Enhancing Pattern Drafting and Fashion Illustration using CorelDraw and a graphics tablet

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Introduction

Fashion design is a multifaceted field that encompasses various aspects, from conceptualization to the final execution of garments. Fashion design has three components: style design, construction design, and process design (Xu et al., 2016). Pattern drafting and fashion illustration have a long history dating back to ancient civilizations. According to Tortora and Eubank, (2009), in ancient Egypt, Greece, and Rome, garments were often draped directly onto the body to create patterns.The introduction of computers in the late 20th century led to further advancements in pattern drafting and fashion illustration, with software such as CorelDraw, Gerber, and Adobe Illustrator making the process more accessible and efficient. Digital tools such as virtual reality, artificial intelligence, computer graphics, blockchain technology, augmented reality, 3D printing are continually being integrated with traditional fashion elements in the development of the fashion sector. Amos et al. (2017) reports that one such tool that has gained widespread adoption is CorelDraw, a vector-based graphic design software that has revolutionised the way designers approach pattern drafting and fashion illustration. CorelDraw has transformed the graphic art design industry, allowing designers to effectively translate their concepts into realistic digital graphics. Fashion flats, also known as technical drawings or flat sketches, serve as the blueprint for garments, showcasing proportions, details, and construction. Traditionally, fashion flats were created in 2D form using pen and paper, but with advancements in technology, designers now have the option to utilize 3D fashion flats

Problem Description

Small fashion design companies often face challenges in purchasing access rights to use the software requisite for illustration and pattern making such as Gerber and Clo3D as they are highly priced. Investment in such software also comes with minimum hardware requirements that make it difficult for small production set-ups or freelance fashion designers to invest in CAD. This paper seeks to explore ways of integration of fashion illustration and pattern drafting using CorelDraw and a graphics tablet (XP Pen DECO 01-V2) to optimize time, and increase efficiency in clothing production.

Methods

This study used the design-based action research technique. Design-based research method allows one to design, develop and test the product or model and its applicability in responding to a design situation. These phases include analysis of practical problem, developing of solutions, iterative cycles of testing and refinement of solutions in practice, and finally reflections and documentation for design principles. The four phases are similar to the design thinking process, a methodology popular in situational design problems. CorelDraw is commonly used by creatives as it offers many advantages to designers. Just like any other software program CorelDraw also requires one to have a certain skill level for them to be able to use the software in designing.

Results

To launch CorelDraw 2022 the following procedures were done, click on the start menu of the task bar (at the bottom left corner of the screen), move cursor and select CorelDraw 2022, and double click on CorelDraw 2022 to display. Drawing straight into a computer platform, such as CorelDraw, eliminates the need to scan hand-drawn artwork. Hand-drawn illustrations in digital graphics have a distinct and authentic appearance that distinguishes them from vector or digitally created images.
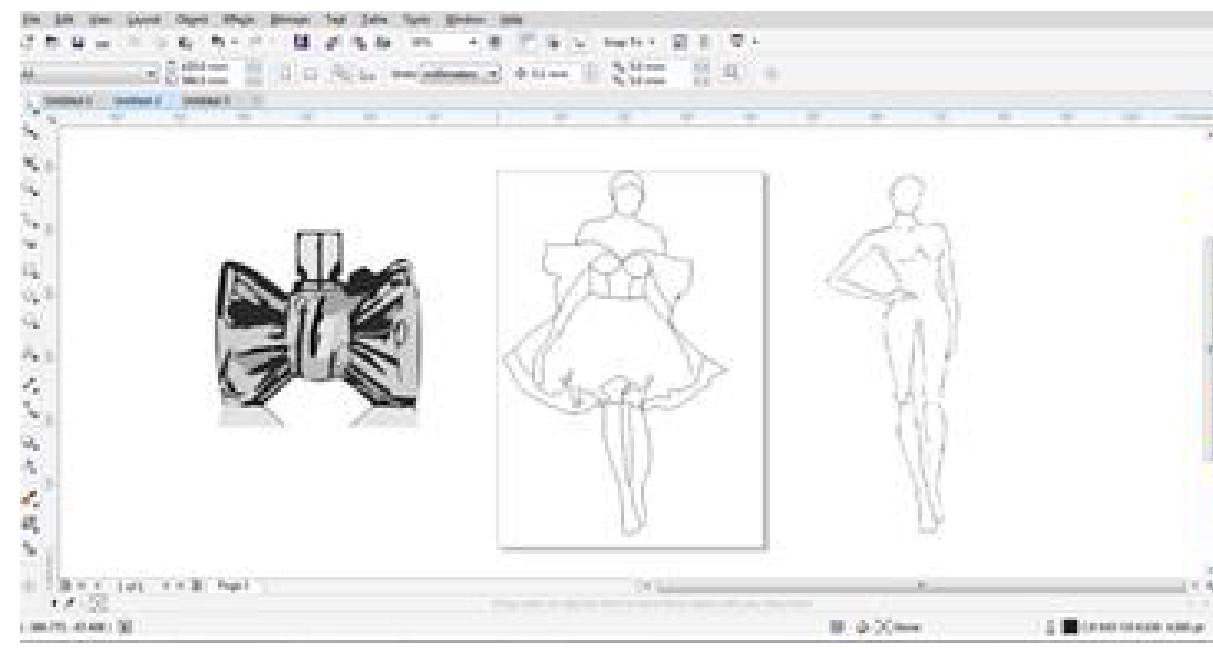

Figure 1. Sketched design with inspiration and the silhouette

The freehand tool on the toolbox bar was used to trace the design on top of the silhouette, using it as a guide to design as well as body shape.
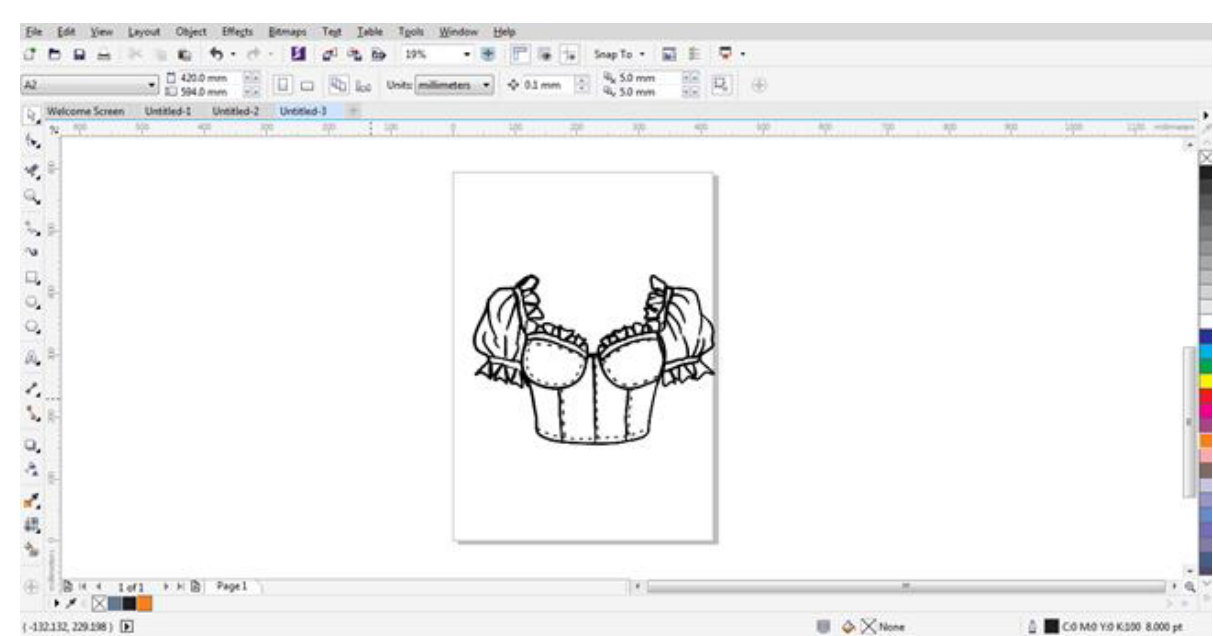

Figure 2. Female corset top design illustration

Before drafting a pattern there is need for an illustration guide of a design that guides the pattern maker of the design to draft the exact pattern for the design. The illustration in Figure 2 was hand drawn using the graphics tablet using the tools in CorelDraw. CorelDraw default tools were used for corset pattern development. Tools such as pick tool, rectangle tool, dimensional tool, text tool, shape tool, two-point line tool were used in the development of the pattern.
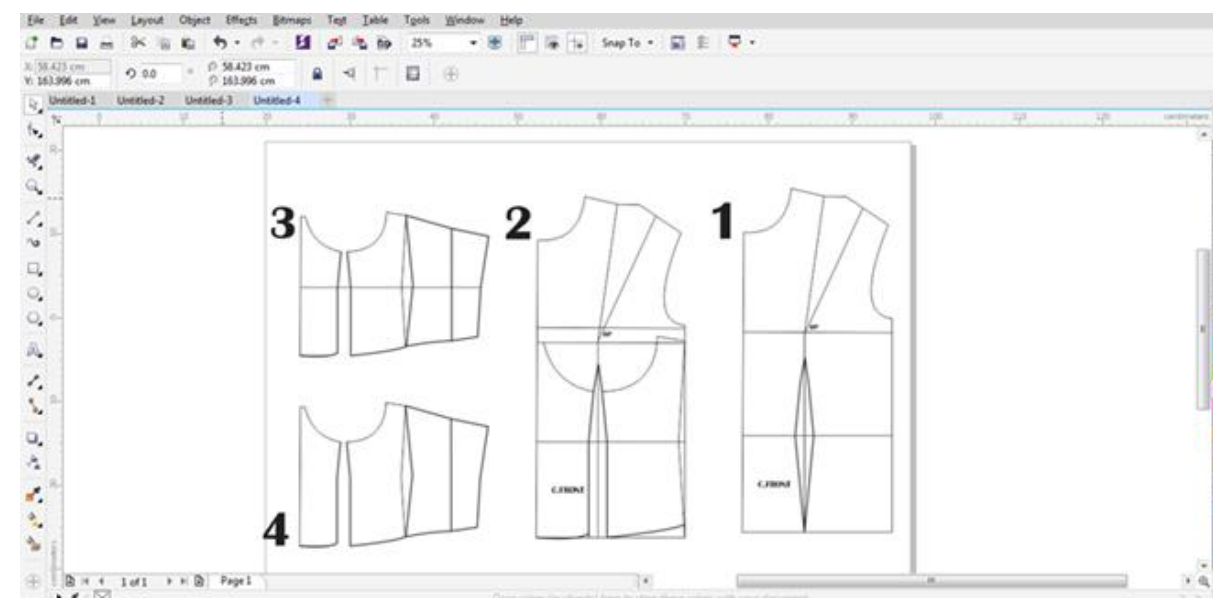

Figure 3. Pattern development of a female corset top

A corset top pattern development process began by changing the working paper size to A2, and drawing units to inches. A2 paper size was selected because it fits the corset top pattern well. The y-axis and x-axis ruler were used to guide correct positioning of lines. At this stage a female block full scale was used to develop a corset top of size 8.

Discussion / Conclusion

The study explored various digital illustrations techniques for fashion illustration using CorelDraw and the graphics tablet. The study sought to manipulate some CorelDraw tools in order to develop unique techniques that can be used to produce similar results that can be achieved through use of commercially available fashion CAD software such as Gerber. Practically using CorelDraw allows for the precise drafting of patterns, which can be tailored to specific materials. Digital drafting using CAD significantly enhances efficiency by reducing production time and increasing accuracy, allowing for more complex designs and better fit through automated processes. Moreover, digital methods such as the ones illustrated in this study facilitate innovative design possibilities, enabling the integration of various visual elements and textures that traditional fashion illustration methods cannot easily replicate. Using CorelDraw also improves the ability to visualise and adjust patterns in real-time at a lower cost thus leading to a more efficient garment design processes and improved end products similar to the findings by (Wang, 2020). Integration of technologies such as CorelDraw is critical especially for the small garment manufacturing companies as it improves their product quality. CorelDraw has the ability to utilise methods that generate patterns from user-uploaded images or style drawings, ensuring that the final products match customer expectation. While CorelDraw offers robust tools for pattern drafting, challenges remain in ensuring consistency across different drafting methods, which can affect garment fit and overall design integrity. Challenges such as software integration and user accessibility must be addressed to ensure practical application in CorelDraw. The use of graphics tablet as described in this study offers an opportunity to simply and improve the design output.

For small companies that face financial challenges in investing in CAD systems for fashion, using the alternative of CorelDraw can be an option that is worthwhile as it has fewer financial implications. The digital outputs illustrated in this study reveal that using a graphics tablet and CorelDraw allows the user to create complex designs and pattern drafting whilst the user feels like they are doing it manually through hand-rendered illustrations. Businesses can adopt the methods described in this study to develop their digital patterns and illustrations with much ease at a lower cost. These digital outputs can then be easily and efficiently communicated to the production team and or clients and make the process of prototype development quicker.

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