

## **Integrating AIGC Into Art and Design Education: From Self-Expression to Aesthetic Literacy**

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### **Abstract**

Ideas shape the material world, just as the material world creates conditions for personal expression. With the aid of contemporary tools and digital media, especially AIGC platforms such as Midjourney, individuals are increasingly able to visualize and articulate their unconscious aesthetic tendencies. These technologies offer unprecedented opportunities to transform abstract inner concepts into tangible visual forms—moving from metaphor to explicitness, from internalized perception to externalized expression. As David Holz suggested, Midjourney may be seen as a derivative of human thought, echoing the ancient Chinese principle in The I-Ching of “establishing images to express meaning.” This process illustrates how values and emotions can be more intuitively conveyed through image-based expressions than through language alone. However, the educational value of this process depends on more than just technological accessibility. While AIGC tools can democratize visual creation, they do not inherently foster aesthetic judgment or critical design thinking. Therefore, the role of design educators and cultural producers remains essential. Through guided interaction, curated prompts, and critical reflection, educators can help learners move beyond superficial image generation toward meaningful aesthetic growth. In this way, AIGC serves not only as a creative tool, but also as a pedagogical catalyst—bridging technology and tradition, expression and interpretation, imagination and intention.

*Keywords:* design education, aesthetic literacy, human–AI interaction, image generation, symbolic interpretation

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## Introduction

In an era marked by rapid technological advancement and pressing environmental challenges, the call for sustainable education has become increasingly urgent. UNESCO's Education for Sustainable Development (ESD) framework emphasizes the need for pedagogical approaches that not only foster creativity and critical thinking but also minimize ecological footprints while promoting social inclusivity (UNESCO, 2020).

With the rapid development of Artificial Intelligence Generated Content (AIGC), image generation technologies such as Midjourney have increasingly entered art and design education, reshaping how students visualize ideas and articulate creative intentions. While existing discussions often focus on technical efficiency or the originality of AI-generated images, less attention has been paid to AIGC as a pedagogical medium and its implications for learning processes in art and design education.

This paper approaches AIGC not merely as a technological innovation, but as an educational tool embedded within teaching and learning contexts. Specifically, it examines how AIGC-mediated image generation influences students' processes of self-expression and supports the gradual cultivation of aesthetic literacy. Rather than positioning AIGC as an autonomous creative agent, this study emphasizes its role as an intermediary that translates internal intentions into external visual forms, thereby enabling reflection, interpretation, and aesthetic understanding.

Drawing on the concept of "establishing images to express meaning" of the I Ching, this study situates AIGC within a broader philosophical and cognitive framework. In this perspective, images function not as final aesthetic outcomes, but as symbolic structures that mediate between subjective intention and shared understanding. When integrated into art and design education, AIGC extends this traditional logic by accelerating the visualization process and expanding the range of possible representations, while simultaneously raising new pedagogical challenges.

Within educational settings, the use of AIGC requires careful guidance to prevent superficial image production and to foster deeper aesthetic engagement. This paper argues that meaningful learning does not arise from the automation of creativity, but from the reflective interaction between students, images, and instructional mediation. By analyzing human-AI interaction through cognitive, symbolic, and aesthetic dimensions, this study proposes a theoretical framework for understanding how AIGC can support a transition from self-expression to aesthetic literacy in art and design education.

### **A Conceptual Review of Midjourney in Interactive Design Practices**

Human perception is inherently sensitive to familiarity, with individuals forming stronger emotional connections to objects that visually resemble known forms or trigger latent memories (Ganzach & Schul, 1995). Extensive research demonstrates a robust cognitive link between object shapes and the brain's mechanisms for perception and memory retrieval. When exposed to novel visual stimuli, perception is shaped and mediated by stored representations of similar forms within one's memory.

Thus, to foster comprehension and acceptance, visual elements must be contextualized and integrated with the viewer's historical knowledge and lived experiences.

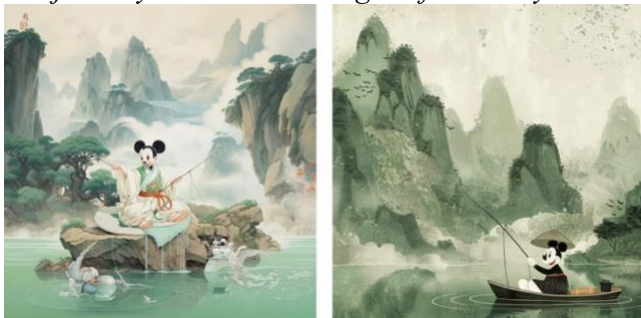
Recent advancements in AI-driven image generation have enabled the synthesis of societal aesthetic preferences by aggregating collective subconscious visual cues from intuitive perspectives (Zeng, 2023). Such AI-generated visual elements, characterized by broad social resonance, function as symbolic triggers capable of evoking subconscious memories and associations. Despite expanding worldviews driven by rapid socio-economic changes, a persistent dissonance exists between individuals' internalized visions and external realities, exacerbated by uneven access to information (Fukuyama, 2018). While mass media such as television and gaming introduce new perspectives, these narratives are often externally imposed rather than autonomously constructed.

With the evolution of AI technologies, users are increasingly empowered to cultivate personalized visual perspectives, positioning AI as a co-creator in the generative process. As Liao et al. (2020, p. 27) observe, AI tools “provide inspiration, broaden design scope, or prompt design actions through suggested text or images.” Consequently, AI-generated imagery serves not only as an external catalyst for creativity across varying levels of design expertise but also as a source of stochastic creative stimuli (Beaney, 2005). Additionally, AI integration substantially reduces the temporal and resource demands traditionally associated with design practice.

Nevertheless, generating novel visual inputs to inspire creativity remains a challenge, especially within nascent or underexplored design fields where existing datasets are limited or unrepresentative. This limitation undermines the efficacy of traditional methods dependent on prior knowledge. For instance, by utilizing Midjourney's prompt function with keywords such as “Chinese landscape painting” combined with “Mickey Mouse,” and specifying straightforward requests like “Mickey Mouse sitting in a Chinese landscape painting” or “Mickey Mouse fishing in a Chinese landscape painting,” the generated images (Figure 1) exemplify the AI's capacity for blending disparate cultural symbols.

**Figure 1**

*Midjourney-Generated Images of “Mickey Mouse in a Chinese Painting”*



Source: Author's own creation

### ***Interpreting Image, Intention, and Meaning Through the I Ching and Midjourney***

Throughout history, individual behavior has been evaluated through societal value judgments, which themselves rapidly shift due to widespread patterns of imitation. From a social standpoint, the values individuals pursue can only be understood relative to prevailing norms of their time. In ancient societies, social choices were heavily constrained, strongly shaping individuals' inner thoughts and self-perceptions. However, with accelerating social and economic change, perspectives have broadened significantly, though a notable gap remains between individuals' core self-vision and their external realities.

Concepts shape the material world, while the material world conditions individual expression. Today, access to contemporary tools and media enables unconscious tendencies to find expression, suggesting that conceptual recognition in the mind is not mere abstraction but can be externalized into tangible forms. This marks a shift from metaphorical internalization toward revelatory externalization. While artists concretely manifest ideas in galleries and exhibitions, an important question arises: can ordinary people accurately convey consciousness through contemporary tools and media?

Insights from modern linguistic philosophy suggest that the issue is not whether language perfectly mirrors reality, but how language interprets and engages with existence. Whether we consider “phenomena” or “symbols,” their relation to the “truth of existence” gains renewed significance within this interpretive framework. Moreover, in interpersonal communication, information quality is relational; unilateral expression alone does not enhance meaning. Similarly, a process of mutual understanding unfolds between individuals and artificial intelligence.

### Figure 2

*Analysis and Interpretation of the Chinese Character “Middle Way”*

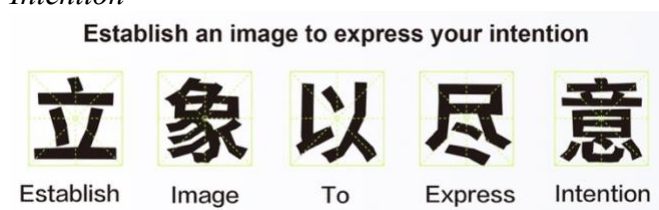


Source: Author’s own creation

Upon release, Midjourney faced resistance from some designers, notably regarding copyright in commercial use—a concern beyond the scope here. From a social perspective, human communication today operates as an integrated system involving dynamic interactions between individuals and objects, fostering novel ideas. Midjourney serves as a gateway for public participation, offering a platform to unlock creativity and generate fresh concepts through playful interaction. These emergent ideas can stimulate improved performance in other domains. The core challenge Midjourney addresses for the public is translating internal ideas into visual language.

### Figure 3

*Analysis and Interpretation of the Chinese Phrase – Establish an Image to Express Your Intention*



Source: Author’s own creation

The 6th World Artificial Intelligence Conference (WAIC), held in Shanghai from July 6th–8th, 2023, themed “Generating the Future with Intelligent Connections” (Luo, 2023), featured a

keynote by David Holtz, founder of Midjourney. Holtz expressed deep appreciation for classical Chinese literature and revealed that “Midjourney” reflects the concept of the “middle way” from the I Ching (The Book of Changes) (see Figure 2).

Midjourney’s design logic aligns with the I Ching’s principle of “establishing an image to express intention” (see Figure 3). When assigning value, conveying “intention” through “image” is essential. Whether an image can fully encapsulate meaning—akin to language’s inherent limits—remains a question for thoughtful reflection.

### **Research Objectives**

To analyze how AIGC platforms’ design and algorithms influence students’ creative behaviors and the visual outcomes they produce.

To investigate the dual nature of AI image generation as both a catalyst for creative freedom and a potential constraint within educational contexts.

To explore the process of self-discovery and identity formation through human-AI interaction during visual creation.

To examine how educators and cultural producers shape practices and discourses around AI-assisted creativity, aiming to enhance sustainable education and student innovation.

### **Discussion**

On May 8, 2023, EDUCAUSE, the official website of the American Association for Higher Education, published The 2023 EDUCAUSE Horizon Report: Teaching and Learning Edition (*Horizon Report*, 2023). This report highlights key technologies and pedagogical practices poised to significantly influence higher education, with a special emphasis on emerging and breakthrough artificial intelligence technologies aimed at supporting students’ sense of belonging and connectedness. A strong sense of belonging is crucial for students’ social development, learning efficacy, and overall academic success. Students seek seamless, on-demand connections to people, services, and applications; maintaining this ongoing connectivity fosters relationships and engenders feelings of value and security.

The term “artificial intelligence” was first coined in 1955 to describe computer-assisted work. Over the past several decades, AI has evolved into a distinct discipline capable of perceiving, learning, reasoning akin to the human brain, understanding natural language, and generating visual information. Despite its revolutionary technological nature, AI remains fundamentally rooted in computational methods. Designers today must not only understand and train algorithmic models but also infuse them with creativity through collaborative, interdisciplinary efforts.

The core principle behind AI-generated imagery involves converting paintings and visual works into digital data and training computers with deep learning algorithms to produce analogous creations. As designers and AI systems increasingly inform each other’s cognitive processes and problem-solving strategies, the emergence of more innovative works attuned to contemporary societal issues is anticipated (Bonnardel & Zenasni, 2010). It is widely recognized that AI-generated products often reflect an average societal value—a composite of

keywords representing the zeitgeist, behavioral motives, and personal aspirations—yet these keywords require careful refinement to accurately convey deeper cultural significance.

Different keywords correspond to diverse social perspectives and economic frameworks (Brand & Rocchi, 2011), especially in light of systemic challenges such as financial crises, environmental degradation, social inequality, and refugee crises, which have become prominent global concerns communicated through visual media. This growing awareness has substantially influenced economic and design paradigms, broadening design's scope to encompass systemic societal views.

Accordingly, it is imperative for designers and educators to explore ways to assist the public in expressing themselves creatively and interactively through platforms like Midjourney, enabling visualization of the self.

Traditionally, transforming abstract thoughts into visual language has been the province of artists and trained designers, who develop rich associative capacities through systematic education and practice. For individuals lacking such training, Midjourney offers a novel means to translate natural language prompts into images, lowering the barrier to visual imagination and framing the creative process as an interactive experience conducive to self-exploration. I define this experience as one that satisfies and surprises the mental state, with its underlying behavioral logic centered on the discovery and acknowledgment of one's inner self.

### **Cognitive Interactivity and Symbolic Encoding in Human–AI Design Learning**

Similar to the relational nature of information in The I-Ching, where unilateral output fails to enhance value, effective communication requires mutual understanding between individuals and artificial intelligence. The inputs provided to AI constitute the user's encoding process—an internal operation whereby symbols are formed in the sender's mind before being transmitted through channels to recipients. Creating these encoded symbols demands meticulous care, relying not only on the user's foundational psychological representations but also on prior knowledge transmitted through symbolic forms to AI. These factors critically determine whether AI can accurately decode in alignment with the user's intent.

The communication model embedded in The I-Ching epitomizes interactivity, especially human interaction conceived as a holistic, cyclical process (Chen, 2009). Communication-driven changes form continuous cycles, where yin and yang perpetually interact and influence each other to propel progress. In other words, creativity emerges only through ongoing interaction (Chen, 2009).

In visual communication design and media studies, scholars emphasize that communication between designers and audiences is neither unidirectional nor linear. Effective communication requires attention to receiver feedback and reciprocal connections (Wiemann, 1977). Communication must be bidirectional, fostering an interactive relationship between sender and receiver—particularly relevant in today's mass communication era where both parties hold agency. Correspondingly, attention is growing toward how transmitters engage effectively with AI software during the creative mapping process.

The design thinking process—empathy, definition, ideation, prototyping, and testing (Meinel et al., 2011)—corresponds closely to the designer's prior knowledge, imagination, and visual perception, as well as the recipient's mental representation and image formation. Engaging in

design thinking helps transmitters execute accurate encoding, facilitating precise decoding by recipients.

Coherent mental representations primarily arise from prior knowledge, filling informational gaps and linking fragmented data. Conversely, lack of relevant knowledge causes textual input to be processed as fragmented and isolated. In contemporary society, individuals resonate with “imagery” produced by artists, where sensory impressions engage intellectual faculties to compare, relate, or distinguish images. This cognitive process transforms sensory data into transcendental a priori knowledge (Kant, 1999), which subsequently guides lived experiences and connects ensuing “imagery.” Viewers lacking sufficient transcendental knowledge may struggle to form coherent psychological models of depicted scenes, impeding understanding.

Imagination is a cognitive faculty arising from interplay between consciousness and subconsciousness, comprising a succession of concrete images connected by intuitive association and analogy, with meaning attributed through thought. Though images and symbols are inert, they serve as media for thought. Since imagery is tangible, imaginative thinking often involves concrete associations. This cognitive mode is innate but can be cultivated through training. Thus, the general public—even without formal design or creative training—is not devoid of imagination. However, they may struggle to process stored information and translate it into design language suitable for Midjourney input without external guidance. Consequently, generated images may diverge from the creator’s original mental conception (Zhong & Gao, 2008).

According to the construction-integration model (van Dijk & Kintsch, 1983), when individuals attempt to depict a specific scene, they first form a surface mental representation based on textual cues. The brain then processes this to generate semantic content, constructing a coherent and complete mental image. Though this image exists internally, it corresponds to objective reality and is accessible to conscious perception. When viewers possess sufficient prior knowledge, their mental images are rich and comprehensive; lacking experience leads to incomplete or fragmented visualization. This principle applies similarly to AI-assisted interactive image generation.

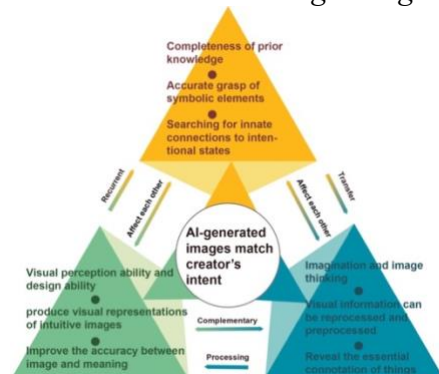
Visual images produced through artificial intelligence are typically conceptualized and crafted by designers, embodying a high degree of generality and logical coherence in representing objective concepts. These images synthesize visual elements consistent with an informational context, empowering viewers to form immediate, intuitive mental representations during their visual engagement. Visual thinking, a core mode of artistic cognition, entails the generation of unique imagery grounded in prototypes drawn from objective reality, filtered through personal knowledge and experience. Such imagery exhibits strong generality and logical structure in conceptual depiction, revealing inherent cognitive regularities within the viewer’s mind. As a cognitive interplay between consciousness and subconsciousness, visual thinking equips information graphic designers to construct visually unified elements that fit coherently within informational contexts, thus facilitating intuitive visual comprehension during viewing (Wang, 2018). This visualization represents a distinct psychological representation of objects not directly present before the viewer’s eyes—it reconstructs perceptual processes by reprocessing memory-stored information, independent of immediate external stimuli (Zhong & Gao, 2008).

Therefore, AI-generated visual images depend substantially on the creator’s imaginative capacity and perceptual acuity during the design phase. When both imagination and design

skills are well developed, the alignment between symbolic representation and intended meaning is correspondingly enhanced (see Figure 4).

**Figure 4**

*How AI-Generated Images Align With the Creator's Original Intention*



Source: Author's own creation

## The Evolving Role of Designers: Enabling Public Self-Directed Adaptive Learning via AI Tools

With rapid technological advancements and growing user engagement, traditional, slow, localized, and incremental design practices have largely been supplanted by fast-paced social innovation systems. Similar to maker culture—which is driven by self-directed learning and creativity—this transformation marks a critical intersection where design education systems collide with broader social practices. However, whether these new models can truly fulfill their potential depends on proper guidance from the producers of design culture.

From both aesthetic and technical standpoints, design is a complex systemic engineering process requiring solid theoretical foundations, accumulated practical experience, and constructive mentorship. The accelerating pace of societal and cultural change necessitates that designers continually update their skills and adapt to emerging contexts.

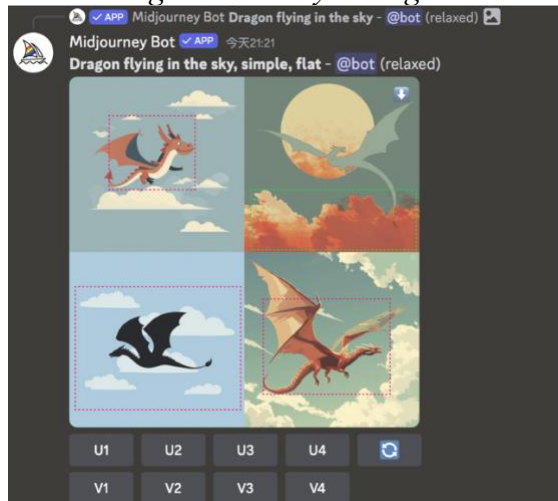
Given the still-uncertain applications of artificial intelligence in design thinking (Cautela et al., 2019), designers can no longer rely solely on catering to consumer needs. Instead, they must embrace their role as “shapers” of society, transitioning from user-centered to society-centered design paradigms (Tromp et al., 2011). In terms of harnessing AI's value, designers' involvement can supplement logical systems by providing professional insight to those without formal design training, facilitating self-exploration through hands-on practice. This shift moves the focus from rigid “patterns” or frameworks toward flexible “guidance” and divergent thinking.

Artificial intelligence has accelerated innovation and transformed design production modes while redefining the future skill sets designers must cultivate. The early integration of intelligent, automated processes in design is not intended to replace human creativity, but rather to empower designers to extract deeper insights from existing data, optimize resource use, and enhance their comprehension of design challenges (Camburn et al., 2020). Professional designers, with their mastery of style and composition, can guide AI-generated visuals and help non-experts refine their conceptual thinking.

For instance, I used Midjourney with the prompt: “Dragon flying in the sky, simple flat style,” which generated four distinct images (Figure 5). Each image highlights different visual focal points: the top left emphasizes the dragon, the top right centers on colorful, dynamic clouds, the bottom left balances dragon and clouds equally, while the bottom right depicts the dragon from an upward perspective. Although all depict dragons and skies, their divergent focal emphases yield unique stylistic outcomes.

**Figure 5**

*Four “Dragon in the Sky” Images Generated by Midjourney*



Source: Author’s own creation

Addressing complex problems in ways akin to AI’s pattern recognition and data mining requires the identification and unification of similar keywords. This process not only primes AI outputs but also fosters an interdisciplinary design collaboration platform, lowering entry barriers for non-designers and encouraging broader innovation participation. The future of design will increasingly demand interdisciplinarity, with tools like Midjourney enabling professional designers to communicate precise concepts visually while empowering individuals from diverse domains to express ideas unconstrained by linguistic limits. Such capacity greatly facilitates interdisciplinary cooperation.

Conversely, educational programs that fail to recognize the impact of disruptive technologies—particularly artificial intelligence (Mortati & Bertola, 2021)—risk graduating professionals ill-prepared for a rapidly evolving landscape. Thus, training and higher education must equip students for digital transformation by providing appropriate tools, nurturing skill development, and fostering positive attitudes towards these technologies, while remaining mindful of their limitations and risks. Artificial intelligence must remain relevant, adaptable, and dialectically integrated within defined boundaries to serve human needs effectively.

### Summary and Future Perspectives

In Stéphane Vial’s *Court Traité du Design*, design is positioned as a discipline uniquely tasked with making the world a better place—a mission that distinguishes it fundamentally from pure art. This human-centered ethos calls for designers not only to create aesthetically pleasing content but also to imbue their work with social responsibility and meaningful impact. As such, the essence of design lies in fostering experiences of beauty that are accessible and co-created by the public, transforming audiences from passive consumers into active participants. This

marks a critical evolution as design transcends its traditional role as a practical technology and increasingly integrates with the humanities and social sciences.

### **The Transformation of the Design Perspective: From Creative Production to Driving Sustainable Social and Educational Development**

In recent years, scholarly discourse has shifted to emphasize design's broader societal implications, inviting reflections from beyond the discipline itself. Contemporary design education must therefore embrace a holistic process: cultivating creative, adaptive thinking at the university level that seamlessly bridges theoretical frameworks with real-world practices, ultimately contributing to the public's cultural and aesthetic awareness. This paradigm shift underscores the designer's role not merely as a creator but as a facilitator of collective meaning and social progress.

Yuval Noah Harari's reflections in *Sapiens: A Brief History of Humankind* underscore a pivotal historical transition—from artistic design serving elite interests to becoming a democratized force shaping mass culture. Harari further cautions that emerging technologies like big data and artificial intelligence are not deterministic forces; rather, they are tools capable of fostering diverse societal trajectories. This invites a profound reorientation toward participatory and co-design methodologies, empowering stakeholders to actively shape their environments and futures.

Human behavior, deeply intertwined with emotional and cognitive complexities, defies simplistic categorization. Memory itself is reconstructive, influenced by personal biases and fluctuating attention spans, complicating our understanding of collective experiences. Given this fluidity, design must navigate these psychological landscapes thoughtfully, recognizing the mutable nature of human perception.

In conclusion, design—especially within educational contexts—demands a rigorous ethical framework that critically interrogates the intersection of technology, creativity, and social responsibility. Moving beyond entrenched habits toward speculative and visionary approaches enables designers to anticipate and engage with future challenges meaningfully. University-level design education must therefore balance talent cultivation with practical societal needs, embedding environmental stewardship and ethical consciousness as foundational pillars.

Echoing Dunne and Raby's seminal work *Speculative Everything: Design Fiction and Social Dreaming* (2013), the transformative potential of design lies in its capacity to imagine alternative futures—scenarios that redefine our relationship to reality and open new possibilities for social existence. This speculative turn not only expands design's horizons but also positions it as a critical agent in shaping more just, sustainable, and imaginative futures.

### **Conclusion**

This study has explored the integration of AIGC into art and design education by examining its role in mediating between self-expression and aesthetic literacy. Rather than treating AIGC as a replacement for human creativity, the paper has framed it as an educational medium that externalizes internal intentions and facilitates reflective engagement with visual representations.

From a pedagogical perspective, AIGC enables students to rapidly visualize abstract ideas, making implicit intentions perceptible and open to interpretation. This process aligns with the traditional concept of “establishing images to express meaning,” while extending it through algorithmic generation and human–AI interaction. However, the educational value of AIGC does not reside in image production itself, but in the guided learning processes that surround it.

Educators play a critical role in shaping these processes. Without pedagogical intervention, AIGC risks reinforcing surface-level aesthetics and passive consumption of images. When integrated into structured teaching practices, however, AIGC can support students in developing symbolic awareness, critical interpretation, and aesthetic judgment. Through dialogue, comparison, and reflection, students are encouraged to move beyond personal expression toward a more nuanced understanding of visual meaning.

In this sense, the contribution of AIGC to art and design education lies not in technological novelty, but in its potential to transform learning structures. By supporting the transition from self-expression to aesthetic literacy, AIGC offers a pedagogical opportunity to rethink how images function as cognitive and cultural mediators in contemporary education. This study thus provides a theoretical foundation for the responsible and meaningful integration of AIGC into art and design teaching practices.

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The author declares that no AI or AI-assisted technologies have been used to generate, refine, or correct the content in the manuscript. The ideas, design, procedures, findings, analyses, and discussion are originally written and derived from careful and systematic conduct of the research.

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