Students' Learning Experiences using Three-Dimensional Design Software (Adobe Dimension) for Virtual Mock Store Design

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Many visual merchandising courses in major universities in the U.S. provide students with learning opportunities to build a mock store space and design store layouts using one of the plan-o-gram software in the market. These learning opportunities allowed students to understand store foot traffic, estimate the number of stocks they can hold in the store, and simulate visual merchandising and store ambiance. Students in my visual merchandising course completed the plan-o-gram project as a part of the course projects using a three-dimensional object and space design software, Adobe Dimension.

The learning objective of this project was 1) to design virtual store spaces that include shopping areas, display windows, dressing rooms, stockroom, counters, etc., 2) to design a good store layout to maximize the efficiency of the store traffic, 3) to use proper mannequins, props, and furniture that can hold a sufficient amount of merchandise, 4) to design overall store ambiance with a window display, decorations, and colors, and 5) to integrate overall learned contexts into the virtual store design (e.g., principles and elements of designs, store layouts, types of mannequins, props, and fixtures, signages, and signs).

This project was completed through four class times (two weeks). In the first class, students were encouraged to be familiar with the software tools, such as re-scaling, moving, rotating, and zooming in/out the objects and camera angle, while watching a tutorial video for using Adobe Dimension tools. In the second class, students designed their virtual mock store spaces after watching the instructor's demonstration video for a store space design. Students learned how to scale the floor and walls and locate the objects at the right angles. In the third class, students learned how to search the assets (objects) from Adobe Stock (the asset search platform offered by Adobe), save them in their stock library, and bring this to their virtual store. Students also learned how to decorate the walls, floors, or signages with their own saved images (Adobe Photoshop CS) or prepared materials from Adobe Stock. Students also watched demonstration videos for stocking items in the virtual mock store, working on surfaces and materials. In the fourth class, students completed stocking items in their virtual store and revised their virtual store design. Students also submitted a written report along with their virtual mock store designs by integrating their learned knowledge and providing their rationale behind their store designs. Figures 1 and 2 are snapshots of demonstrating the virtual mock store design.

There are advantages and drawbacks to using this three-dimensional design software. First, students can create an infinite number of floor plans and store designs using diverse assets (objects) and materials available in the software or Adobe Stock. Various types of mannequins, props, and furniture are available in Adobe Stock or as starter assets in Adobe Dimension; thus, students have freedom of choice for mannequins, props, and furniture as their tastes. However, free assets are somewhat limited, while some assets require the purchase of subscriptions for Adobe Stock licensing. If students wanted to create a new object, they had to use another professional software for three-dimensional object designs.

Figure 1. Front View of a Virtual Store

Figure 2. In-Store Design of a Virtual Store

Second, Adobe Dimension can be integrated with diverse software such as Adobe Photoshop and Adobe Illustrator, which are readily available in major universities that hold licenses of Adobe Creative Cloud. However, this software requires a high spec of computer hardware. Students had to experience their computer slow down as the number of assets (objects) increased in the virtual mock store. Due to this reason, students could not hold a large number of merchandises in their virtual mock stores. Therefore, this software could be a convenient choice as a teaching tool, but a higher spec of computers is necessary.

Third, the advantages of creating a virtual mock store using Adobe Dimension are in line with students' experiential learning. This project requires students' diverse knowledge while using the most up-to-date software. Through this project, students can create virtual mock stores to place correct mannequins, props, and furniture and create a store ambiance for a cohesive store concept, with the ultimate goal of enhancing consumer experiences and increasing sales. Students can also simulate what their virtual mock store looked like, evaluate their store designs, and revise them. According to Bloom's Taxonomy, effective learning processes successfully implement various learning procedures--remember, understand, apply, analyze, evaluate, and create (Bloom, 1956). Based on the knowledge students learned during the classes, students could successfully create a virtual store while applying various course contents during this project.

Lastly, the ability to build a virtual mock store via Adobe Dimension can be expanded to students' ability to build a virtual store for augmented reality, if combined with augmented reality software (i.e., Adobe Aero). Students not only be able to create a virtual mock store for the visual merchandising simulation but also for create augmented reality spaces for bringing customers to the augmented reality. With the advent of e-commerce, especially in the last few years, we have experienced a peak of consumers choosing e-commerce over traditional brick-and-mortar stores. Now, the era of interactive retail spaces is expected to reign with more consumer experience-driven technologies, such as interactive mirrors, augmented reality, and location-based mobile advertising, as both e-commerce and brick-and-mortar stores win.

Major comments about this software from the students are as follows. Students mentioned they enjoyed this project and were deeply engaged in the virtual store design because they could use various design options, which enabled them to create their stores with desired store concepts. However, some claimed the lack of time to finish the project due to the technical issues associated with the graphic memory and willingness to learn the additional tools along with this software.

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