

Role of Technology in Fashion Designing Skills: An Exploratory Study in the Context of New Technology

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Abstract

Fashion designing skills have evolved through the use of technology in recent years. The integration of technology into the fashion industry has provided designers with a wide range of tools and techniques that can enhance their creativity and efficiency. With the help of advanced software, designers can now create digital sketches and 3D models, making it easier to experiment with different fabrics, colors, and patterns. Additionally, technology has allowed for more sustainable and eco-friendly practices in fashion design, through the use of digital printing, 3D printing, and recycling technologies. Social media and e-commerce platforms have also enabled designers to reach a wider audience and connect with consumers directly. Overall, technology has greatly enhanced the fashion designing skills of professionals, enabling them to be more innovative, efficient, and environmentally conscious. This paper explores the role of technology in fashion designing skills by analyzing the various ways in which technology has impacted the fashion industry.

Keywords: Fashion Design, Competence Development Technology (CAD), 3D Printing, Virtual Reality (VR) And Augmented Reality (AR), Learning Management System (LMS)

Introduction

Technology has become an important part of the fashion industry & its role has been increasingly significant in recent years. Fashion designing is a creative field that involves the use of various techniques and tools to create innovative designs. With the use of technology, designers can create designs that were once impossible to achieve with traditional techniques. In this paper, we will explore the role of technology in fashion designing skills and how it has transformed the fashion industry.

The role of technology in fashion designing skills has become increasingly important, as it enables designers to work faster, more efficiently, and with greater accuracy. Some of the technologies that have had a significant impact on fashion design include computer-aided design, 3D printing, virtual reality, and augmented reality. These tools have revolutionized the way designers create, collaborate, and communicate with each other and with their customers. CAD software allows designers to create digital designs that can be easily edited and modified, making it easier to experiment with different designs and make changes as needed. 3D printing technology allows designers to create physical prototypes of their designs quickly and easily, enabling them to test and refine their ideas before moving into production. Virtual and augmented reality technologies allow designers to create immersive experiences for customers, allowing them to see and interact with designs more realistically. This has become especially important in the age of online shopping, where customers may not have the opportunity to try on clothes before making a purchase. Observational skills are also essential for a successful career in fashion design. As a fashion designer, learners need to have a keen eye for detail, and be able to observe and interpret the world around you.

In addition to design, technology is also impacting the way fashion products are marketed and sold. With the rise of e-commerce platforms and social media, designers can reach a wider audience and market their products directly to consumers. They can also use data analytics to better understand consumer preferences and behavior, allowing them to create products that better meet their customers' needs.

Technology has had a profound impact on fashion design, enabling designers to work more efficiently, creatively, and collaboratively. More exciting developments would be seen in the field of fashion design as technology keeps evolving. Overall, this research paper aims to shed light on how technology is shaping the future of fashion design. We will explore the benefits and limitations of technology and its impact on the traditional skills and craftsmanship of fashion design. Furthermore, we will discuss the challenges that designers face in adapting to new technologies and the need for continuous learning and upskilling in this rapidly evolving industry.

Literature review

Technology has brought about a significant change in the fashion industry, and designers are utilizing various tools and techniques to create innovative designs. One of the most significant advancements in fashion technology is the use of Computer-Aided Design software. With the use of this software, designers can create 3D designs, which provide a better understanding of how the design will look in reality. This technology has reduced the time required for creating designs, and designers can now create multiple designs in a short period.

Virtual and Augmented Reality (VR/AR) is another technology that has impacted the fashion industry. With the use of augmented and virtual reality, designers can create virtual showrooms, which provide a realistic experience to customers. This technology has also enabled designers to create 3D images of designs, which can be viewed from different angles.

Artificial Intelligence (AI) has also impacted the fashion industry by providing designers with insights into customer preferences. AI can analyze vast amounts of data, such as social media posts, to identify trends and patterns. This technology has enabled designers to create designs that are aligned with customer preferences, thus increasing sales.

Sun, L., & Zhao, L. (2018) investigates the impact of technological advancements on the traditional roles of designer in the fashion industry. The paper examines the changes in the fashion industry that have resulted from the introduction of new technologies such as 3D printing, virtual reality, and artificial intelligence. The authors argue that technology has disrupted the traditional roles of designers, makers, and users, leading to new ways of creating and consuming fashion products. They discuss the shift towards a more collaborative and participatory approach to fashion design, where users are becoming more involved in the design process and have greater control over the products they consume. This paper highlights the need for designers and makers to adapt to changes to remain relevant & competitive in the industry.

Elfeky, A. I. M., (2014) found that the students who use the LMS had a higher retention rate and reported higher levels of satisfaction with their learning experience. They showed a greater understanding and appreciation of the benefits of technology in fashion design. The use of data analytics techniques in LMS provided valuable insights into students' learning behaviors, preferences, and progress. Overall, it can be analyzed that the data analytics techniques in LMS has the potential to enhance fashion design education by improving learning outcomes and increasing technology acceptance among students. Therefore these findings highlight the

importance of integrating technology into fashion design education and leveraging data analytics techniques to personalize the learning experience and improve student outcomes.

Wiana, W. & Barliana, M. S., (2018) suggested that using interactive multimedia provides a more engaging and effective way of teaching fashion design concepts and skills. This can lead to better learning outcomes and improved performance among students. Interactive multimedia can be designed to be flexible, allowing designers to explore different aspects of fashion design at their own pace and in their way. It can be more cost-effective than traditional teaching methods, as it can be used to reach a large audience without the need for physical materials or additional staff, and also can facilitate collaboration between designers and clients by providing a platform for sharing ideas, designs, and feedback in real time. Overall, the research paper provides evidence that incorporating technology and multimedia into fashion design education can have a positive impact on student learning and skill development.

Gleicher et al., 2011; Renkl & Scheiter (2015) findings confirmed that image overlay & student-generated visual cues can be useful tools for helping students in fashion design detect meaningful pieces of information from a picture. Students can use the image overlay technique to overlay different images of clothing or fashion accessories to create a new design. By doing so, they can identify key elements of each design and combine them to create something new and unique. This technique can also help students understand the importance of proportions, shapes, and color combinations in fashion design. In the visual cue technique, students create their visual cues to help them identify important elements of an image. By doing so, students can train themselves to pay attention to key details and develop a more discerning eye when it comes to fashion design. Together, these tools can help students become better at identifying and exploiting meaningful pieces of information from a picture in fashion design. By using these techniques, students can develop their creativity, critical thinking skills, and attention to detail, which are all crucial for success in the fashion industry.

Landim, et al (2017) explore the advantages and challenges of using chatbots in the fashion industry. The paper discusses the growing popularity of chatbots in the eCommerce sector, and how they can be used to improve customer engagement, increase sales, and reduce costs. Chatbots can offer a personalized experience to customers, by offering them product

recommendations based on their preferences, previous purchases, and browsing behavior. This helps to improve customer engagement and loyalty. Chatbots can help designers by guiding their customers through the purchase process, answering questions about products, and providing information about promotions or discounts. This can help to increase sales and revenue for the fashion eCommerce business. Chatbots can also help by collecting data on customer behavior and their preferences and also purchasing habits. This data can be used to improve marketing strategies & product offerings, resulting in better business outcomes. Overall, chatbot design approaches offer a range of benefits for fashion eCommerce businesses, including improved customer experience, increased sales, 24/7 availability, cost-effectiveness, & data collection.

Objective of the study

To study the Role of Technology in Fashion Designing Skills

Methodology

The present study is based on a survey conducted with a questionnaire. The sample size was 160 professionals from the fashion design field. “Mean score and one sample t-test” were used to analyze the primary data collected from professionals.

Finding of the study

There are 54.37 males and 45.62% females. In the age group of 25 to 35 years there are 30.62%, those between 35 to 45 years are 31.87%, and 45 years & above are 37.50%. Regarding tech-familiarity, Very familiar is 34.37%, Somewhat familiar is 26.87%, Not very familiar is 16.87%, and Not at all familiar is 21.87%. Looking at the frequency, Daily is 20.00%, Weekly is 16.25%, Monthly is 10.62%, Rarely is 10.00%, and Never is 5.62%. In types of technology, Computer-aided design (CAD) software is 18.12%, 3D modeling software is 15.00%, Virtual reality (VR) technology is 10.00%, Augmented reality (AR) technology is 8.75%, Smart textiles are 6.87%, and Others is 3.75%.

Table 1 Respondent’s Details

Category	N	Percentage
Gender		
Male	87	54.37%

Female	73	45.62%
Total	160	100%
Age		
25 to 35 years	49	30.62%
35 to 45 years	51	31.87%
45 years & above	60	37.50%
Total	160	100%
Tech-familiarity		
Very familiar	55	34.37%
Somewhat familiar	43	26.87%
Not very familiar	27	16.87%
Not at all familiar	35	21.87%
Total	160	100%
Frequency		
Daily	32	20.00%
Weekly	26	16.25%
Monthly	17	10.62%
Rarely	16	10.00%
Never	9	5.62%
Total	160	100%
Types of technology		
Computer-aided design (CAD) software	29	18.12%

3D modeling software	24	15.00%
Virtual reality (VR) technology	16	10.00%
Augmented reality (AR) technology	14	8.75%
Smart textiles	11	6.87%
Other	6	3.75%
Total	160	100%

Table2 Role of Technology in Fashion Designing Skills

Serial No.	Statement of Survey	Mean Value	t- Value	Sig.
1.	Technology has allowed for more sustainable and eco-friendly practices in fashion design.	4.78	16.050	0.000
2.	Fashion designing has been revolutionized by the use of technology.	4.32	9.927	0.000
3.	3D printing technology allows designers to create physical prototypes of their designs quickly and easily.	4.20	8.264	0.000
4.	Observational skills are also essential for a successful career in fashion design.	4.11	6.151	0.040
5.	Identifying and exploiting meaningful pieces of information from a picture.	4.12	6.561	0.000
6.	Technology has greatly enhanced the fashion designing skills of professionals, enabling them to be more innovative, efficient, and environmentally conscious.	4.76	15.037	0.000
7.	The role of technology in fashion designing skills has become increasingly important.	3.68	2.232	0.014
8.	CAD software allows designers to create digital designs that can be easily edited and modified, making it easier to	4.30	10.971	0.000

	experiment with different designs.			
9.	Virtual and augmented reality technologies allow designers to create immersive experiences for customers.	3.26	0.653	0.258
10.	Social media and e-commerce platforms have also enabled designers to reach a wider audience and connect with consumers directly.	4.22	9.457	0.000

Mean scores are presented in Table 2 in descending order. “Technology has allowed for more sustainable and eco-friendly practices in fashion design”, (4.78),” next statement is “Technology has greatly enhanced the fashion designing skills of professionals, enabling them to be more innovative, efficient, and environmentally conscious” (4.76). Fashion Designing is also found to be responsible for economic development. “Fashion designing has been revolutionized by the use of technology” (4.32). Another concern of technology initiatives such as, “CAD software allows designers to create digital designs that can be easily edited and modified, making it easier to experiment with different designs” (4.30), statement “Social media and e-commerce platforms have also enabled designers to reach a wider audience and connect with consumers directly” (4.22), “3D printing technology allows designers to create physical prototypes of their designs quickly and easily” (4.20). “Identifying and exploiting meaningful pieces of information from a picture” (4.12). The statement “Observational skills are also essential for a successful career in fashion design” (4.11). “The role of technology in fashion designing skills has become increasingly important” (3.68). “Virtual and augmented reality technologies allow designers to create immersive experiences for customers” (3.26). As per t-test all statements are significant as p value is below 0.05.

Conclusion

In conclusion, the role of technology in fashion designing has revolutionized the industry and transformed the way designers conceptualize and create their designs. With advancements in 3D printing, virtual reality, and artificial intelligence, fashion designers can now create and visualize their designs in ways that were not possible before. Technology has also made it possible for designers to work more efficiently and accurately, resulting in faster design iterations and

production cycles. However, while technology can enhance creativity and efficiency, it cannot replace the human touch and intuition that is essential in fashion designing. Designers need to strike a balance between utilizing technology and maintaining their personal touch and creativity. Overall, technology has played a significant role in enhancing the skills of fashion designers, allowing them to push the boundaries of creativity and innovation in the industry. As technology continues to evolve and grow, it would be exciting to see how it will shape the future of fashion and what new possibilities it will bring.

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