

Comparative Analysis of Traditional and AI-Assisted Visualization Techniques in Interior and Exterior Design

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Abstract

This study aims to establish a common ground between the disciplines of landscape architecture and interior architecture by evaluating the advantages and disadvantages of AI-assisted visualization techniques in comparison to traditional visualization methods. Within the scope of the study, a previously completed landscape design project and an interior design project will be selected; these projects will be re-visualized using both traditional methods (such as hand drawing, CAD, 3D rendering, etc.) and AI-supported visualization tools (e.g., Midjourney, DALL·E). The use of visualization tools will be limited to the five applications most preferred by the survey participants. The resulting visuals will be compared based on criteria such as aesthetic value, realism, perception of scale, and material expression. These visuals will then be presented to three different user groups (expert academics, private sector professionals, and undergraduate students trained in design), and qualitative and quantitative data will be collected using a 5-point Likert scale method. Based on the feedback from participants, the potential use, perceived value, and limitations of AI tools in the design process will be discussed. This study aims to reveal the impact of AI-assisted visualization tools on the design process from an interdisciplinary perspective. The level of success of AI-generated visuals in terms of aesthetic value, realism, perception of scale, and material expression will be analyzed based on evaluations from different user groups, and the strengths and limitations of these tools will be identified. In addition, by comparing these outputs with those produced using traditional methods, the study aims to generate insights into how AI tools can play a complementary role in design education, professional practice, and creative processes. Ultimately, the findings of this research are expected to lead to recommendations on how AI-based visualization tools can be used more efficiently and consciously within design disciplines such as landscape architecture and interior architecture.

Key Words: *Artificial Intelligence, Interior Architecture, Landscape Architecture, Design Process, Visualization*