new business models for the sake of reducing material output. On the other hand, how the designer changes from a stylist or patterning into a communicator or facilitator designer. The following figures (5,6,7,8) are showing the redress technique.



Fig (5)



Fig (6)



Fig (7)



Fig (8)

Abdelradi (2016) [15] has been using the Zero-waste techniques for innovating and manufacturing women clothes that identify Egyptian identity, defining which technology is the best through inspiring Nubian motives and applying macramé technique. The experimental work was carried out, creating 20 designs by using macramé and zero waste techniques exploring Nubian motives. Eventually, the research conducted that using zero waste with the aid of macramé techniques expressing Egyptian identity were the higher score.



Fig (9)

Fig (10)

Fig (11)

From a square piece of fabric, the designs were invented used as two triangles. The Neck hole was cut between them as a horizontal slit, whilst the macramé strips were utilized as decorative inspiration as shown in fig (9,10,11).

Wilt and his colleague (2011) [16] examined the relationship between wasted fabric from manufactured traditional fashion design and the physical and visual capability of a garment with sustainability. In fact, and practically, the process of designing garments without wasted fabric is complicated. Typically, the strategies of designing are to combine the wasted material to reuse it again into the garment. Strategies that undertaking beyond classic designs indeed exists which could make the clothing more visually be able to withstand wear. In a broad scope sense, the research supports the models for sustainability.

Fletcher (2012) [17] investigated how sustainability has the potential to convert both the fashion system and the designers who work within it. The first part of the book is dealing with transforming fashion products as crossways of the garment's lifecycle and contains materials invention, manufacture, classification /distribution, use, and re-use. The second part is concerning with ideas that are converting the fashion system into a more sustainable object, bearing in mind the new business models that minimise materials output. The third section is dealing with changing the principals of fashion designers accomplished with examples to show the designer how the alterations from a stylist or formers of models into a communicator, activist or facilitator.

III. Types of Zero – Waste Fashion Design

III.1. Zero -Waste Fashion Terminated Textiles:

American today discards an average of around 70 pounds of textiles per year, the most of it terminated in landfills. Designers and entrepreneurs should rethink on wasted textiles by changing how they could think about waste and what could be done. However, the Zero- Waste Fashion eliminates waste during a garment's initial production. Two general approaches fall under this category [18].

III.2. Zero – Waste Fashion Design Pre- Consumer:

There are commonly two proposals of action or policy designed to achieve zero-waste fashion. First, originating different pattern making 100% usage of raw material, secondly, innovate garments from the small remaining quantity of materials. The only approach that is logically and felt genuinely honored for sustainability philosophy is emerging of the two. In this process, the designer innovates a garment working within the space of fabric width through the pattern cutting process. As far as the pattern cutting process is a primary design step, it immediately influences the design of the end product of the garment.

III.3. Zero - Waste Fashion Manufacture Pre- Consumer:

Lau (2015) [19] reported that the system of circularity is a clean-technology with new materials company, concentrated on the enhancing of innovative recycling and regenerating the technologies. From Agriculture to Textiles, and the recycling of waste-to-fibre platforms, yarn technology revolution, exhibit break-through solutions for the utmost management of textile/apparel and agricultural waste flow efficiency.



Fig (12)

Fig (12) is demonstrating the designs approach utilises the remnants of the fashion cycle to produce new garments from second hand or surplus goods.

The Fashion Pre- Consumer Zero - Waste Manufacture is known as post-industrial waste materials. However, the material remaining after the rest has been used or consumed from the garment productions. The material can be consumed by cutting leftovers, roll ends, overestimated production, faulty and rejected fabrics.

III.4. Zero – Waste Fashion Post – Consumer:

Rosse (2013) [20] reported that for the last ten years, clothing had been the rapid growth in the UK. Furthermore, as spring-clean, Briton is likely to through away 680 M pieces of clothing this year with a staggering 235 M of garments expecting to end up in the landfill. The consumer will dispose of an average 37% going straight in the dustbin.

From the point of student education, it's an example of manipulating flowers from denim fabrics utilising old fabrics to [21].

III.5. Designing Endurance

Probably, zero-waste fashion design has only emerged in the latest years as took the place of the newest movement of 'sustainable fashion'. Burnham's (1973) [22] research; demonstrated the designed garments had been made with little or zero waste from old fabrics.

Rissanen (2008) [23] in his research on a contemporary design context and, in the works of Claire McCardell, Zandra Rhodes and Yeohlee Teng, concentrated on historical garments. Such investigation as an approach to design as has been evident for a very long period. The Endurance shirt innovated by him exhibited in fashioning show in 2009 and 2010 the marker demonstrates a cut without wasted fabric when two shirts are cut at the same time as shown Figure (1,2). On the other hand, the shirt is designed and made to allow later alteration and repair.



Fig (13)

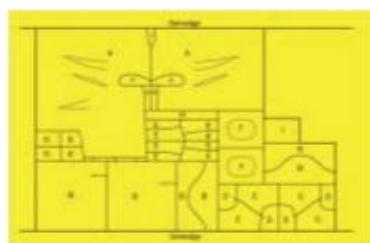


Fig (14)



Fig (15)

Fig (13,4) Endurance shirt by Timo Rissanen, (2009). Silver salt Photography.

Fig (15) Fisherman's coat from Awaji Island from the collection of the Hokudan Town Historical and Ethnographic Museum, Japan. Photography: Don Cole at Fowler Museum at UCLA.

The conception of making practical and effective use of the entire textile width is not a new phenomenon. It has been used in the making of Japanese kimonos and Indian saris from a long time as not to waste valuable textiles. However, this phenomenon became less communal after the industrialisation of fashion and the emergence of mass-produced of fashion designs.

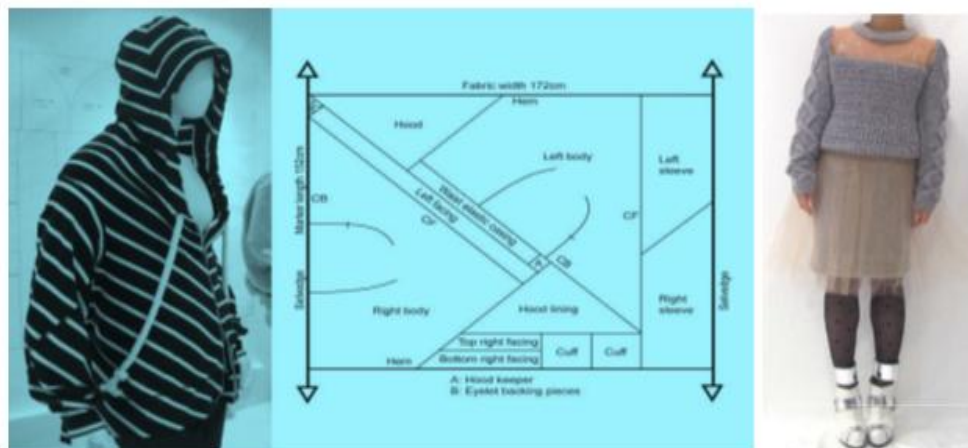


Fig (16)

Fig (17)

Fig (16) Timo Rissanen worked with the dimensions of the textile to create a zero-waste pattern [23].
Fig (17) Johanna Ho cut textile waste into thin strips and then turned the textile strips into yarns. She then knitted these textile waste yarns to create this sweater.



Fig (18)



Fig (19)



Fig (20)

The redress Design Award Martin (2018) [24] was a finalist and semi-finalist of the 2017 cycle. She has established her upcycling label, CJ MARTIN, which consolidates subtle craftsmanship with its designed to be useful and practical rather than attractive aesthetic as shown in fig (18,19,20).

Martin aims to shed a shining light on the dangerous impacts of climate change over her Redress Design Award subordination.

Floyd (2019) [25] has carried out a systematic zero-waste pattern preparing within her brand. She advanced and elaborated a technique which made up by making every piece of the pattern of the garments a rectangle shape with various dimensions. All rectangular shapes finally fit in a grid-like fashion across the total width of the

fabric, with no produced waste. Eventually, digitally cut and gather together to become garments with geometric lines and sharp. By using sustainable design strategies, Floyd used fresh pieces with encountering the limitations that attach to sustainable fashion not like a disadvantage but as an inspiration.

Fig (21) Redress Design Award 2019 zero-waste redress.

Fig (22) Hong Kong-based NGO working to reduce textile waste in the fashion industry [26].

Fig (23) Some examples of Craft kit out of small pieces of patchwork art.



Fig (21)



Fig (22)



Fig (23)

III.6. Zero Waste Fashion Techniques:

Zero-waste fashion design indicates the methods that especially aim to completely remove fabric waste from garment production. In contrast to conventional pattern making typically follows a predetermined design, the importance of this approach is the utilizing a particular fashion design processes and pattern making. Garments tailored through zero-waste fashion design technique are by consuming all the fabric required for that garment with zero fabric materials waste. In its larger scale, where wasted material is eliminated through all process of garment design, the concept of zero-waste fabric is referring to the fashion system production chain [23].

The Eco Chic Design Award (2013) [27] According to the regulation of zero waste materials, reported that there are different approaches to reconstruct a zero-waste garment.

- Decide what style of garment to be made
- Which zero-waste technique to be used,
- Using draping, knitting, or
- Using a zero-waste pattern.

If somebody made a zero-waste pattern, you would require to draw a plan of the usage of the entire piece of fabrics. By organising the pieces like a jigsaw puzzle, shape the pattern by draping otherwise directly design the entire piece of textile on the body by draping.

The textile width is consistently a crucial discernment in the zero-waste dress design. It is challenging to design zero-waste without knowing the width of the fabric precisely. The fabrics width is the area to create a zero-waste fashion design.



Fig (24)

Fig (25)

Fig (26)

Fig (27)

Fig (24) is showing HellenVan Rees sourced leftover yarns from factories and then wove the yarns in the shape of the garment. She fused everything together into the shape of the garment so in the final garment, there were no seams, cut-offs or leftovers.

Fig (25) is showing Angus Tsui Yat Sing, The Eco Chic People's Award Hong Kong 2012 Winner, created this zero-waste garment by pleating rectangular textile waste scraps.

Fig (26) is showing Winsome Lok worked with this jigsaw puzzle-like pattern to create her zero-waste outfit.

Fig (27) is showing Aman Cheung, The Eco-Chic Design Award Hong Kong 2011 Finalist, created this zero-waste sheer skirt with leftover stock fabric.

As noted by McQuillan (2011) [1] there are several ways to approach the aim of zero-waste fashion design through:Planned Chaos, GeoCut, Cut and Drape and Reusing of scraps of cloth and yarns. (Ciabailey,2014) [28].

III.7. The controlled chaos,

Miinimaki, (2012) [29] stated that the conventional garment blocks are integrated so that they originate the body of the garment with no separate pieces. The technique, therefore, demands to understand the rules of conventional pattern cutting welling to break them. Eventually, remove the fabric waste completely that could be occurred in garment production. However, there are two ways of pattern cutting, Jigsaw cutting and Subtraction cutting.as in fig (26).

A jigsaw cutting:

This method created by designer Lui(2007)[30] that he could eliminate waste by cutting from a single piece of fabric in order to create all of the small component (pockets- collar- trims....) and fit all together like a puzzle so that every single scrape is utilized this technique is an eco-efficient that has completely over looked in the industry, Fig (28,29,30).



Fig (28)



Fig (29)



Fig (30)

Through Quillen (2010) [31] investigation, practice-based design research by the methods of terminating textile waste through employing zero-waste pattern cutting to make more substantial and more extensive the outcomes possible. Through the composite garment, weaving and hypothesizes as to be implied for the broad side of the industry and society by Utilizing the interpretation phenomenological approach. He used a recognized strategy in the industry circumstances and be interrogated with new emergent strategies to confront that emerge. The findings that emerged from the process design practice, discussions and reflections, inform an experimental design as utilizing Pattern cutting as Flattening, Donatelli, J. (2012) [32]. The process of flattening the 3D form is all pattern cutting for cut and sew garments. He draws a plane to transform every cutting step, by flattens 3D form into an 2D textile process as shown in fig (31) as a Proposed design model demonstrates 3D – 2D – 2D – 2D – 3D relationship.

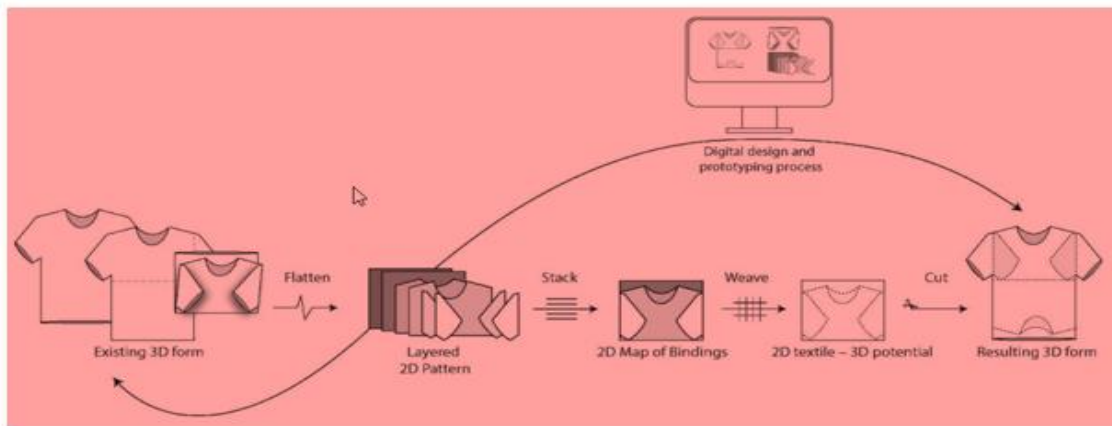


Fig (31) model demonstrates a Proposed design 3D – 2D – 2D – 2D – 3D.

IV. Experimental Work

The conception of the research is to make available for use and supply guidance for product development. To teach the students how they might best influence consumer behavior and develop an action of garment redesign process easier to extend the use of garments.

Different old and garbage materials have been used such as Organza, cotton, linen...etc., and by using the different techniques previously explained, the students work out, for the following designs.

Nine restyled and reconstructed garment have been chosen as shown in fig (32)



Fig (32)

V. Discussion and Conclusion

The best chance for the clothing lifecycle is to maximise longevity during the product design stage. The changes in design performances could have a considerable impact on how long single items sustain wearable. The essential reason for any consumers to get rid of clothing is that it no longer appears good. However, the designers with this issue could be influenced directly — that sort of orientation cause to grow and become more advanced collaboratively by WRAP, N TU. A range of fashion designer expertise from within the clothing industry has explored four fundamental fields. These fields change the design performance, where could assist ensure items look good for a longer time, and so expanded the garments usable life. These are: Size and fit,

Fabric quality where the higher quality of fabrics is more preferable to resist wear and tear over a long period, Colors classic' as unlimited styles and colors, Care adequate advice on care and on responsibilities for re-use and recycling [6].

Today, there are many different approaches to zero-waste design, including draping, knitting and smart pattern making. I use a variety of waste reducing techniques to create sculptural, elegant and desirable sustainable fashion garments.

Todor et al. (2019) [33] reported that Since the last decades, the utilization of different kinds and sorts of textiles composite materials in various applications had enlarged steadily, succeeded in forcing a way and conquering into the new markets, continuously. Textile composites are already confirmed for weight-saving and

high tensile strength materials. The present challenge, therefore, is to transfer these materials to be cost-effective by minimizing the cost of various types of reinforcements such as fibers, yarns or fabrics. The determined attempt to manufacture beneficial, composite textiles, economically, have conducted in multiple innovative production techniques. These techniques currently have been used in the field of the manufacture of the composite fabrics. Applications vary remarkably, however, in size and complexity, mechanical load and surface quality, controlling the temperature functioning, appropriate volumes production and unique added value.

VI. Recommendation

There is increasing attention for the sake of not only the social environment but also the environmental effectiveness of textiles. Improving their social and ecological performances by recycling of waste of textile products will become more environmentally friendlier. Promoting the reuse/recycling of old clothes and wasted textiles to produce new clothes, rather than using raw materials, support or actively encourage remanufacturing and fashion rehabilitate. Constant and rapid changes in fashion could be a circumstance that makes it possible for rapid uptake of sustainable garments. On the other hand, it could be an obstacle since such trends could replace by something else. In other fields like interior or underwear, innovation cycles are much not quick or fast as expected.

Using best practices in technological innovation will contribute to enhancing the environmental footprint of processes.

- Launch and further promote collaborative initiatives to improve the environmental performance of textiles across the supply chain (sustainable design, fibers and fabrics, maximise reuse/recycling/end-of-life-management, sustainable cleaning).
- Start awareness raising campaigns and sharing of experiences in textile processing regions.
- Manufacturers (clothing, white goods, detergents, etc.), retailers, consumer groups, etc. should carry out campaigns and inform consumers on issues of common interest related to sustainable fashion consumption and work with designers, celebrities and NGOs to help spread the messages on how to be more environmentally friendly, e.g. reducing the temperatures of the wash cycle, etc.

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