

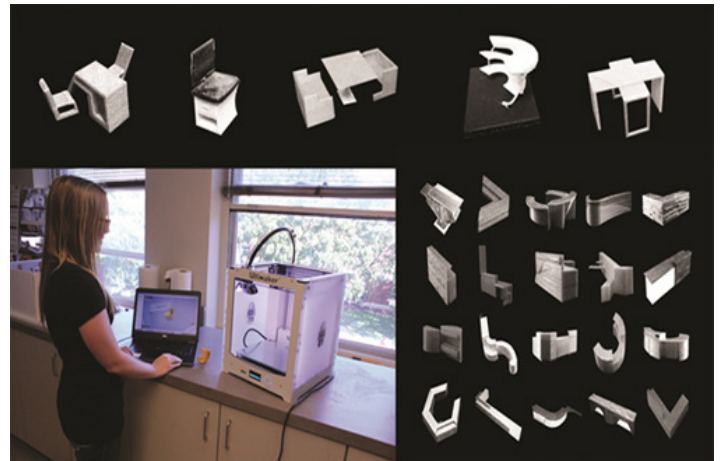
# DIGITAL PROTOTYPING IN INTERIOR DESIGN: A CASE STUDY IN INTERIOR DESIGN EDUCATION

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**P**hysical prototypes in design have been traditionally used to provide a representation of final design outcomes and to improve as well as obtain feedback on the design process. However, Studies on physical prototyping or model making in design have shown to increase fixation (Christensen, and Schunn, 2007). Designers tend to fixate on the design during the time that they spend on making the physical prototype. This is considered as a sunk-cost effect in physical prototyping (Viswanathan and Lindsey, 2013). Using virtual modeling techniques together with digital prototyping may reduce any fixation effects caused through physical prototyping. While identifying digital prototyping as a valid method in problem solving, this study explores the connection students make when translating the virtual models in to physical reality using digital prototyping.

Two sections of an early interior design studio, where each section had fifteen students, were selected as subjects for this study. They were provided with a simple interior design problem and as a part of that design problem they were asked to design a piece of furniture that corresponded to their overall design concept. Students used the sketchup software to model the 3D virtual models of the piece of furniture. These furniture pieces ranged from Chairs, Bunk beds, Tables to Closets. Then students used a desktop 3D printer to print the model.

The students answered a questionnaire based on the Technology Acceptance Model (TAM) regarding their use of the software and hardware in 3D printing. The results suggest that students found digital printing to be easy to use and very useful for their future careers as designers. Future directions in this study are seen in duplicating the study with more subjects as well as comparing with traditional and virtual modeling through a between groups study.



The results of the study are expected to contribute to design education to understand the implication of using different mediums to express design intentions, and to better understand how different mediums provide means of reducing fixation in the creative design process. With the advent of new technology it is important to identify how the profession can adopt them to be used effectively and efficiently. Providing students with knowledge on how to use these tools in school give them an added advantage when entering the profession.

## References

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