Analyzing the Gap between Physical and Digital Fashion

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Abstract

After the launch of the metaverse, digital fashion has been given more attention by fashion brands. In addition, the gaming and fashion industries' paths became intertwined through fashion items. However, in-game cosmetics[i] and real-life fashion garments are quite different in terms of material and style, i.e., there is a clear gap between digital and physical fashion. Due to its flexibility, digital fashion can easily be differentiated from physical fashion. This research aims to highlight the gap between digital and physical fashion in video games. For this purpose, a survey was conducted with 100 gamers. After collection from the participants, the data was reviewed, and accordingly, a sample game was chosen for this research. In order to narrow the gap between digital and physical fashion, a capsule collection was designed for the game called "League of Legends". Three pairs of outfits, one version for digital fashion and one for physical fashion, were prepared in 2D and 3D. The outfits were designed to suit the chosen characters. Such approaches can allow consideration of points of similarity for the pairs of designs, enabling adaptation to the digital world. As a result, the gap between digital and physical fashion can be narrowed and more realistic garments can be created for video games, which are able to satisfy and even inspire gamers.

Keywords: Digital Fashion, Physical Fashion, Video Games, In-game Cosmetics, Metaverse

1. Introduction

With the acceleration in digital transformation, especially after the Covid-19 pandemic, fashion brands' and customers' behavior started to shift, and digitalization became more important across the supply chain. The fashion industry is being transformed through different digital platforms. 3D visualization assumed a new importance and even became a necessity in the commercial arena, benefiting from enhanced technology, and as a result of changing customer behavior [1]. Fashion, therefore, clearly has gained a place in the Metaverse. However, there are major differences between digital and physical fashion. This research aims to highlight the gap between digital and physical fashion in video games, and narrow this gap through the design of a sample collection for a selected video game.

1.1. Physical and digital fashion

For the fashion industry, the difference between physical and digital fashion is rather distinctive. Since physical fashion is a centuries-old conventional fashion practice, its definition remains the same as fashion in general. In contrast, digital fashion is a fairly recent practice that emerged with computers and digital media. Digital fashion can be defined as the visual representation of garments and accessories that are created with computer technologies and various software. Digital fashion can be used as a tool in the different segments of physical fashion, such as design, marketing and communication. In addition it can be used as a primary or even sole medium of fashion in certain areas, such as in video games and cultural heritage preservation [2]. The digitalization of fashion creates many opportunities especially for designers and for customers at retail point [3]. According to the classification by Noris, et al. (2021), the volume of literature for digital fashion almost doubled in 2017, and increased exponentially since then; and digital fashion is increasingly attracting the interest of both academics and practitioners, in particular when referring to the category of communication and marketing [4].

Digital fashion is a relatively new term that refers to technological innovations in design, production, organization, marketing, distribution, sales, communication, experience co-creation, gamification, education and research. In this respect, video games appears to be an appropriate platform for bringing digital and physical fashion together, by, for example, presenting fashionable items in video games, as an example of the communication and marketing aspects mentioned above.

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1.2. Fashion in digital games

The digital game industry is a rapidly growing sector. Games which are playable by using electronic devices such as computers, mobile phones, and video game consoles are referred to in general as digital games. Digital games can be divided into single-player and multiplayer games [5]. There are many types and they are categorized according to their characteristics and fundamental aims. These game types or genres can be found intertwined. Therefore, subgenres can be created, such as action games, adventure games, action-adventure games, role-playing games, simulation games, strategy games, sports games, puzzle games, and idle games [6].

Even though the main goal of these games is not promoting fashion, fashion's role cannot be underestimated. The cosmetic items that gamers select affect their playing style and motivates their success. In the game *Dead by Daylight*, which is a survival horror game, the aim is to survive and escape the killer. Designers noticed that, even though the game is about survival, players want to appear cool while playing digital games, and as a consequence, cosmetic items have become a core component of the game. Customization of each individual survivor highlighted the importance of fashion in the game (Figure 1) [7].
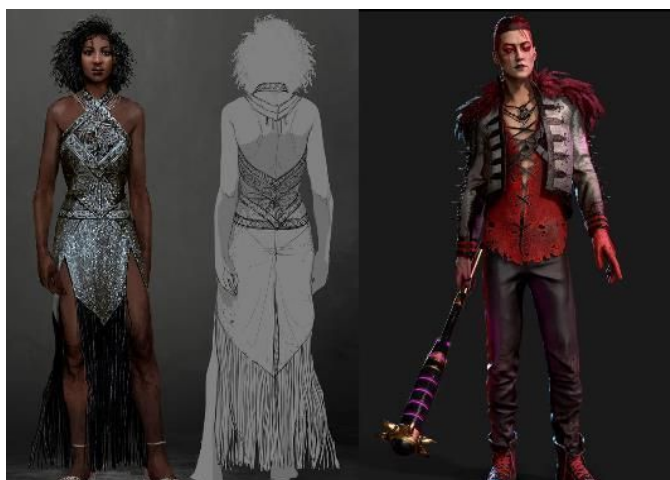

Fig. 1. Dead by Daylight's Costume Design
Source: C. Allaire, "Video Games Are Becoming a High-Fashion Playground," Vogue, Oct. 12, 2021.
https://www.vogue.com/article/video-game-fashion-designer-collaborations

The fashion industry and the game industry represent two of the world's largest markets. Combining these creates a new sector, and digital clothes in games are gaining more importance than ever. Moreover, this raises the important issue of how the digital and physical fashion can come together in digital video games. The people who are playing video games want to appear cool and own fashionable items in both the real and digital world. The digital games community is enormous, and gamers compete to look more attractive than other players. When we also consider that the most active gamers in the world are GenZ and Millennials, the gaming industry is one new and inspiring channel to reach this young target group. Gibson (2021) identifies the translation of fashion into the video game fan communities as a particularly extraordinary phenomenon. All this data provides the reasons for promoting cosmetic items in games and collaborations with luxury brands [8,9].

Some luxury brands have started to collaborate with game industry leaders, as seen in Louis Vuitton's recent cooperation with the "League of Legends" to increase brand awareness for gamers [10]. The gamers who play League of Legends can find and purchase Louis Vuitton cosmetics, and are directed to wearable garments in real Louis Vuitton stores. Other examples can be found: luxury fashion house Balenciaga unveiled its autumn/winter 2021 collection in an original video game [11]. They collaborated with one of the most popular games, Fortnite (Figure 2). According to this business model, Fortnite gamers can purchase Balenciaga cosmetic items. Moreover, people can find Fortnite-branded items like shirts, hoodies, caps, and tees in the Balenciaga stores [12].

Fig. 2. Balenciaga in Fortnite
Source: "Gaming & Fashion: Two Aspirational Worlds of Experiences Combine,"
University of Fashion Blog, Oct. 10, 2021. https://www.universityoffashion.com/blog/gaming-fashion-two-aspirational-worlds-of-experiences-combine/

The fashion industry and game industry are connected not only by their interest in cosmetic items, but also via advertising. For example, *Let's play video games* is a new term referring to a kind of gameplay video where the player's video commentary appears in a screen corner as the game is being played. Due to the attention given to it, it is significant for the audience in terms of advertising potential [13,14].

Due to the digital games, not only is 3D fashion is gaining attention with cosmetic items but also, digital fashion is emerging as an opportunity for fashion designers [15]. Returning to the digital fashion definition, it is seen as a new way to create fashion items using computers and 3D software [16]. This technology allows more freedom for both user and creator. It allows the creator to design with more flexibility due to the limitless options, for instance, designers can decide to use hard plastic as a fabric instead of silk (Figure 3). Due to the options, designs are more individualized and customized. Moreover, in digital games, players can choose to wear fashionable items during the game. Some of the brands have become aware of the importance of digital clothing in games, and began initiatives to create a new market in a digital world, as seen with the examples of Gucci in Animal Crossing, and Louis Vuitton in League of Legends.

Fig. 3 Digital Dress Sample
Source: "Digital Clothing: The Future of Fashion," Affection.
https://www.affectionmagazine.com/master-blog/digital-clothing-the-future-of-fashion

2. Methodology

2.1. Selection of video games for designing capsule collection

Before the designing process, three games were chosen according to the number of cosmetic items, relationship with the fashion industry, and gamers' purchasing behaviors. The games were Team Fortress 2, League of Legends, and Animal Crossing New Horizons, selected according to the project's design needs. All these games have a variety of cosmetic items and a large gamer population, but are differentiated from each other by the style of the cosmetics involved. For instance, Team Fortress 2 has comic and surreal items, League of Legend has fantastic items, and lastly, Animal Crossing New Horizons has generally daily life items.

Team Fortress 2. Team Fortress 2 is a multiplayer team-based video game developed and released by Valve in 2007, and has 1671 cosmetic items that can be gathered through various resources. While some of the items featured in the game are quite eccentric, there are also more elegant ones in the game. The designs in general consider the character's background and personality [17].

League of Legends. League of Legends is a team-based multiplayer game developed and published by Riot Games in 2009. The game has over 140 unique characters, called champions [18]. While League of Legends offers vast range of champions for different play styles, they also consider the aesthetic preferences of the community, offering a total of 897 different outfits (known as skins[ii]) for its champions (Figure 4) [19].

Fig. 4 League of Legends Gwen's Costume
"How Many League Of Legends Skins Are There In 2021?," Apr. 04, 2021. https://zephyrnet.com/how-many-league-of-legends-skins-are-there-in-2021/ (accessed Sep. 15, 2022).

Animal Crossing New Horizons. Animal Crossing is a real-time open-world game franchise created and released by Nintendo. Animal Crossing New Horizons features wearable clothing items that can be bought from in-game characters or crafted by players via an in-game item called Nook Phone. Moreover, players can host fashion shows and runways with friends. Many brands, even major ones such as H&M, use these events to show their new collections [20].

In order to create a baseline for the research, these three video games were selected for analysis, according to their respective genre and the usage of fashion design in the game.

2.2. Survey design and collection development

Before creating the collection, a survey was developed, aiming to reveal players' behaviors and habits toward fashion in terms of both physical and digital mediums. The survey included section which (1) elicits demographics, (2) collects information about choices of video games, (3) includes questions about habits and preferences with the in-game cosmetics, (4) elicits physical fashion preferences, and lastly, (5) seeks opinions on the relationship between the digital and physical fashion.

In the final phase of this practice-based research, a capsule collection was designed based on the questionnaire data.

3. Results and Analysis

3.1. Survey results

Results of the survey suggest similarities in fashion preferences across digital and physical fashion, however, a major point of differentiation is color and style. For instance, according to the survey, participants' preferences tend towards fantastic style garments, whereas, in daily life, they preferred more casual style. Moreover, while playing, they preferred blue, purple, orange, blue, and pink, while in daily life, mainly white and black.

According to the survey, 66% of the participants stated that they are more likely to play multiplayer rather than single-player games. Since in-game cosmetics become more important in a social environment, this finding supports the importance of in-game cosmetic items. In addition, there is no consensus among responders about the reasons for buying particular skins. According to literature review, perceived performance could be a key factor. Moreover, according to the responders, the economic factor is the main source of differentiation between physical and digital fashion, followed by utility.

3.2. Designing a capsule collection

Design Project Definition. The design project in this research involved producing both digital and physical garments, therefore, the name of the project is selected as 'Duality'. According to the survey analysis, "League of Legends" is one of the world's most popular online multiplayer battle arena games, and thus, this game was selected as the basis for design, and the looks in the collection were inspired by the game's characters. A character is one of the most important aspects of a video game. It can be used for many different purposes, among which are: creating a sense of progression, creating deeper engagement, creating a bond, and associating a game with real life [21].

Chosen characters for this design project are Ashe, Leona, and Lux. For inspiration, before designing a collection for them, a mood board was created. As seen in Figure 5, the mood board displays the chosen characters and their environment. All of the inspirations come from chosen game "League of Legends". The capsule collection designed for this research was aimed at young, strong-willed, and confident women of between 18-35 years old. The collection was designed with daily usage in mind. In order to better understand the target group, a lifestyle board was created, seen in Figure 6.
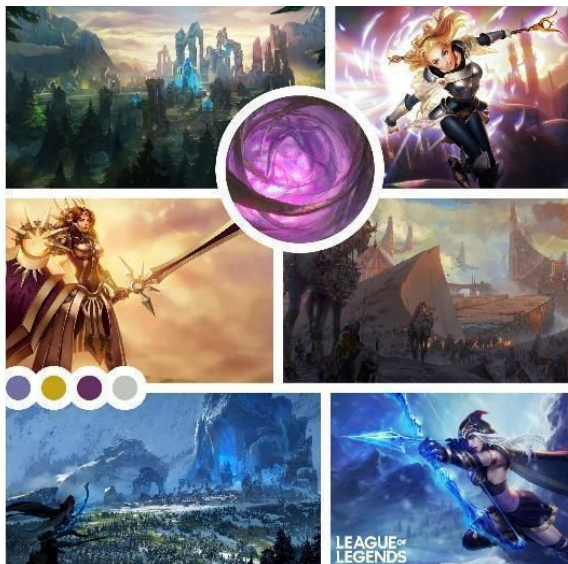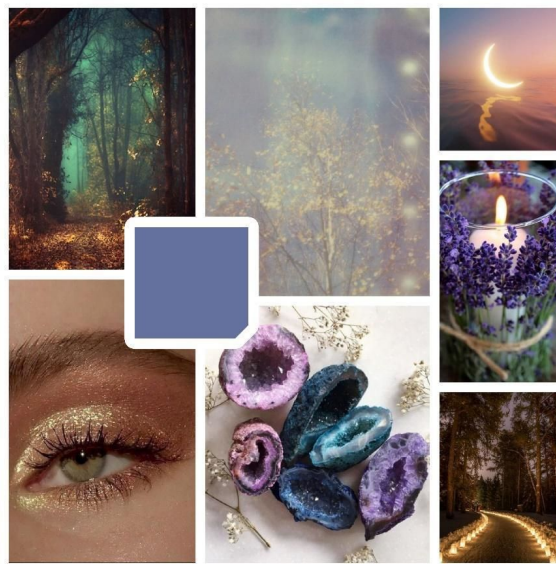

Fig. 5. Moodboard for inspirations   Fig. 6. Lifestyle Board

Capsule Collection. The collection consists of three digital and three physical outfits. The outfits represent the survey participants' highlighted characteristics and the in-game characters' personalities.

Design 1: Ashe
The first designed character costume of the collection is for Ashe. Her main feature is her role as an archer [22]. In the light of the survey results, a new digital look was prepared for Ashe, considering her specific identity (Figure 7). An asymmetric dress is designed to enhance the look, through the use of dynamic lines. Banana silk and artificial leather fabric were selected for their stretchy nature. Sustainably produced plant-based artificial leather is used for boots and ribbon sections. Moreover, Ashe's leadership role is reflected in the outfit's gold trim. Technical drawings in Figure 8 show the front and back details of the first digital design in the collection.

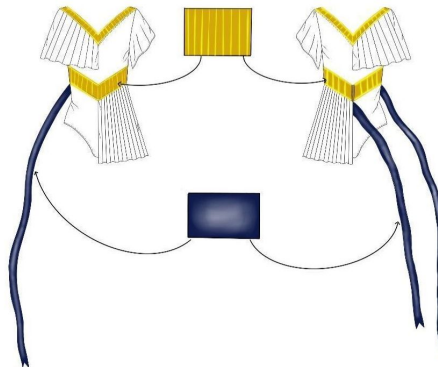Fig. 7. Design 1 for digital version for Ashe   Fig. 8. Technical drawing for design 1

As a follow-up, the physical version of the first design was created so as to be more relaxed and suitable for daily life, consisting of a comfortable bodysuit and elegant blouse in a monochromatic color combination (Figure 9). Asymmetry is used in the bodysuit to highlight similarities with the digital version. Spandex, viscose, and bamboo silk fabrics were used for the creation of the bodysuit. Figure 10 shows the technical drawings with the details of the look.

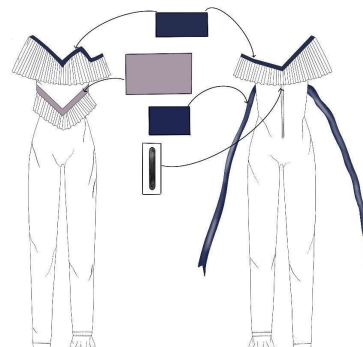Fig. 9 Design 1 for physical version for Ashe   Fig. 10. Technical drawing for design 1

Design 2: Leona
In the game, Leona represents the fire of the sun. Her equipment is armor and a sword. Her main aim is to defend Mount Targon [22]. A new digital look was prepared for Leona based on the survey results, considering her specific identity (Figure 11). The deliberate use of purple pattern creates a striking contrast with her personality and beliefs. Her shoe design is inspired by the light of the Sun. Spandex and satin silk are used throughout the look. Transparent silk details are used on the chest and waist area. Design details are illustrated in Figure 12. As can be seen in the figure, the designed look consists of a single piece similar to a jumpsuit.

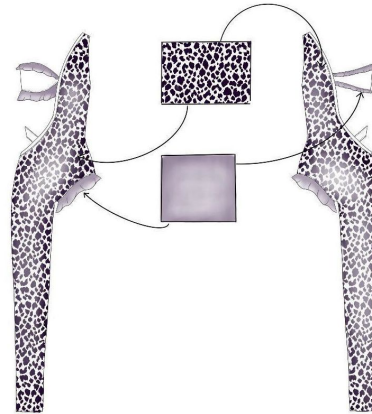*Fig. 11. Design 2 for digital version for Leona*

Fig.12. Technical drawing for design 2

The physical version of this design, a stylish top and elegant pants, gives a feel that is more relaxed and suitable for daily life (Figure 13). To ensure style and fit, the top was designed as a purple glitter-coated halter neck tee, decorated with transparent purple satin silk detail. For the bottom piece, a leopard-printed fabric is used. This looks sufficiently elegant for use on special occasions. It also has the same transparent satin silk detail as the top, connecting the two pieces with the same design language. This look underlines that the sun does not need its own color to show its power. As can be seen in Figure 14, the design consists of two pieces, the top and the pants.
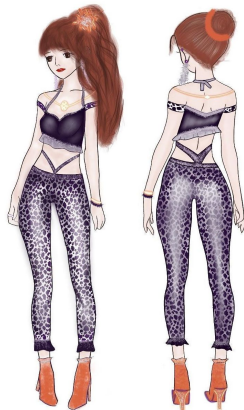

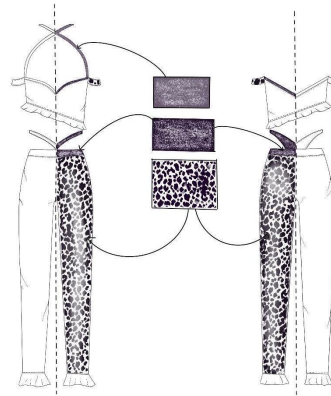*Fig. 13 Design 2 for physical version for Leona*

Fig. 14. Technical drawing for design 2

Design 3: Lux

In the game, Lux has magical power, and she is known for extinguishing the lights. Her character is optimistic and this allows her to assume a highly powerful role [22]. Two pieces are combined in the design. For the look, the first part of the design consists of a two-color one shoulder dress in dark purple and lilac colors. The fabric is satin. The overall look is strengthened with a cloak made with viscose and lyocell. The inside of the cloak has flower details to increase the mystic aura of the general look, and the edges have furry details to increase the sense of femininity (Figure 15). Furthermore, all of the accessories depend for their effect on the light itself. Technical aspects of the garments can be seen in Figures 16 and 17.

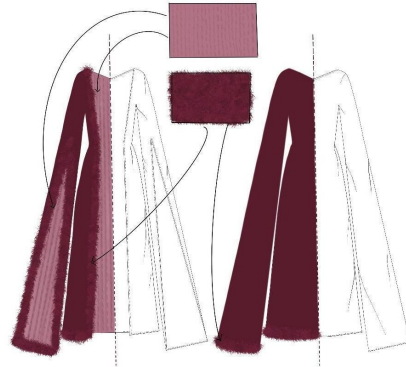Fig. 15. Design 3 for Digital Version of Lux

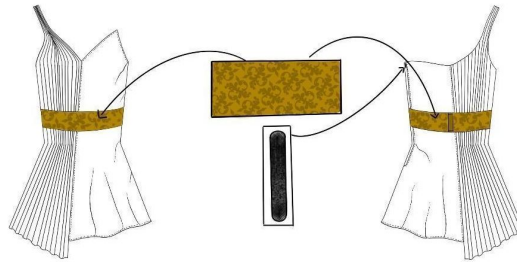Fig. 16. Technical drawing for design 3

Fig. 17. Technical drawing for design 3

As a physical version of this design, a coat and a short skirt overall creates a feeling of style and elegance. The flower-printed satin lining was inspired by the character of Lux herself. Furthermore, light purple and lilac colors were used for the short skirt overall. The overall's upper part is plain, but is embellished with flower-printed details. The lower part gives a sense of flow in both the shorts and the skirt. All of these technical details are shown in figures 18, 19, and 20.

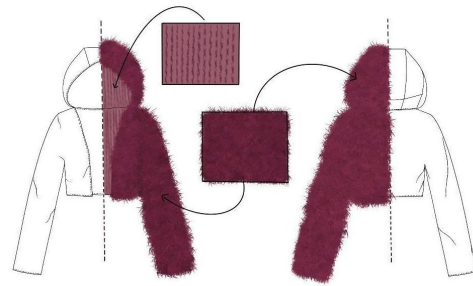Fig. 18. Design 3 for physical version for Lux

Fig. 19. Technical drawing for design 3

Fig. 20. Technical drawing for design 3

4. Conclusion

The rationale for this research is to narrow the gap between physical and digital fashion by creating a collection which is appropriate both for the game and for the real world. The collection preserves the details of the in-game cosmetic items, but adapting them for daily usage. This collection allows gamers to clearly represent their own identities across these two very different mediums. In this way, the gaming community can become more fashion aware, thus increasing interest in digital fashion.

Although some brands have already had successful collaborations with major video game producers, the biggest challenge in this context continues to be how to promote the usage of digital garments in the real world. We believe that for a full integration of digital and physical fashion, all components in a look should be considered as a whole; thus, rather than simply adding basic print designs to the existing physical garments, the entire garment should be planned so that it contributes to gamers' experience and promotes a feeling of integration between virtual and physical fashion.

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[i] In-game cosmetic can be defined as an item that allows the player equip, change and modify the look of things in the game. They are used for avatar customization.

[ii] A skin is a cosmetic change to a character that has no effect on gameplay. Many games use skins as a way to entice players to spend money, or as a reward for completing difficult tasks.