Public Abstract

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Title:ACCESSING AXIS: EXPLORING DESIGN COGINITION FROM VISUAL AND HAPTIC EXPERIENCES AS
AN APPAREL DESIGNER IN DIGITAL 3D IMAGING USING 3D PRINTING TECHNOLOGY

Despite the rise of 3D printing technology in recent years, the novel technology has not yet heavily expanded to the realm of textile and apparel design. Although 3D printed design explorations have been unique and successful, the information shared only pertains to unique garment silhouettes or materials applied as oppose the insights into the specific 3D CAD process, which is the core of such digital fabrication methods. Following the Mutual Shaping of Technology framework, this study zoomed in on the ways for traditional apparel designers transition into the digital 3D modeling process from the visual and haptic cognitive aspects. This investigation involved a focus group study with 10 participants who are 3D CAD practitioners with hands-on object making backgrounds. The group study outcomes further contributed to the strategy that was then utilized in an independent case study involving studio practice and the development of a 3D printed wearable garment.The results from this exploratory study suggest that the transition from hands-on to digital modeling is a rather challenging process and relies heavily on tacit knowledge and the combination of object and spatial visualization skills interpreted in the forms of visual and haptic memory in order to develop an efficient workflow in the digital design process. The findings of this study are of great value in understanding the cognitive nature of the apparel designer's virtual design process in order to reflect on the current design curriculum. This study also is of importance to the future 3D CAD program interface design for both apparel and non-apparel design practice.