Application of Virtual Reality Technology to Inspire Apparel Design

Samirah Alotaibi and Sandra Starkey

University of Nebraska-Lincoln, USA

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Female Medium (size 6-8) Bust 34", Waist 26", Hip 35"

Contextual Review and Concept: Exploration with VR technology provides opportunities that would not otherwise be available in a midwestern university classroom (Lau & Lee, 2015). This project was a part of a larger study that explored the use of virtual reality (VR) to inspire clothing design in an experimental apparel design classroom, (Starkey, 2018). Fashion designers often acquire inspiration from new and novel experiences (Keiser, Vandemar & Garner, 2017). VR technology provides a means to explore a variety of simulated experiences including art, travel, and cultural interactions. VR has proven to be a useful tool for both design educators and students for prototyping and collaborative design projects (Mikropoulos & Natisis, 2010). Preliminary research about the history and application of VR technology was the starting point for the project. VR for this project enabled an experience similar to an educational field trip through the use of a computer, specifically, utilizing design apps to create a simulated environment that inspires apparel design. A journal, sketchbook, and photographs were ongoing course requirements and assisted in the documentation and reflection of the garment design and construction processes. These are practices that have been found as effective ways to document apparel design scholarship in order to better understand the actual processes of designing and making (Nimkulrat, 2007; Pedgley, 2007). The design of a unisex ensemble was directly inspired by two VR apps that resulted in a thought-provoking outfit with a combination of both traditional and modern design elements. This research adds to the body of the apparel design scholarship that utilizes and evaluates the benefits of VR technology to inspire apparel design.

Process, Techniques, and Execution: After completing preliminary research, the process began with the use of a Samsung Gear VR Headset which was compatible with the Galaxy S7 Phone and powered by Oculus. The designer initially explored several free apps that were a part of the preliminary research requirement for the course before viewing additional apps on her own. The designer narrowed the inspiration choices down to three apps. The first was an interior design app called Magic Design Vol. The second app was Vlisco, a real-life portrayal of a textile factory. Vlisco has manufactured distinctive fabrics designed by African women since 1846. The third app was Singularity, which is a motion-graphic experience that creates an abstract, geometric, and colorful representation of how a superhuman intelligence would rapidly evolve to make sense of the world around it, starting with the most basic concepts and walking toward a horizon beyond

human understanding (Singularity on Gear VR, nd). The designer was particularly inspired by the cultural heritage featured in the textile design prints in the Vlisco app. It is unique for three reasons: firstly, the representation of the African culture through the textile designs they create; secondly, the prints are bestowed with special names as well as meaning by merchants of Central and West Africa; thirdly, those prints have since become cultural treasures (Appadevice, 2018). Based on these qualities and to reflect her personal ethnicity, the designer included some Middle Eastern ethnic heritage nuances in the design. Moreover, she was inspired by the use of geometric shapes, colors, and lines from the Singularity app. A combination of visual elements inspired by these apps informed the design of a unisex ensemble that included a top and trouser. The top was asymmetrically designed, displaying a quilted panel in the front, and a longer panel falling from the back. The two panels feature digitally printed portraits and a folded square technique. Portraits were printed on silk organza, which reflects the designer's cultural background, and are framed by the folded fabric squares to add emphasis to the images. A companion trouser of solid black georgette was created using a draping technique to emulate Turkish pantaloons.

Aesthetics Properties and Visual Impact: Vliscos's heritage and design signature is a multicultural melting pot of beauty and industrial craftsmanship (Vlisco, nd). Likewise, this unisex ensemble also incorporated some ethnic elements such as the Turkish pantaloons and the digital portraits of a woman wearing a traditional dress. The VR apps chosen blended well with the designer's own cultural inspirations. The different lengths of the two panels create interesting visual impact, making the two panels the focal point of the garment. The folded square technique used in the two panels of the top piece represents a high level of craftsmanship and enhances visual interest using repetition. Furthermore, using handcraft techniques - such as quilting, a practice various cultural groups have taught for many years - and incorporating them with the new technology - such as digital prints - demonstrates creative approaches that combine historical cultural elements with modern technology. Overall, the VR project provided interactive 3D inspirations that wouldn't have been obtained otherwise. The use of VR technology in the experimental classroom was an enjoyable project that motivated a new design direction not previously explored by the designer (Starkey, 2018). Important to note, the designer found it difficult to find additional apps relevant to apparel design that could have added quality to the project. It would be helpful if there were more apparel design apps specifically for VR use in the classroom. Physical issues were minor but at times, the VR headset caused blurry vision and dizziness.

Design Contribution and Innovation: This project was a part of a larger study that evaluated the incorporation of technology in apparel design classrooms. The VR technology provided the opportunity to explore new experiences without leaving the classroom and this was personally helpful for design inspiration for this outfit. The outcome, a unisex ensemble, explored contrasts and combined femininity with masculinity, symmetrical with asymmetrical lines, and heritage with modernity. These were all novel outcomes that were directly inspired by the VR apps. The next

step is to take this project further by creating a unisex ethnic line that combines modern styles sculpted in the traditional spirit using additional VR apps as inspiration. Future apparel design research will explore a variety of handcraft techniques combined with modern technology.

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