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An Inclusive design approach for visually challenged

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ABSTRACT

Fashion designers and brands have been developing garments taking specific consumers, including people with some sort of disability. The main purpose of this project is to analyse the challenges faced by visually challenged young women and develop inclusive design approach to non-discriminate them from experiencing fashion through the research of elements, aspects and concepts that can be useful for this cause. During research, informative papers, articles, studies were found to address inclusive design approach as a useful tool for the development of inclusive products for the physically challenged.

Keywords— *Inclusive, Visual Impairment, Design, Fashion*

1. INTRODUCTION

The main aim of this project to utilize inclusive fashion in order to non-discriminate visually challenged from experiencing fashion by providing equivalent experiences and to extend the solution to everyone without any exclusivity also paving way for the brands to increase consumer base. The intended approach is one on one interview with visually impaired people and analysing their experience and feel towards clothing. One of the vital parts is to include Braille on the fabric and other fabric manipulation to make the visually impaired to feel a variety of textures and thereby giving them a feel-good experience while wearing it. The choice of the fabric to be made from the preferences observed while interview. In order to get a detailed and professional insight on Visual impairments we have approached Ophthalmologist and have gained the knowledge in order to incorporate while designing the garments. Using inclusivity in designing inspiration board and design explorations are made.

2. LITERATURE REVIEW

2.1. Inclusive Design

Inclusive design involves designing for a specific individual or cases and making it available for everybody so that it could be used by everyone and satisfy the needs without making it exclusive (Rachael, 2017). When a product is built in such a way that it is beneficial to all, including the disabled community, it is said to be inclusive (Persson H, 2015).

2.2. Why Inclusive Design?

The main factor here is empathy. People with special needs might feel separated by their weakness and so they will end up losing their confidence. Inclusive designs make them feel like they belong rather than feel excluded (Brown, R.L 2011). Inclusive design also makes it possible for many people to access and use. Inclusivity is built in the inclusive garment from the start of the design process (Coleman R 2015).

2.3. Principles Of Inclusive Design

- Look for points of exclusion, identify situational problems,
- Acknowledge personal prejudices.
- Provide a variety of ways to participate.
- Provide comparable interactions.
- Extend the solution to all (Bruna, 2019), regardless of race or gender.

2.4. Blindness And Visual Impairment

People with severe visual impairments and absolutely no sense of sight. A decreased ability to see to a degree that causes problems not fixable by usual means. One potential cause that lowers quality of life is the impact of vision loss on activity limitations (Brown,

2011). Basic habits of everyday life, such as bathing and grooming, as well as instrumental duties, such as home maintenance and running chores, must be renegotiated due to visual impairments. Colour blindness also comes under the visual impairments which limits the people to experience the variants in colour and fashion. Colour-blind people, contrary to popular belief, can see colour (Barbara L, 2004). However, they have trouble distinguishing between certain colours, especially green and red, as well as orange and grey. Rather, a brown range encompasses all of those colours. A retinal deficiency cause colour blindness. The retina is the tissue in the back of the eye that processes image and distinguishes between colours. They face various hindrance in their daily routine which includes putting on clothes (Sheila K, 2002). They have difficulties in finding the front side of the fabric and using closure zips and buttons.

2.5. Enhanced Senses

Research says that people who are blind have more hearing senses. They can easily track moving object and can also hear music more efficiently than others. Scientists have been wondering for decades what changes in the brain could be causing these improved auditory abilities (Hernisa, 2017). Research looked at the brain's response to small changes in auditory frequency rather than simply looking at which areas of the brain were most involved when listening. Blind people had narrower neural "tuning" in the auditory cortex than sighted people in discerning minor variations in sound level said a journal in neuroscience. The auditory cortex becomes plastic as a result of blindness. This is significant because in blind and sighted people, this region of the brain receives very similar auditory information. However, in blind people, more knowledge must be derived from sound, and as a result, this area appears to gain enhanced capacities

3. MAIN PART

3.1 Study on visually impaired

The below given are the key take away points while studying the visually challenged individuals and having a one-on-one talk with them.

- Necessity of guidance
- Difficulty in identifying matching pairs
- Prefers casual and loose fitted clothing
- Unable to find variety of textures to feel the designs
- They feel grateful while making sure of their needs
- Also they feel as weak and inferior
- Unwilling to depend on others to put on clothes
- Loss of confidence

3.2 Insights from Ophthalmologist

There are various levels on visual impairments such as mild, moderate, severe and profound. An individual who is completely blind would be unable to see anything. An individual with low vision, on the other hand, might be able to see not only light, but also colours and shapes. They can, however, have difficulty reading street signs, identifying faces, or matching colours. Vision can be hazy or blurry if they have poor vision. Blind people may be able to access knowledge that would normally be received by vision using their remaining natural senses. Not only can they discover that it's a property of objects or scenes that's different from other sensory properties they've seen, but they can also learn about colour variations.

3.3. Support elements in the design development

Fashion collections are made up of silhouettes, patterns, textures, and woven and knitted fabrics that are all related to the designer's aesthetics and brand DNA. They are made up of a series of events determined by a variety of factors. Each good collection necessitates a significant amount of research, review, and planning

- Price, the most important part in buying concern. Price worthy quality
- Clothing must fit properly, be durable, and be suitable for the customer's body and psychological expectations, otherwise it would be impossible to sell.
- The comfort of the fabric and the properties of the fabrics (such as fragrance or anti-creasing properties), as well as the transparency of environmentally sustainable processing and waste disposal practises, all affect comfort and psychological comfort details on the merchandise;
- Relatable, since clothing must be suitable for consumers' lifestyles, work, and recreational activities; Brands meet customer desires and preferences by promoting the product's distinctive qualities.
- Ease and service of the brand refers to shopping as a pleasing and satisfying experience for the customer.

3.4 Thoughtful Creativity

The aim is to develop a product with a typical strategy while describing a product with specific characteristics that contribute to the betterment, in which the fashion designer's imagination serves to attend to and create the desired peace in a product that the customer embraces and relates to.

3.5 Fabric Texture

It would be fantastic to create garments with a variety of textures and, as a result, various sensations. The designer manipulates the surface of a textile material to create various textures, manipulation methods, and finishing that offer the garment surface various effects.

3.6 Aesthetics

To strengthen the customer experience in the products, there has been a use of trims and clothing personalization with visual elements (e.g., printed lining, carved button; placket; tinted ribbon; binding in the interior with the brand logo) (Liliana, 2020). That

being said, because of the rise in prices on fashion products relative to the person, these visual aspects may be a restriction for consumers.

3.7 Shapes

The silhouette, lines, curves etc. play an important role to gain insight related to sensory perceptions of the garment. Therefore, by implementing variety of fashion elements and creativity in shaping the garment to get the desired design.

3.8 Inspiration Board

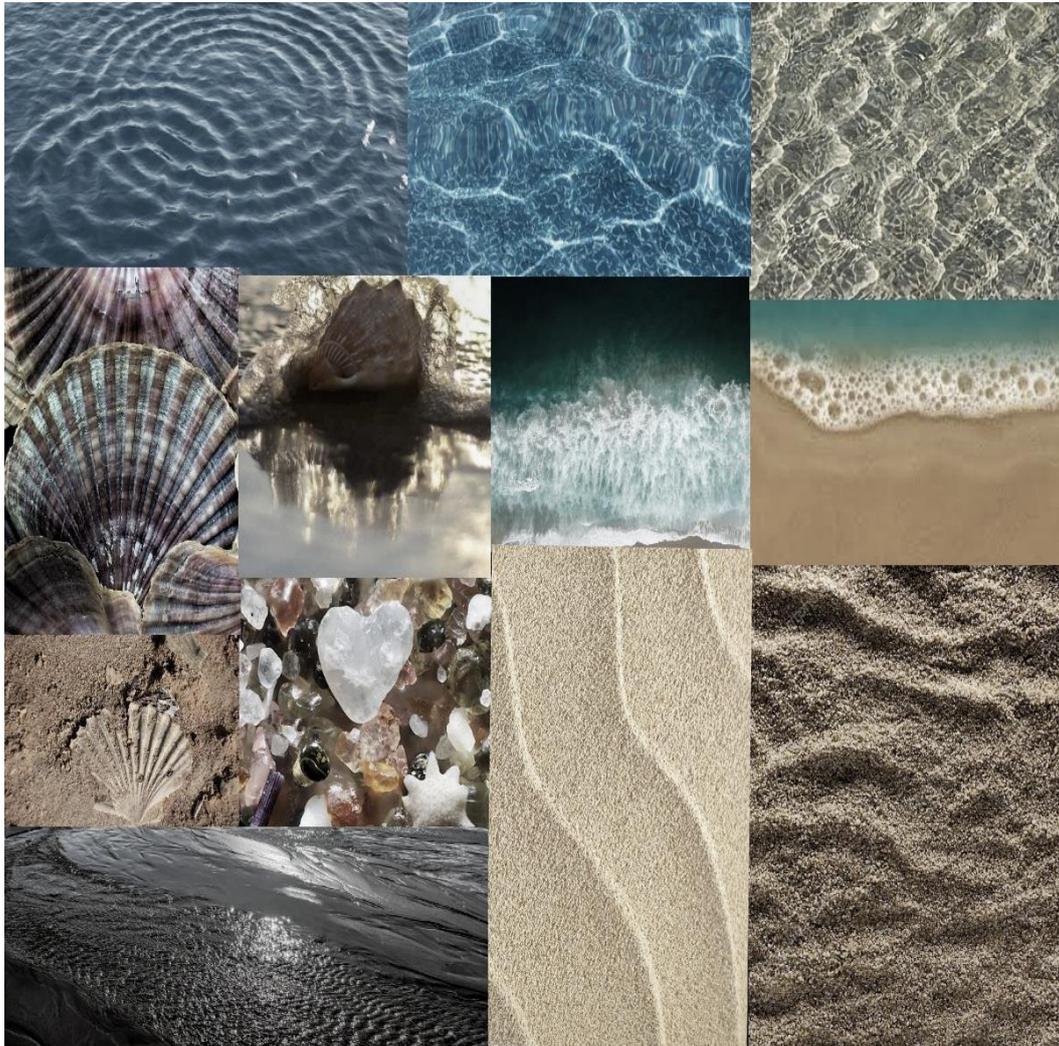


Fig 3.8.1

3.9 Design Exploration

From the inspiration, designs have been developed intended to implement various fabric manipulation techniques, Braille on the fabric and texture variations.



Fig 3.9.1

Fig 3.9.2

Fig 3.9.3



3.10 TECH PACK

STYLE: CASUAL WEAR	NAME: ASYMMETRICAL COAT WITH PALAZZO	SAMPLE SIZE: SMALL
COLOUR: YELLOW FABRIC: LINEN		
<p>FABRIC CONSUMPTION: 5m Top: 2.5 m Bottom: 2.5m COSTING Rs.180 per metre Total: Rs.900/-</p>		

Table 3.10.1

STYLE: CASUAL WEAR	NAME: PLEATED PUFF SLEEVED TOP AND TUCKED SHORTS	SAMPLE SIZE: SMALL
COLOUR: BEIGE AND OLIVE GREEN FABRIC: COTTON		

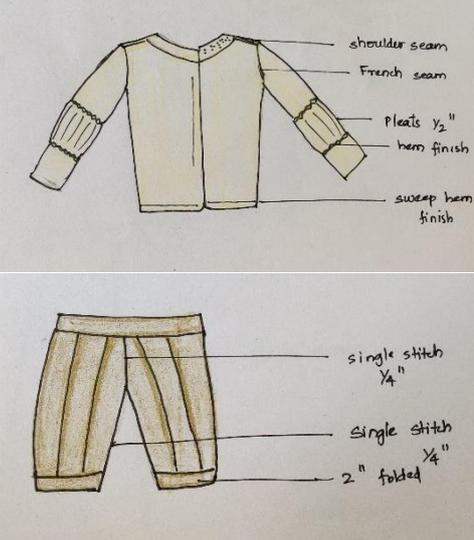
<p>FABRIC CONSUMPTION: 3.5m Top: 2.5 m Bottom: 1.5m COSTING Rs.120 per metre Total: Rs.420/-</p>	
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Table 3.10.2

3.11 Final Designs



Fig 3.11.1



Fig 3.11.2

3.12 Garments Developed

Exploring various designs and ideation garments have been constructed. Intended application of fabric manipulation such as tucks, pleats and Braille has been implemented

DESIGN DETAILS:

- Braille on the Neck and Collar area
- Fabric manipulation - pleats and tucks in the lower torso and sleeves
- Multiple closure (velcro, buttons, belt)
- Linen and cotton for delicacy.



Fig 3.12.1



Fig 3.12.2

4. CONCLUSION

Inclusive design is to create an emotional connection not only with the visually impaired but also with all consumers. Garment may include a variety of important multisensory elements such as fabric textures and finishes, so a visually impaired person can buy clothes based on the probability of touch, sound, and smelling experiences. Therefore, smells, sounds, and other stimuli (e.g. odour, music, lighting, and staff attitude) coming from the bricks - and - mortar retail space can affect the purchase. With the vision for Inclusive design in the garments for visually challenged has been constructed to break the barriers faced by visually challenged in experiencing clothing and fashion.

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