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BLUE HORIZONS: REIMAGINING FASHION FROM NAUTICAL PERSPECTIVE

Pragati Verma[1], Annie Ali[2], Deepshikha Sahu[3]
[1]*Student, Amity School of Fashion Technology, Amity University Chhattisgarh, Raipur, India*
[2]*Assistant Professor, Amity School of Fashion Technology, Amity University Chhattisgarh, Raipur, India*
[3]*Assistant Professor, Amity School of Fashion Technology, Amity University Chhattisgarh, Raipur, India*

ABSTRACT
This study creates a mini collection of teen clothing with an ocean theme by combining creativity, sustainability, and digital innovation. Oceanic beauty is transformed into expressive, practical, and environmentally conscious fashion by drawing inspiration from marine elements like corals, shells, seaweed, and waves. The research uses digital textile printing, computer-aided design (CAD), and nature-inspired aesthetics in conjunction with the Double Diamond design framework (Discover, Define, Develop, Deliver) to increase production sustainability, decrease waste, and improve precision. Because of their comfort, breathability, and environmental advantages, eco-friendly materials like linen, bamboo, and organic cotton were selected. Seaweed biomaterials were not physically utilized, but their conceptual impact – drawn from Smelik's (2018) new materialism theory – highlights the interdependence of technology, nature, and humans. The final collection, which includes the Coral Dream Dress, Sea Breeze Set, and Marine Explorer Hoodie, exemplifies how digital innovation and sustainable design can produce meaningful, responsible, and fashionable teen fashion. It also reflects adaptability, individuality, and ecological awareness.

KEYWORDS - *Sustainable fashion design, teen wear, ocean-inspired collections, digital textile printing, computer-aided design (CAD), double diamond design framework, eco-friendly materials, organic cotton, bamboo fabric, linen, marine aesthetics, new materialism theory, seaweed biomaterials, environmental consciousness, digital innovation, functional fashion, creative sustainability, and ethical design.*

1.INTRODUCTION

My collection is inspired by the vibrant and captivating world of the ocean below. It transforms these into imaginative and entertaining children's clothing designs while appreciating the abundance and beauty of marine life. With its glistening waves, underwater world, shimmering fish, dancing corals, and gentle sea turtles, the ocean is a magical place full of colour, life, and endless inspiration. My Kids wear Collection celebrates imagination, adventure, and the beauty of nature while capturing the essence of the sea. Our designs are lively, inventive, and playful, much like the ocean. Soft ocean colours like coral pink, sandy beige, and deep navy blue bring these elements to life. Fish, seashells, mermaids, dolphins, and starfish are among the whimsical prints and patterns found on clothing. For active kids, soft, breathable, and environmentally friendly materials offer comfort and flexibility. To keep kids cool and content, I also use lightweight, breathable materials like organic cotton and linen in my designs. Every piece, from dresses with wave patterns to accessories shaped like shells and prints of sea creatures, conveys a tale of wonder, adventure, and the delight of learning about the world beneath the sea.

2. LITERATURE REVIEW

(1) The research "Sea Inspiration" Collection – Original Dress-Form Designs Based on the Sea Landscape Employing Shells examines the ways in which the beauty of the sea and components of it—more specifically, shells—can be used to inspire innovative fashion design. It emphasizes mannequin-based dress-form design as a type of plastic art that combines imagination, texture, and natural beauty. Shells, with all their variations of colours and forms, are a dominant source for inspiration in dynamic and creative garment design. The research highlights the relationship between humans and nature as it converts oceanic aspects into wearable art that displays equilibrium, harmony, and rhythm. This way, the designers hope to restore respect for the natural world while enhancing creativity and sustainability in fashion. The study attempts to identify how the visual and structural aspects of the marine world can be reinterpreted artistically in modern fashion collections, enhancing design education and contemporary aesthetics.

(2) "Designing" can be used to used to explain the aesthetic arrangement of line, form, colour, shape, and texture in an ornamented design conveyed in clothing and textiles. Designs can be either ornamental or structural. Conventional printing methods—block, roller, and flatbed screen printing—are usually costly and time-consuming since they depend on etched tools. On the contrary, digital printing gives a more rapid and cheaper method with the ability of manufacturers to produce a variety of designs that respond rapidly to fashion trends. The study in this case is intended to develop theme-based children's clothing from water motifs, enhancing children's dress design innovation and creativity. The use of Computer-Aided Design (CAD) simplifies the ability of designers to convert ideas into graphical representations of fabric, experiment with different colours and textures, and enhance efficiency. CAD

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technology not only improves design quality and flexibility but also reduces the concept time in production and is hence ideal for creating dynamic, ocean-themed children's collections.
(3) In keeping with posthumanism, which decentralizes the human and stresses the relationships between humans, non-humans, and technology, this study uses Anneke Smelik's (2018) theory of new materialism to interpret the spread of seaweed biomaterials in fashion. Seaweed connects the human body and water, promoting ecological and non-binary balance and serving as An emblem of health and sustainability. Seaweed is considered a living, intelligent material, in contrast to traditional fashion materials associated with overproduction. Seaweed clothing revitalizes the body and inspires new aesthetics and sustainable, multispecies creativity in fashion design, demonstrating new partnerships between biology, technology, and design.
(4) Dinda's study, "Transformation of the Seven Seas Characters from The Little Mermaid in Carnival Costume Design: A Reimagining of Seven Seas Characters from Eric Geron's The Little Mermaid: Guide to Merfolk as carnival costumes is examined by Julia Maudy Suryalina et al. Each mermaid's visual and cultural traits are transformed into imaginative fashion through the use of S.P. Gustami's three-stage creative method: exploration, design, and realization. Each design incorporates elements like coral forms, marine life, and native motifs to capture the distinct marine environment. Colour scheme and cultural meaning of the sea in question. According to the study, substantial costuming design that is both aesthetically pleasing and narratively responsive can be impacted by fantasy literature. Each character's identity and story are successfully conveyed by the following seven costume designs.
(5) It emphasizes the value of an interdisciplinary strategy and the responsibility of designers to include sustainability and functionality right from the start of the design process. The research employed a qualitative approach to examine market data and literature using keywords like "children's clothing" and "functional textiles." The results highlight the need for children's functional fashion to strike a balance between style and functionality, utilizing materials and tools that promote wellbeing and flexibility. In order to create clothing that promotes children's growth, activity, and protection, designers must apply collaborative, science-based insights and comprehend user needs. The framework promotes innovation through iterative thinking by utilizing the Double Diamond design model, which represents the words "discover, define, develop, and deliver". In order to satisfy contemporary consumer and environmental demands, the study concludes that functional children's fashion should balance sustainability, safety, and creativity.

3. METHODOLOGY

Teenage wear is a category that demands both functional adaptability and aesthetic innovation, but there is still a significant void in the use of sustainability, creativity, and technological integration in fashion design. In order to emphasize the balance between nature and artistic expression, earlier research has looked into marine-inspired aesthetics, such as collections with shells and ocean themes. Additionally, studies have shown how digital design tools, especially Computer-Aided Design (CAD), improve fashion development's inventiveness, productivity, and experimentation. Additionally, the advent of biomaterials such as Seaweed's emphasis on ecological issues has transformed sustainable fashion consciousness and the interdependence of technology, nature, and people. Making use of organized design frameworks like the Double Diamond model, studies on children's apparel have also emphasized the significance of sustainability, comfort, and functionality. As teenagers are in a life stage that transitions from childhood to adulthood, little research has been done on how these creative, technological, and sustainable approaches can be combined to meet their unique psychological, physical, and stylistic needs. In order to produce practical, expressive, and ecologically conscious teen clothing, this study intends to create an interdisciplinary design methodology that combines sustainability, digital innovation, and themes inspired by nature.

Task	Month 1	Month 2	Month 3	Month 4	Month 5
Literature Review					
Sample Preparation					
Garment Construction					
Consumer/ Wearer Trials					
Data Analysis					
Report Writing					

Figure 1 Structural framework of the study

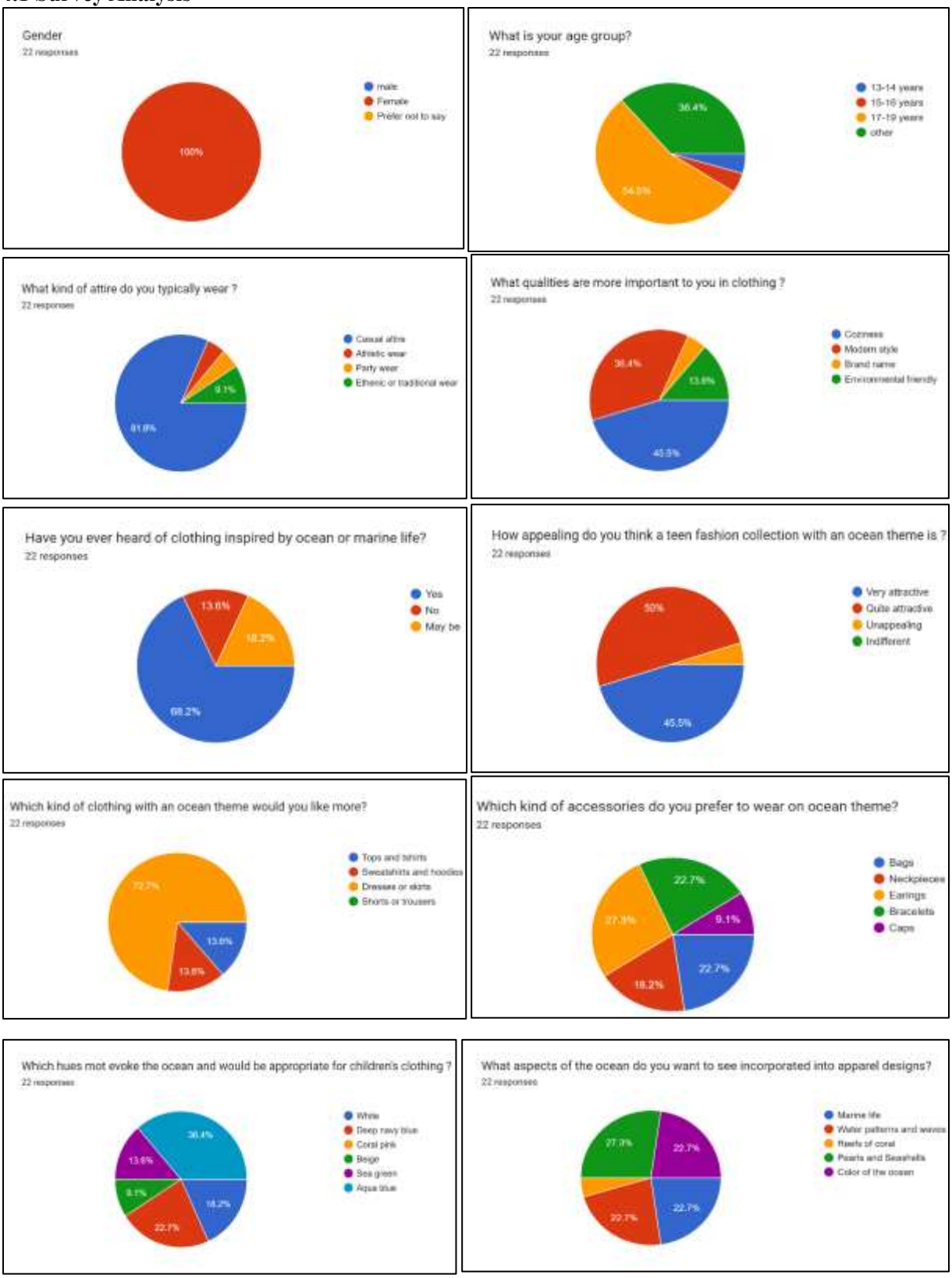
4. RESULT AND DISCUSSION

The results of this study were an ocean-inspired, sustainable mini collection of teen wear that was developed within the Double Diamond framework: Discover, Define, Develop, and Deliver. These integrated nature, technology, and sustainability for functional and expressive garments. The underwater elements of corals, shells, seaweed, and waves inspired these designs, together with oceanic colors representative of vitality and tranquility, coral pink, aqua blue, and deep navy. The collection kept in mind the teen's preference for comfort, flexibility, and individuality. Organic cotton blended with bamboo and linen has been used, combined with CAD and digital textile printing to enhance precision and reduce waste. Three key looks balance creative aesthetics and practicality: The Coral Dream Dress, Sea Breeze Set, and Marine Explorer Hoodie. While no biomaterial of seaweed is used in this collection physically, its conceptual influence emphasizes eco-conscious values pointed out by Smelik's (2018) new materialism theory in the interconnectedness of humans, nature, and technology. Based on this, the ocean theme symbolically represents growth and change,

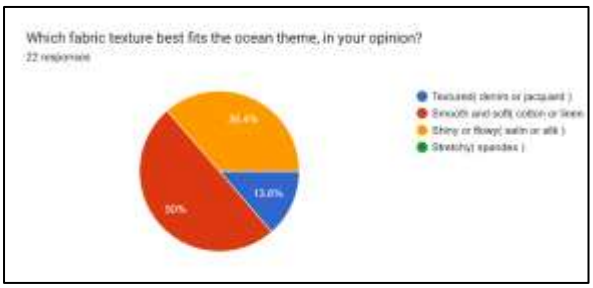
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or transition from childhood to adulthood, but at the same time, it provokes ecological awareness. Overall, this research demonstrates that digital innovation and sustainable design principles could merge into the creation of fashion that is stylish and meaningful yet ecologically responsible. It shows the feasibility and potential impact of translating marine-inspired aesthetics beyond haute couture into practical and contemporary teen wear.

4.1 Survey Analysis



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4.2 Design Development



Figure 2 Flat Sketch 1

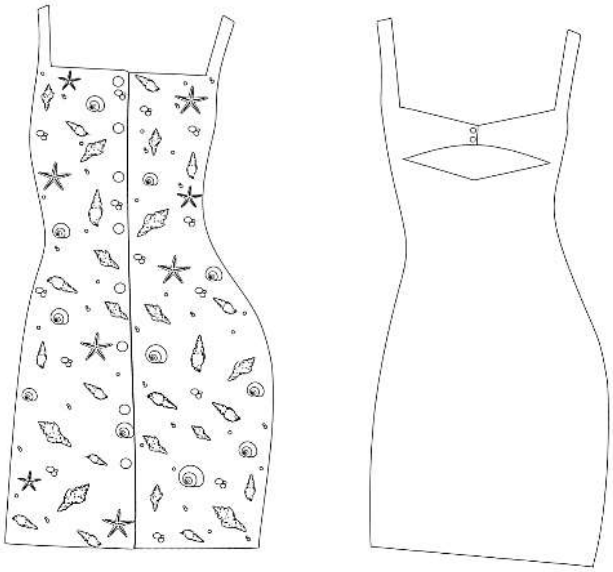


Figure 3 Flat Sketch 2

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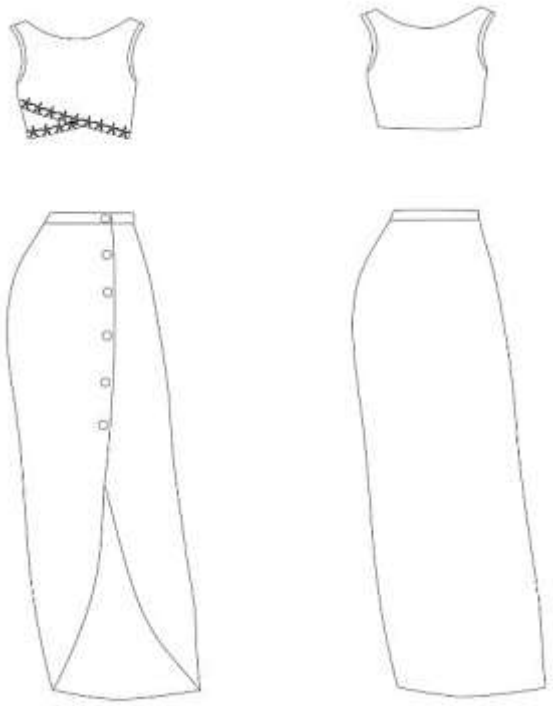


Figure 4 Flat Sketch 3

5. CONCLUSION

This study effectively combined creativity, technology, and environmental responsibility within the Double Diamond design framework to create a sustainable, ocean-inspired mini collection of teen clothing. The collection combined the ocean's beauty, balance, and vitality into both expressive and useful fashion by drawing inspiration from marine elements like corals, shells, waves, and seaweed. The study showed how sustainable practices can improve design accuracy, cut waste, and promote ecological awareness by utilizing eco-friendly materials like organic cotton, bamboo, and linen in conjunction with digital tools like CAD and digital textile printing. The collection, which was conceptually inspired by Smelik's (2018) new materialism theory, highlights the interdependence of technology, nature, and people while encouraging a shift to producing fashion in an ethical and responsible manner.The finished designs—the Marine Explorer bodycon dress, Sea Breeze Set, and Coral Dream Dress—embodiment comfort, uniqueness, and adaptability, meeting the needs of teens going through a transitional lifestyle. Ultimately, this study shows how digital innovation and marine-inspired aesthetics can be combined to create fashion that is not only useful and aesthetically pleasing but also meaningful and ecologically conscious, advancing the field of sustainable teen fashion design.

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