End of Project Assessment Report

Title: *Exploring the Integration of Generative AI in Architectural Pedagogy: Impacts on Creativity*

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1. Overview of Project

This project aimed to explore the potential of generative AI (GenAI) in fostering creativity within architectural education through a hands-on, competitive workshop model. Held over three days in January 2025 at the Liverpool School of Architecture (LSA), the event involved 20 students across undergraduate, master's, and PhD levels. Participants engaged in workshops and challenges the using GenAI engines Midjourney and Adobe Firefly to develop, express, and refine architectural ideas. The project sought to introduce AI tools, assess their impact on student creativity, and provide a foundation for further research and curriculum integration.

2. Were the Aims of the Project Satisfied?

Yes, the primary aims of the project were successfully achieved:

- **AI Tool Integration**: Students gained hands-on experience with Midjourney and Adobe Firefly.
- **Creativity Exploration**: Structured challenges allowed students to apply AI creatively in architectural design.
- **Pedagogical Impact**: The project generated insights into the educational value of generative AI, laying the foundation for its broader integration into architectural pedagogy.
- **Research Basis**: Data collected during the project supports ongoing research into prompt readability, creativity assessment, and student engagement.

3. Outcomes of the Proposed Evaluation Method

Full results and in-depth analyses of the project outcomes will be presented in forthcoming **peer-reviewed publications**, which will offer a detailed account of the methods, findings, and implications for architectural pedagogy. The following sections provide a **summary of key outcomes** related to the effectiveness of the AI workshop, the AI drawing competition, and the impact of generative AI tools on student creativity. For full details, readers are referred to the following publications:

- Medel-Vera C. and Britton S. (2025) "*Reflecting on the Potential Integration of Generative AI in Architectural Pedagogy: Insights from a Student Competition*," **Developing Academic Practice.**
- Medel-Vera C., Gates W. *'Deciphering Aesthetics: Exploring the Relationship Between Prompt Readability and AI-Generated Image Aesthetics'* In: Agkathidis, A., Hudert, M., Medel-Vera, C. (Eds), **Architecture in the AI Era for Research, Practice and Pedagogy** (2025). Springer Nature
- Medel-Vera C., Britton S., Gates W. '*An Exploration of the Role of Generative AI in Fostering Creativity in Architectural Learning Environments*' **Computers and Education: Artificial Intelligence** (under review)

These outputs will include extended datasets, creativity scoring frameworks, student feedback analysis, and correlations between prompt readability and design originality.

3.1 Evaluation of the AI Workshop

Pre- and post-workshop surveys were conducted to assess changes in student confidence, understanding, and attitudes toward AI in design. Key findings include:

- A significant increase in students' self-reported ability to use AI tools effectively.
- High engagement levels were observed, with 100% of students choosing Midjourney over Adobe Firefly for all subsequent challenges.
- Open-ended responses highlighted a sense of empowerment and excitement about AI's potential in design.
- The quality of AI-generated outputs in Challenge 1 (designing a residential space) reflected clear application of workshop skills, particularly in prompt construction and visual coherence.

3.2 Evaluation of the AI Drawing Competition

The internal competition was a key engagement tool and marked the culmination of each day's learning.

- **Participation**: All 20 students completed the full series of challenges, with no dropouts.
- **Output Diversity**: Submissions reflected a wide range of architectural styles, spatial strategies, and visual interpretations.
- **Judging and Feedback**: Judges praised the originality, expressiveness, and clarity of several submissions. Their feedback reinforced the effectiveness of AI in facilitating quick iteration and design experimentation.
- **Student Reflections**: Post-competition surveys revealed that the majority of participants found the competition motivating and valuable in developing their creative thinking.

3.3 Assessment of Creativity and Student Learning Outcomes

Creativity was assessed through three core dimensions: **originality**, **aesthetics**, and **correctness**. Submissions were evaluated using a 5-point scale for each dimension by a panel of academic and practitioner judges.

- The highest-scoring submissions successfully balanced imaginative content with architectural logic and visual quality.
- Students with stronger command of prompt engineering tended to score higher in both originality and aesthetics.
- Qualitative feedback indicated that AI tools encouraged exploration beyond students' usual design boundaries.

Alongside this, we began piloting two metrics for future research:

- **Readability scores** for text prompts, to investigate correlations with output quality.

- **Creativity Support Index (CSI)** surveys to evaluate student perceptions of how well the AI tools supported their creative process.

4. To What Extent Did the Project Align to the Hallmarks and Attributes?

The project aligned strongly with several **Liverpool Curriculum Framework (LCF) hallmarks and attributes**:

- **Research-Connected Teaching**: Students engaged in a live research setting, contributing to data collection for ongoing studies on AI in design.
- **Digital Fluency**: Students developed practical competence with generative AI tools and critically reflected on their role in design workflows.
- **Authentic Assessment**: The competition model and output evaluation mimicked real-world architectural critique environments.
- **Active Learning**: The format encouraged peer-to-peer collaboration, experimentation, and self-directed problem-solving.
- **Creativity and Innovation**: At its core, the project promoted exploration of novel ideas through emerging technologies.

5. Conclusion

This project successfully introduced and evaluated the role of generative AI in architectural pedagogy through a carefully designed competition model. Students demonstrated strong engagement, enthusiasm, and creative growth, with AI tools enabling new forms of visual expression and design thinking. The workshop fostered technical skills, peer learning, and critical reflection, which are key attributes in contemporary architectural education.

Importantly, the project also laid the groundwork for a deeper research agenda exploring the relationship between **prompt construction**, **readability**, and **creative output quality**. Future plans include formalising this event as an **annual AI drawing competition at LSA**, and integrating AI creativity modules into the BA Architecture curriculum.

The outcomes of this project highlight the transformative potential of AI in design education, not as a replacement for creativity, but as a powerful partner in its development.