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Classroom Reflections on AI-Assisted Creativity in Design Education

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ABSTRACT

Debates around Artificial Intelligence (AI) and creativity often split between promise and risk. In this reflective paper, we take a practice-first view from two implementations in design/art courses at a Malaysian public university. We focus on two themes that run through public and official discourse: the need for governance/ethics; and for treating AI as a tool, not the source, of creativity. In the first implementation, the introduction of AI lacked clear guardrails, which led to confusion about acceptable prompts, uneven quality, and uncertainty around attribution. In the second, we introduced explicit instructions (when to use, how to use, and what to avoid), process evidence requirements, and assessment that foregrounded decision-making. Across both, we observed consistent benefits aligned with studio needs: faster divergent idea generation, access to large reference sets, rapid prototyping, and more engaging critique. Risks centred on over-reliance and aesthetic homogenisation, which were mitigated through iteration limits, disclosure of what was student-led versus AI-assisted, and targeted AI-literacy supports. The implementations drew on three categories of tools: a large-language-model assistant for brainstorming and critique, text-to-image generators for fast ideation, and assistive image tools for workflow tasks. We distil these lessons into a seven-part framework for implementing AI in design courses (positioning, guardrails, process evidence, assessment, AI literacy, equity supports, governance/ethics). We conclude that AI can enhance student creativity when governance is explicit and authorship remains central. Limitations include a single institution and a short time frame; future work should test the framework across cohorts and newer models.

Introduction

AI and its impact on human creativity are being debated in global discourse. For some, AI is framed as a productivity engine whose creative value hinges on human-first intent and workflow (Baxter, 2024; Granados, 2024; Chow, 2025; Larsen, 2025). For others, AI is framed as a powerful creative accelerator if guided by safeguards and smart workflows provided it is governed due to risks such as bias and misuse (Baten, Bangash, Veera, Ghoshal & Hoque, 2024; Ng & Chow, 2024; Parikh, 2024; Beach, Manoj & Lee, 2025).

This is mirrored in official discourse where AI-creativity is framed as a human-centred governance project, with the creation of policy or ethics to harness new creative potential while enforcing consent, attribution, and remuneration, and preserving cultural-sector integrity; this involves redesigning skills systems so human capabilities lead where AI assists (Organization for Economic Cooperation and Development (OECD), 2021; United Nations Educational, Scientific and Cultural Organization (UNESCO), 2022; World Economic Forum, 2025).

From this global discourse, two themes emerge: (1) guidelines and ethics regarding usage of AI in creative work, and (2) AI needs to be considered as a tool to help with, rather than be the source of, creativity. This reflective piece will delve into a more grounded case study on the debate into whether AI enhances or reduces creativity.

Academic views on AI creativity

Across the literature, the relationship between AI and human creativity is framed less as simple replacement and more in terms of a shifting role between competitor and complement, depending on task stakes and how the tool is positioned (Watkins & Barak-Medina, 2024). Human feedback and direction are not optional add-ons but the mechanism that unlocks AI's creative potential in practice (Maltese, Pelletier & Guichardaz, 2024).

Work on generative art shows that model outputs remain tightly related to human input. The argument is that with a wider range of ideas in prompts, the outputs are judged as more creative, underscoring the continuing value of human ideation (Orwig, Bellaiche, Spooner, Vo, Baig, Ragnhildstveit *et al*., 2024). At the same time, several divergent studies report that AI can meet or exceed average human performance on originality and elaboration, revealing a gap between

measured potential and common perceptions of what AI can do (Koivisto & Grassini, 2023; Hubert, Awa & Zabelina, 2024). Part of that gap seems evaluative, in that humans tend to discount AI-generated art due to its perceived lack of effort, thus rating AI outputs as less creative even when outputs are comparable (Magni, Park & Chao, 2024).

Two practical approaches in the literature offer practical ways to navigate these tensions. First, an 'AI literacy' approach argues that when learners better understand how generative systems function, including their limitations and typical failure modes, they develop more constructive attitudes towards integrating AI into creative tasks (Marrone, Taddeo & Hill, 2022). Second, a 'co-creativity' approach frames generative AI as a collaborator that expands the creative search space (i.e., the range of plausible ideas and design alternatives explored), while humans retain authorship, intent-setting, and evaluative judgement. This co-creative framing has gained traction across design and adjacent fields, including marketing and arts practice (Ameen, Sharma, Tarba, Rao & Chopra, 2022; Wingström, Hautala & Lundman, 2022; Adeleye, 2024; McGuire, De Cremer & Van de Cruys, 2024). These studies show clear benefits for studio work: faster, more varied idea generation, larger reference sets, and quicker prototyping and critique as long as human judgement remains central.

Recent studies concern transparency and human-centred safeguards. For designers to make informed choices, they need clearer windows into model behaviour and limits with reporting frameworks and documentation practices are proposed to support responsible ideation with pre-trained models (Liao, Hansen & Chai, 2020). More broadly, scholars call for a human-centred AI orientation that foregrounds fairness, privacy, trustworthiness, and accountability throughout the design process (Xu, 2024).

Finally, the ethics literature points to concrete governance needs. Data-hungry workflows raise privacy risks that must be anticipated in design education and practice (Rokhshad, Karteva, Chaurasia, Richert, Morch, Tamimi *et al*., 2024). To address this, several studies suggest combining transparency, accountability, and fairness principles with continuous, context-aware evaluation of social and cultural impacts, besides technical audits (Etzioni and Etzioni, 2016; Loi, Wolf, Blomberg, Arar & Brereton, 2019; Brusseau, 2023). Beyond privacy and fairness, recent work emphasises environmental externalities of AI systems, including the energy demand and associated carbon emissions of model training and inference (Strubell, Ganesh & McCallum, 2019; Henderson, Hu, Romoff, Brunskill, Jurafsky & Pineau, 2020) as well as water consumption linked to data-centre operations and electricity generation (Li, Yang, Islam & Ren, 2025).

Context

This paper draws on two previous case studies that implement AI tools in design/art courses at a Malaysian public university. In these studies, we used three categories of AI: a large-language-model assistant for brainstorming and critique, text-to-image generators for rapid ideation, and assistive image tools for workflow acceleration (e.g., background removal and style transfer). Our scope is visual/design creativity in undergraduate studio settings, so the findings speak primarily to ideation, reference building, rapid prototyping, and critique in visual disciplines.

In the first case study (Omran Zailuddin, Nik Harun, Abdul Rahim, Kamaruzaman, Berahim, Harun *et al*., 2024), we introduced text-to-image and assistive tools mainly to open up early ideation. We were not sufficiently prepared: there were no clear guidelines on when to use AI, how to use it, or where to stop. Students were often in the dark, and issues surfaced during use - uneven quality, confusion about acceptable prompts, and uncertainty around crediting and reuse.

In the second study (Nik Harun, Md Syed & Abdullah, 2024), we redesigned the workflow with explicit, step-by-step instructions for each point of AI use: when to bring AI in (concept exploration and quick variations), how to do so (prompt scaffolds, iteration limits, documentation), and what to avoid (wholesale adoption of outputs, style mimicry without justification). Instructor observations across both iterations were consistent: students tend to lean heavily on AI unless reminded otherwise, so we provided constant prompts about ethics, authorship, and the need for discernment.

To keep authorship visible, students were required to explain which parts were their own ideas and which parts came from AI, supported by sketches, boards, and short rationales that showed how they transformed any generated material. Across both implementations, AI functioned as a tool to widen the search space; human judgement, craft, and narrative intent remained the centre of the work and the basis for assessment.

Reflection

Looking across both implementations, our most consistent finding is that AI works best when we treat it as a temporary accelerator that widens the search space, before we reconverge through

human judgement and craft. When we framed the tools this way, students' work moved faster without losing a sense of authorship.

AI clearly sped up idea generation. In shorter time, students produced divergent variations of ideas, even up to 20 distinct directions in minutes, where previous cohorts might stop at three. This reduced the fear of the blank page and encouraged bolder risk-taking. The downside of this was a tendency to stop at the first "good-enough" image. We countered this with a constant reminder to always look for a better image than the "good-enough" one, and if they found one, to repeat the same process before they moved on to the next phase.

The usage of AI tools also made it easy to assemble large reference sets. Instead of a handful of mood images, students could scan broad visual territories and compare dozens of options, side-by-side. This breadth raised the quality of conversations in class: we could ask: "What changes if we shift the reference base from a certain era to another", or "from a specific culture to another, etc.?" To keep this from sliding into aesthetic homogenisation, we required a mixed corpus (AI-generated plus human-curated sources) and keeping a notebook that shows how references were transformed rather than copied.

Next, we saw gains in rapid prototyping. Students iterated silhouettes, palettes, and compositions quickly, then moved into manual sketch-overs and material tests. The most productive rhythm was from digital to analogue to digital. They generated ideas with the help of AI tools, sketched and annotated what to keep or discard, then regenerated ideas with tighter constraints. Where students skipped the middle step, outcomes looked polished but shallow; adding an analogue checkpoint restored intent and improved final coherence.

During critique, we asked students to first discuss and criticise design decisions among themselves. Side-by-side variants sharpened peer feedback, and instructor prompts moved discussion from taste to reasoning. We then had the students use the AI tools to discuss and critique the work. The AI often echoed peers' observations while also introducing new lines of critique. The conversational nature of the tools made the sessions more engaging and helped sustain focused, evidence-based discussion.

Across both studies, we also learned what to guard against. Students tend to over-rely on model outputs unless we make authorship visible. Clear rules helped: no direct imports without

documented transformation; iteration limits to discourage aimless sampling; and process grading that weights decision-making over surface polish. Most effective was a simple disclosure: students had to explain which parts were their ideas and which parts came from AI, supported by sketches, boards, and short memos. This small step raised the bar on reflection and reduced uncritical adoption.

It is also important to note that our own preparation mattered. In the first run, the absence of precise guidance left students guessing while in the second, explicit instructions (when to use, how to use, what to avoid) produced steadier results and fewer ethical ambiguities. The practical lesson is pedagogical, not technical - the tools amplify whatever structure we give them. With clear scaffolds and visible checkpoints, AI widened possibilities, accelerated iteration, and deepened critique while keeping authorship and intent where they belong, which is with the student.

Besides that, our findings come from a single institution and short time frame, with tools available in early 2024. Results may vary with newer models and different cohorts. Student self-reports and instructor observations may also introduce bias; future work could include blinded artifact ratings.

Proposed Framework

Based on the reflection of the case studies, we proposed this framework:

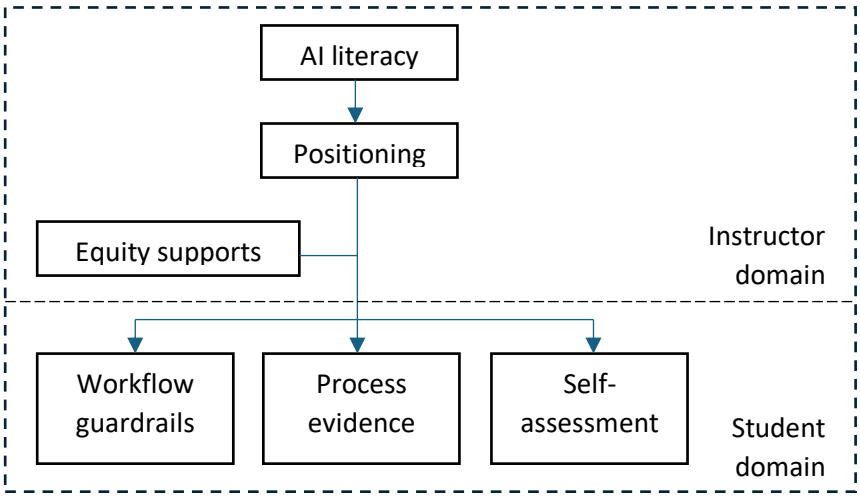

Figure 1: *Framework for implementing AI in design courses*

1. *AI literacy*
   Teach limits, biases, and data sources - to be done during course's first session; and practise "bias reads" during critique to normalise critical use.

2. *Positioning*
   Inform student to treat AI as an accelerator for divergent ideation, reference building, rapid prototyping, and critique; make human authorship explicit in briefs and rubrics - to be done during the whole course.
3. *Equity supports*
   Provide tutorials and low-stakes, time-boxed practice tasks so uneven technical skills do not widen gaps.
4. *Workflow guardrails*
   Specify when to use AI (early exploration), how (prompt scaffolds, iteration caps), and what to avoid (untransformed imports, uncredited style mimicry).
5. *Process evidence*
   Require short memos, sketch-overs, and annotated boards showing what is student led vs AI assisted.
6. *Self-assessment*
   Weight decision-making and transformation over surface polish; include originality and bias-awareness checks in critique.

Conclusion

This paper supports two main themes: AI use in higher education must be governed ethically, and AI should be treated as a tool that supports, rather than replaces, human creativity. From the standpoint of an instructor, the usage of AI needs to be governed, which, in a higher education curriculum, needs to be systematically designed and implemented with care. The need to instil the importance of ethics in AI usage into students should be the main focus of curriculum design.

As to answering the question of whether AI enhances or reduces creativity, this paper reflects the view that AI can be one of the tools to enhance creativity by speeding up the process of idea generation through providing divergent idea variations, rapid prototyping, and critique. From an educational standpoint, it is important for students to maintain critical awareness that the genesis of their ideas is their own and they should regularly engage in self-assessment to guard against excessive reliance on AI outputs.

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