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Artificial Intelligence as Co-Creator: Redefining Creative Identity in Design Education

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Abstract: This study examines how generative artificial intelligence (AI) reshapes creative identity in design education. Drawing on post-humanist and network-based theories, it frames AI as a cognitive collaborator in ideation and authorship. Mixed-methods data reveal student anxiety and stylistic confusion, contrasted with designers' adaptive strategies. The AI–Cognition–Identity framework supports curricula that promote reflective, ethical, and epistemically informed AI-integrated pedagogy.

Keywords: Generative AI; Design education; Creative identity; Authorship; Post-humanism; Actor-Network Theory; Aesthetic judgment; Ethical reasoning; Mixed methods; Pedagogy

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1. Introduction

Generative artificial intelligence (AI) tools such as Midjourney and DALL·E are no longer peripheral to design practice. They have become embedded in creative workflows, altering how ideas are generated, evaluated, and realized. More than accelerating production, these systems provoke fundamental shifts in how designers understand authorship, agency, and creative identity.

This study investigates how generative AI influences creative identity formation in design education. It examines a broader shift from authorship as execution to authorship as curatorial negotiation within technologically mediated environments. In this context, creative identity refers to the evolving relationship among conceptual intent, stylistic coherence, and perceived authorship, shaped through interactions between humans and AI. Unlike traditional studio pedagogy, which emphasizes reflective practice through intentional decision-making and iterative refinement [1], AI-mediated workflows introduce ambiguity, distributed agency, and algorithmic influence.

This inquiry asks whether AI extends creative agency or destabilizes identity, particularly in educational settings where conceptual frameworks are still developing. These changes raise urgent questions not only about what AI can generate but also about how it reshapes cognition, aesthetic judgment, and self-perception in design

learning.

Three research questions guide this study:

(1) How do students conceptualize the role of generative AI in design education?

(2) In what ways does AI affect students' aesthetic judgment, authorship, and identity?

(3) How do early-career designers navigate AI in applied settings?

By comparing student and practitioner perspectives, the study identifies tensions between technical functionality and reflective authorship. It introduces the AI–Cognition–Identity model as a pedagogical framework for fostering algorithmic literacy, ethical reasoning, and intentional creative identity in design education.

2. Theoretical background

2.1. Theoretical framework

This study draws on three intersecting frameworks: Post-humanism, Actor-Network Theory (ANT), and Distributed Cognition. Together, they conceptualize generative AI as an active agent in creative processes. These perspectives challenge anthropocentric models by emphasizing that cognition, authorship, and identity are co-constructed through interactions between humans and technological systems. Haraway's cyborg metaphor and Hayles's notion of decentralized identity suggest that creative agency is not confined to the individual but emerges across networks of human and non-human actors [2,3]. Actor-Network Theory builds on this idea by positioning AI as a non-human actant that influences decisions and outcomes in meaningful ways [4]. In this study, these theories inform how authorship and agency are interpreted in AI-mediated design processes.

2.2. Generative AI in design contexts

Platforms such as Midjourney and DALL·E now support rapid ideation and image generation in design workflows. Zhou *et al.* argued that these tools reconfigure early-stage design thinking by positioning AI as a conceptual partner [5]. Yet, Schönau-Fog *et al.* observed that academic programs often prioritize output over epistemic reflection, leaving students unaware of how AI mediates originality and creative agency [6].

2.3. Cognitive mediation and authorship complexity

To further understand AI's epistemic role, this study draws on Distributed Cognition Theory, which posits that cognition unfolds through interaction with tools and environments [7]. In design, this suggests that thinking is not internal but co-constructed. Candy and Edmonds emphasized the importance of situated engagement, while Hayles framed identity and authorship as emergent and relational [3,8]. Zhou *et al.* similarly highlighted how designers now curate and contextualize AI outputs rather than originate every element, shifting authorship from execution to interpretive agency [5].

2.4. Affective and ethical tensions

Despite functional benefits, students often report discomfort with AI's opaque logic and ambiguous authorship boundaries. Concerns about originality, cognitive detachment, and ownership reflect what Lu and Chan identified as affective tensions that are not purely technical, but also epistemological and emotional [9]. These anxieties signal the need for reflective frameworks that help users navigate hybrid authorship and cognitive collaboration.

3. Methodology

This study adopted a mixed-methods design to examine how generative AI shapes cognition, authorship, and identity in design education. Grounded in an interpretivist paradigm, the research focused on how meaning emerges through interactions between human users and AI systems, moving beyond tool functionality to explore epistemic, aesthetic, and ethical dimensions of creative practice.

Participants were purposely selected from East Asian and North American design institutions. The quantitative phase involved 13 undergraduate and graduate students specializing in fashion and visual communication design, with national backgrounds including China, the U.S., and the U.K. Their focus areas spanned womenswear, branding, packaging, and digital design. The qualitative phase included semi-structured interviews with seven early-career designers (1–3 years post-graduation), including both independent brand founders and in-house designers, all of whom had experience using AI tools such as Midjourney and DALL·E.

The survey included both Likert-scale and open-ended items, addressing four areas: functional cognition (ideation with AI), aesthetic trust (confidence in outputs), creative identity (views on authorship), and usage intention (future AI adoption). Interviews (approximately 30 minutes) explored participants' AI adoption, integration strategies, stylistic control, and perspectives on authorship and ethics.

Survey results were summarized using descriptive statistics. Interview transcripts were thematically coded using Braun and Clarke's six-phase method [10]. Analytical interpretation drew on several theoretical frameworks: decentralized identity [3] and reflective authorship [1] for authorship; the Technology Acceptance Model [11] and AI as a cognitive collaborator [5] for stylistic control; and distributed cognition [7] alongside Actor-Network Theory [4] for human-AI interaction.

All participants provided informed consent, and personal data were anonymized. The combined approach enabled comparative analysis of student and designer experiences and informed the development of the AI–Cognition–Identity model presented in the next section.

4. Findings

This section presents findings from student surveys and designer interviews, focusing on three themes: cognitive engagement, authorship perception, and identity formation. These themes were identified through thematic analysis and interpreted using the study's theoretical frameworks.

While students valued AI's efficiency, they often lacked strategies to guide its use critically. Designers demonstrated more intentional workflows and ethical awareness. The sections that follow compare these patterns, highlighting contrasts in agency, authorship, and epistemic confidence.

4.1. Cognitive engagement

Students widely acknowledged AI's utility in accelerating ideation. Student 6 stated, "AI really saves a lot of time," and Student 3 praised its ability to "produce outputs quickly." However, their responses rarely indicated awareness of how algorithms shape design directions. For example, Student 11 asked, "How do I know whether AI images are plagiarized?", revealing uncertainty about training data, authorship, and ownership. Most students treated AI as a task-oriented assistant rather than a thinking partner.

Designers adopted more intentional approaches. Designer 5 used AI to explore complex visual themes, while Designer 3 described revising prompts and post-editing outputs as part of an iterative process. Unexpected results were seen not as failures but as opportunities for discovery. These practices reflect constructivist learning, where knowledge evolves through experimentation and reflective adaptation.

Designer 1 noted that AI sometimes redirected entire projects by introducing unfamiliar visual possibilities. This aligns with Actor-Network Theory, which sees agency as emerging through relations between human and non-human actors. In this context, AI contributes to ideation and shapes meaning alongside the designer.

4.2. Aesthetic control and authorship perception

Cognitive and stylistic gaps in student responses highlight the need for metacognitive scaffolding and aesthetic intentionality. Many expressed frustration with AI's failure to reflect their vision, stating, "AI can't express my style" or "Even after tweaking, it still wasn't what I had in mind." These comments reflect reactive engagement, with few using reference images or structured prompting to refine outputs. Designers, by contrast, applied more systematic methods. Designer 4 manually edited over-rendered images, while Designer 5 curated references and iteratively adjusted prompts to sustain stylistic coherence. These practices demonstrate deliberate control and stronger creative authorship.

Students also showed confusion around epistemic ownership. One remarked, "I think the author is me, and also the AI, and also the AI developers," while another noted, "It's hard to see my own marks in it." Such ambiguity contrasts with designers' clearer authorial stances. Designer 6 stated, "I'm still leading the creation," and Designer 2 tailored AI-use disclosure to context. These responses reflect Nelson and Stolterman's notion of reflective authorship, centered on intentionality, selection, and ethical judgment [1].

Students' uncertainty echoes Hayles's theory of decentralized identity, where authorship is distributed across human and non-human agents [3]. Lacking curricular guidance, students often default to binary thinking, underscoring the need to cultivate nuanced understandings of shared authorship in post-human learning environments.

4.3. Identity anxiety and epistemic gaps

Students frequently expressed discomfort with AI's impact on their creative identity. Student 12 admitted feeling disconnected from increasingly autonomous outputs, while Student 17 questioned the originality of AI-generated content. These comments reveal both emotional unease and an epistemological gap in negotiating hybrid authorship. This reflects Hayles's theory of post-human subjectivity, where identity is distributed across human and machine assemblages [3].

In contrast, designers demonstrated emerging professional identities that incorporated AI as a co-creator. Designer 3 described prompt selection and output refinement as core authorial practices. Designer 7 emphasized context-sensitive disclosure, explaining that ethical transparency depended on audience and project. These approaches align with Lu and Chan's findings on ethical fluency in design and with Nelson and Stolterman's concept of reflective authorship, which emphasizes intentionality and contextual judgment over technical execution [1].

Students' ethical concerns, from fears of creative devaluation to uncertainty about ownership, point to the absence of structured reflection in current curricula. Most were unsure how to assess authorship or communicate AI use transparently. Designers, by comparison, exercised clearer judgment and made strategic disclosure choices. These differences suggest a developmental progression shaped by reflective experience, professional engagement, and institutional guidance.

5. Discussion

Drawing from the patterns identified in the above section, this discussion uses the AI–Cognition–Identity model

to synthesize implications for pedagogy, with reference to the theoretical frameworks established earlier. This section interprets findings through the AI–Cognition–Identity model (see **Figure 1**), which compares student and designer trajectories across cognition, authorship, and ethics. It examines three domains: cognitive and aesthetic engagement, authorship and identity, and ethical reasoning. It concludes with pedagogical implications for AI-integrated design education.

[Student Pathway]	[Designer Pathway]
Functional Acceptance "It saves time."	Conceptual Integration "I use AI to generate early sketches and ideas."
Style Disorientation "It doesn't look like mine." "Feels hollow."	Style Regulation "I fine-tune prompts and use reference images."
Blurred Creative Ownership "Is it still my design?"	Creative Authority Assertion "I direct and curate-it's my work."
Ethical & Career Anxiety "Will clients prefer AI over human designers?"	Strategic Ethical Navigation "Whether I disclose AI use depends on context."

Figure 1. Student and designer pathways in engaging with generative AI

5.1. Cognitive engagement

Students acknowledged AI's utility in early ideation. One noted it "opens up design directions," echoing Davis's concept of perceived usefulness [11]. However, most showed limited reflection. One admitted to using outputs "as is," with minimal iteration or critical judgment. Few applied metacognitive strategies to guide or evaluate AI's role.

In contrast, designers employed iterative workflows, including prompt development, manual refinement, and stylistic calibration. One emphasized curating outputs within broader conceptual systems. These methods align with Candy and Edmonds's view that experienced creators embed tools in reflective cycles [8], and with Hollan *et al.*'s model of distributed cognition across people, tools, and environments [7]. AI thus aids ideation while reshaping cognition.

Designer 1 described how unfamiliar AI outputs redirected an entire project, opening new conceptual paths. This shift illustrates Latour's notion of non-human actants, entities that, although not sentient, influence outcomes through networked agency [4]. Generative systems co-construct meaning and affect design decisions.

Stylistic control further distinguishes students and designers. Students often expressed frustration with AI's failure to match their vision, rarely refining prompts or using reference calibration. Designers used deliberate techniques. One stated, "AI helps organize ideas, but the final decisions are mine," while another emphasized post-editing. These practices reflect Zhou, Park, and Hernández's concept of cognitive collaboration, in which designers retain agency by shaping and contextualizing AI outputs [5].

5.2. Ethical reasoning

Students expressed significant anxiety about authorship. One questioned whether prompt-based creation constituted authorship, while another suggested the creator could be "me, or the AI, or even the developers." These responses reflect what Hayles described as fragmented identity within posthuman systems [3]. Without

conceptual tools to navigate distributed authorship, students struggled to articulate their role in hybrid production.

Designers, by contrast, presented a clearer perspective. One argued that prompt selection and iterative decision-making reflect authorial control, aligning with Manovich's curatorial authorship [12] and Nelson and Stolterman's reflective practice [1]. Another affirmed, "I lead the creation," emphasizing agency over technical authorship.

Yet curatorial authorship carries risks. As Manovich noted, over-reliance on system defaults can erode critical distance, embedding algorithmic bias into design logic [12]. Reflective authorship thus demands not only decision-making but also awareness of how those decisions are shaped by machine systems.

Students' discomfort underscores a broader theoretical concern: the need to reframe authorship as negotiated identity rather than fixed position. Hayles's theory of decentralized identity is relevant here [3], as post-human systems distribute authorship across human and non-human agents. While designers began to embrace this hybridity, students often retained binary views, assigning authorship either entirely to themselves or to AI. This resistance reflects a lack of epistemic ownership: the ability to claim, justify, and ethically account for creative decisions in technologically mediated environments. These practices reflect Candy and Edmonds's process-based ethics, where moral agency is enacted through situated design choices [8].

5.3. Identity formation

Ethical concerns surfaced frequently in student responses but often lacked clarity. Student 11 questioned the origin of AI images, and Student 2 worried that AI-assisted work might appear inauthentic. These concerns were rarely linked to broader frameworks of accountability or disclosure. Student 6 expressed anxiety that AI would devalue foundational design skills, reflecting a perceived conflict between tradition and innovation.

Designers articulated more nuanced ethical stances. Designer 2 described disclosing AI involvement based on project type and audience, while Designer 7 emphasized context-specific communication. These practices reflect Lu and Chan's finding that ethical fluency evolves through practice and reflection [9]. Rather than viewing AI as ethically neutral or threatening, designers regarded it as a tool whose use could be explained and negotiated.

Post-humanism reframes ethics as distributed responsibility. Haraway and Hayles emphasized that ethical action emerges from situated engagement across networks of human and non-human agents [2,3]. Similarly, Candy and Edmonds argued that ethics is embodied through process, not imposed externally [8]. Hollan *et al.* supported this by conceptualizing ethical reasoning as embedded within interactional contexts [7]. These models suggest ethical literacy must be cultivated alongside technical training, integrated throughout the design process rather than treated as peripheral.

5.4. Pedagogical implications

Future curricula may benefit from critical pedagogy [13], encouraging students to examine the sociotechnical conditions underlying AI systems. These findings underscore the need to reform AI-integrated design education through three priorities.

First, curricula should develop algorithmic understanding and authorship literacy. Students must grasp how AI tools work, what data they use, and how outputs are formed. This aligns with distributed cognition theory, which emphasizes knowledge construction through human-machine interaction [7]. Literacy can be fostered through prompt deconstruction, image comparison, and model critique.

Second, authorship and identity require reframing. Instead of focusing on execution, students should practice reflective authorship using co-creation logs, authorship mapping, and disclosure strategies that highlight conceptual intent. This reflects Hayles's view of decentralized authorship, where creativity emerges from human–AI assemblages [3].

Third, ethical reasoning must be integrated across the design process. Studio courses should use simulations, case studies, and reflective writing to help students articulate ethical considerations in AI-assisted decisions. As Lu and Chan argued, such practices promote critical awareness and support socially responsible design roles [9].

These strategies position the AI–Cognition–Identity model as a foundation for shifting design education toward cognitive agency, curatorial authorship, and ethical judgment in AI-mediated creativity.

6. Conclusion

This study introduced the AI–Cognition–Identity framework to examine how generative AI influences cognition, authorship, and aesthetic judgment in design education. Findings show that while students valued AI for ideation, they struggled with authorship, style, and ethics. Designers demonstrated more intentional integration and greater creative control.

These contrasts highlight the need for design education to move beyond technical skills and foster critical judgment. As creative practice shifts toward curatorial synthesis, curricula must embed reflection, authorship theory, and ethical reasoning. The AI–Cognition–Identity model provides a foundation for such pedagogical reform.

However, this study is limited by a small sample and contextual focus. Future research should explore cross-cultural perspectives and conduct longitudinal or experimental studies to assess identity formation and test curricular interventions in AI-integrated design education.

Disclosure statement

The author declares no conflict of interest.

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