

Processors and Sensors or Paper and Clay? Low-Tech Games in Neuroarchitecture

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Abstract

The development of cities to address social, cultural, and environmental challenges increasingly relies on new technologies. One such method is eye tracking (ET), used to assess how urban developments impact the perception of urban structures and architectural heritage. However, ET has several limitations, including long data collection times and high costs. Additionally, technological constraints prevent eye tracking from being universally applicable, as it may not work for all individuals, in rainy conditions, or at night. Could games offer an accessible and environmentally friendly alternative? Although games are often perceived as less serious research tools, the idea of using “childlike play” may not seem as attractive as employing sensors and AI-driven data processing. However, initial studies suggest that exploring simple solutions may be worthwhile. To investigate this, a series of parallel studies were conducted, comparing findings derived from high-tech and low-tech approaches. Specifically, researchers analyzed how people visually engage with proposed urban interventions at different scales and compared this with their ability to reconstruct or select corresponding alternatives using 2D or 3D puzzles. The first comparative analysis revealed significant correlations between these methods. These findings suggest that games could provide a sustainable, low-cost method for evaluating urban development impacts on heritage sites. Future research should further explore the broader applicability of puzzles and other game-based approaches in city management and heritage protection.

Keywords

Neuroarchitecture, Eye-tracking, Games, Low-tech, High-tech

Current status of the research is: Work-in-progress