

THE TRANSFORMATION OF AESTHETIC EDUCATION: A TRANS-EPOCHAL DIALOGUE FROM RENAISSANCE PORTRAITURE TO THE AI ROBOT AMECA IN FASHION SHOW

Zhuoying Jiang
Saint Petersburg State University, Russia

Xiaoyan Li*
Shandong Jianzhu University, China

Against the backdrop of the evolution of artistic forms, this paper explores the paradigm shift in aesthetic education from Renaissance portraiture to the contemporary AI robot Ameca. Through a trans-epochal dialogue, it analyzes the profound impact of technological innovation on the goals, content, and methods of aesthetic education. The article points out that Renaissance portraiture established a humanistic paradigm for aesthetic education, emphasizing ideal beauty, individuality, and the integration of skill and artistry; whereas AI art reconstructs creative subjectivity, aesthetic experience, and the standards of artistic value, challenging traditional frameworks of aesthetic education. The research contends that contemporary aesthetic education must, while embracing technological possibilities, adhere to the core tenet of "all-round human development," thereby constructing an innovative system that integrates humanistic and technological dimensions. This study provides a theoretical path for aesthetic education practices in the digital age, one that possesses historical depth and critical reflection, and offers references for educational innovation under the policy of "Integrated Five-Education (Moral, Intellectual, Physical, Aesthetical, and Labour Education)"(Zhang 2024).

Keywords: Aesthetic Education Transformation, AI Art, Artificial Intelligence, Subjectivity, Integrated Five-Education (Moral, Intellectual, Physical, Aesthetical, and Labour Education), Generative AI, Renaissance Portraiture, Trans-epochal Dialogue

INTRODUCTION

At the intersection of the philosophy of technology and art history, the evolution of artistic forms has consistently mirrored transformations in humanity's self-

understanding and pursuit of values. From the exaltation of ideal humanity in Renaissance portraiture to the contemporary fundamental challenges posed by artificial intelligence to creative subjectivity, the transformation of artistic media of expression reflects not merely shifts in technological conditions but also reveals a profound restructuring of the conceptual and practical paradigms of aesthetic education. Against this grand backdrop, this study aims to dissect the trajectory of transformation in the objectives, content, and methods of aesthetic education under technology's impetus, by examining a "trans-epochal dialogue" spanning from Italian Renaissance portraiture to the AI robot Ameca in Giuseppe di Morabito's fashion show. In this paper, the term "trans-epochal" denotes a comparative analytical framework that juxtaposes historically distant paradigms (here, the handcraft-era paradigm of the Renaissance and the digital/AI-era paradigm) to illuminate fundamental shifts and enduring continuities in the conceptual core of aesthetic education, transcending the linear progression of time. This dialogue specifically focuses on the reconfiguration of three core dimensions: creative subjectivity, aesthetic experience, and the standards of artistic value, analyzing how these transformations reshape the goals, content, and methods of aesthetic education.

The rise of Renaissance portraiture marked the establishment of a humanistic paradigm for aesthetic education, for instance, artists like Leonardo da Vinci, through works such as the Mona Lisa, employed techniques like *sfumato* and *chiaroscuro* not merely for realistic depiction but to capture the sitter's inner life, thereby shifting aesthetic education's focus from religious iconography to the cultivation of individual character and ideal beauty, this integration of art and science established a foundation for the fusion of intellectual and sensory dimensions in modern Western aesthetic education (Chen 2015, 42-44). However, the current rapid advancement of artificial intelligence technology is triggering a paradigmatic shift in art that is arguably comparable in significance. AI-generated art, facilitated through text-to-image interactive creation models, is rapidly gaining popularity, blurring the boundaries between professional artists and ordinary users and prompting a reexamination of the nature of artistic creation and authorship (Lyu et al. 2022, 11312). This phenomenon, intertwined with breakthroughs in technologies such as the metaverse and generative AI, collectively constitutes a new paradigm for aesthetic experience in the digital age (Dwivedi et al. 2022, 102542). Nevertheless, current research remains predominantly segmented. On one hand, inquiries into AI art itself largely focus on technical implementation, ontological status, or immediate social impact (Lyu et al. 2022, 11312; Bandi et al. 2023, 260), while seldom contextualizing it within the longue durée of aesthetic education's evolution. On the other hand, research on techno-aesthetics in education, though acknowledging its potential (Zhao 2025, 1483559; Hou et al. 2022, 1-20; Yenduri et al. 2024, 54608-54649), often examines applications in a fragmented manner, without consolidating a systematic theory on how technology reconfigures the core relational matrix of "subject-technology-tradition" in aesthetic formation.

The most critical theoretical gap arising from this segmentation is the absence of a coherent framework to fundamentally assess the nature of AI's impact on aesthetic education. This lack forces a false binary: we are left debating whether AI art signifies a radical rupture from, or a simple continuation of, pre-digital aesthetic traditions,

without the analytical tools to capture a more nuanced, dialectical relationship. This gap is not merely topical but methodological. As noted, studies on digital heritage or the metaverse (Dwivedi et al. 2022, 102542; Allam et al. 2022, 771-801) rarely engage in structured diachronic comparison with the foundational paradigms of aesthetic education from pre-digital eras, such as the humanistic model solidified during the Renaissance. Consequently, it remains obscured whether AI technology is altering the very philosophical underpinnings of humanistic aesthetic education or offering a new medium for its enduring values.

It is precisely this methodological and theoretical gap that this study aims to fill. We argue that to move beyond the impasse of the “rupture versus continuation” debate, a deliberately trans-epochal comparative framework is necessary. This paper, therefore, constructs and deploys such a framework by staging a dialogue between the Renaissance portrait paradigm and the AI art paradigm exemplified by Ameca. This approach allows us to interrogate how shifts in creative subjectivity, aesthetic experience, and value standards reshape aesthetic education, thereby offering a more historically grounded and philosophically nuanced understanding of AI's role, not as either a mere tool or outright usurper, but as a transformative agent in an ongoing reconstitution of aesthetic education's paradigms. As policy research reveals, even within technology-driven educational reforms, structural contradictions such as teacher shortages and conceptual narrowing persist (Zhao 2025, 1483559), implying that purely technical analysis is insufficient to resolve the deep-seated dilemmas in the transformation of aesthetic education.

This study aims to fill this theoretical vacuum by establishing a trans-epochal comparative framework for aesthetic education paradigms, thereby revealing how AI technology both inherits and innovates upon the value logic of traditional aesthetic education. This research will not only help clarify the positioning of generative AI and large language models within aesthetic education but can also provide developmental pathways for art education in platform societies that balance technological innovation with humanistic concern. Ultimately, we will argue that AI art is neither a simple extension of instrumental rationality nor a completely heterogeneous cultural rupture, but rather a dialectical synthesis of techno-aesthetics and humanistic tradition within the digital context. It seeks not merely to reveal how AI technology reconstructs aesthetic subjectivity, creative processes, and experiential modes, but, more importantly, to elucidate that this transformation does not constitute an alteration of humanistic aesthetic education values. Instead, it represents a continuation and innovation of its core objective, “all-round human development” in the technological age. Finally, it aims to provide a theoretical framework and practical path, possessing both historical depth and a critical stance towards technology, for the future development of aesthetic education under the concept of “Integrated Five-Education” (the integrated development of moral, intellectual, physical, aesthetical and labour education, key educational policy in contemporary China) (Zhang 2024). By integrating perspectives from art history, philosophy of technology, and educational theory through an interdisciplinary lens, this study attempts to offer a theoretical reference for constructing an innovative paradigm that can both embrace technological possibilities and steadfastly adhere to the fundamental goal of aesthetic education: the all-round development of the human person.

ARTISTIC BREAKTHROUGHS AND AESTHETIC EDUCATION IMPLICATIONS IN RENAISSANCE PORTRAITURE

To comprehend the transformative challenges that AI art poses to aesthetic education, it is essential to first return to the historical turning point of the Italian Renaissance. The emergence of portraiture during this period was not merely an evolution in artistic style, but a profound cognitive revolution. This section, therefore, serves to establish the historical benchmark of the human-centered paradigm for aesthetic education. By elevating the individual from a symbolic cipher in religious narratives to the central subject of artistic representation and philosophical inquiry, Renaissance portraiture enabled the realistic depiction of individual psychology, combined with the humanist celebration of secular experience and personal virtue, it systematically established a human-centered paradigm for aesthetic education, the influence of which endures to this day (Chen 2015, 42-44; Jiang and Li 2005, 23-29, 166).

Portraiture of the Italian Renaissance marks a crucial turning point in the history of European art. It represents not only the flourishing of an artistic form but also profoundly reflects a transformation in the mode of human self-understanding. The development of portraiture from the 15th to the 16th century demonstrates a shift in art from religious divinity towards humanism, a transition from collective symbolism to individual value, and a leap from technical imitation to artistic creation (Liu 1994, 6). These transformations not only reshaped the trajectory of art history but also provided aesthetic education with rich content and paradigms, the influence of which persists to this day. The characteristics and historical context of traditional art forms reflect a deep interweaving of technology and culture throughout the course of human civilization. From prehistoric cave paintings to Renaissance oil painting, artistic creation has always been constrained by the technological conditions and material availability of its time. Medieval European religious paintings, executed in tempera, saw their color expressiveness and durability limited by the chemical properties of natural pigments. These very technical limitations, however, shaped a flat, symbolic aesthetic standard (Li 2009, 283-284). This symbiotic relationship between artistic form and material conditions is similarly evidenced in the casting techniques of the Bronze Age or the absorbency of rice paper in Chinese ink wash painting. Technology not only defined the boundaries of creation but also became internalized as a core element of the aesthetic system itself.

From Religious Subordination to Humanistic Expression

Pre-Renaissance portrait art primarily served religious and political purposes, exhibiting distinct collective characteristics. The construction of Gothic cathedrals required collaboration spanning multiple generations among architects, stonemasons, and glass artisans, this division of labor was closely bound to the guild system (Farooq 2024, 25-35). This collective mode of production resulted in a weak conception of authorship, and portraits in medieval art were predominantly depictions of donors, portrayed in kneeling or other humble postures at the margins of religious scenes, and scaled smaller than sacred figures. In contrast, during the Renaissance, portraiture gained independent status, becoming a medium for displaying personal identity,

erudition, and inner qualities (Cui 2025). This shift was underpinned by the rise of humanist thought, which emphasized the dignity of the individual, the value of personality, and the affirmation of worldly existence. Artists began focusing on the unique character and psychological state of their subjects, making portraiture an important vehicle for exploring humanity and self-awareness. Leon Battista Alberti, in his treatise *De Pictura*, systematically elaborated the principles of perspective, elevating painting to a rational knowledge system based on mathematical principles rather than mere craftsmanship. His concept of *istoria* (history painting), which emphasized narrative and emotional expression through posture, expression, and composition, provided theoretical support for capturing the inner spirit of individuals in portraits (Gao 2023, 93-101). This integration of art and science, emotion and reason, established the foundation for the fusion of intellectual and sensory dimensions in Renaissance aesthetic education.

Technical Innovation and the Pursuit of Realism

The groundbreaking achievements of Renaissance portraiture were manifested through multifaceted innovations in artistic technique. First, the systematic application of perspective enabled two-dimensional surfaces to convey three-dimensional spatiality, creating a more authentic visual experience. Second, the mature use of *chiaroscuro* lent figures a tangible sense of volume and texture. Third, advances in anatomical knowledge allowed for more precise and naturalistic depictions of facial structures and expressions (Gao 1999, 5). Leonardo da Vinci's *Mona Lisa* stands as a paradigmatic synthesis of these techniques: through subtle contrasts of light and shadow and nuanced gradations of tone, the painting achieves remarkable depth and dimensionality. These technical innovations not only elevated the verisimilitude of portraiture but also established an approach to aesthetic education grounded in observation and scientific inquiry, emphasizing the rational study of nature and the human form.

The Expansion of Social Functions

Portraiture during the Renaissance served diverse social functions that extended far beyond mere visual documentation. For the emerging bourgeoisie and aristocratic elites, portraits acted as vital instruments for demonstrating social status, intellectual refinement, and familial prestige. Simultaneously, portraiture served as a medium for political propaganda and historical documentation, enabling rulers to reinforce their authority through visual representation. Furthermore, humanists believed that portrait art possessed a moral edifying function, asserting that depictions of exemplary figures could inspire viewers to pursue virtue. These varied social roles effectively constituted an early form of aesthetic education, subtly shaping people's values and behaviors through artistic representation (Ai 2013, 3).

The Dialectical Unity of Idealized Beauty and Actuality

A core aesthetic feature of Renaissance portraiture was its pursuit of idealized representation on the basis of realism (Luo 2012, 123-127). Artists sought not only to

capture the individual's physical appearance but also to present a perfected archetype that transcended the particular, through deliberate control of proportion, light and shadow, and expression. Such idealization did not constitute a denial of reality but rather an exploration of humanity's potential, reflecting the Renaissance belief in the elevated value of the individual. On the level of aesthetic education, this dialectical interplay between the ideal and the actual inspires reflection on how art can simultaneously reflect and transcend reality, cultivating the ability to perceive and create beauty.

The aesthetic education paradigm established by Renaissance portraiture has exerted a profound and lasting influence on subsequent generations. It shifted the focus of art education from the mere transmission of technical skills to the holistic cultivation of the individual, integrating aesthetic experience with scientific cognition and moral formation. This comprehensive vision of aesthetic education remains highly relevant within contemporary educational reforms aimed at "Integrated Five-Education" (Zhang 2024). It reminds us that, in an era increasingly shaped by technology, it is all the more essential to uphold humanistic values and to foster holistically developed talents equipped with aesthetic literacy, scientific spirit, and a sense of social responsibility. Thus, the portrait became the primary medium for articulating and celebrating the emergent concept of the autonomous individual.

THE EVOLUTION OF ARTISTIC FORMS AND AESTHETIC EDUCATION CONCEPTS FROM TRADITION TO MODERNITY

Over the centuries following the Renaissance, artistic forms and aesthetic concepts underwent profound transformations. These were not merely stylistic evolutions but embodied a deepening dialogue between art, the self, and an increasingly complex world. This part of the paper charts this evolution from tradition to modernity, providing the necessary historical and intellectual context that bridges the humanist paradigm and the contemporary digital age. Crucially, this trajectory was punctuated by a pivotal philosophical moment: German Romanticism, which established aesthetic education itself as a central discourse for negotiating modernity (Zhang 2002, 12-21). Thus, the path from the dynamic theatricality of the Baroque, through the philosophically charged expressiveness of Romanticism, to the abstract experimentation of Modernism, represents an expansion of art's expressive boundaries alongside a continuous re-interrogation of art's purpose in human development.

This historical process reached a critical turning point in the late 19th and early 20th centuries. During this time, the Industrial Revolution advanced rapidly, triggering dramatic technological and social structural changes. European intellectual circles were influenced by currents such as positivism, evolutionary theory, and even Marxism, ushering society into a new era dominated by science and industry. Artistic creation became increasingly individualized, with various movements emerging and evolving in quick succession. Alongside Europe's national liberation movements, the connection between art and social reality, as well as national identity, grew increasingly stronger. At this stage, traditional concepts of art were subjected to fundamental questioning, and aesthetic modernity assumed a

new complexion, laying crucial groundwork for the development of contemporary art and aesthetic education.

The Bridge of German Romanticism

The trajectory from Renaissance humanism to modernist experimentation was not a direct leap but was mediated by significant intellectual movements, notably German Romanticism. Figures like Friedrich Schiller posited aesthetic education as the means to heal the fragmentation of modern humanity caused by the division of labor and instrumental reason, forces accelerated by the Industrial Revolution (Gan 2008, 25–27). For the Romantics, heightened aesthetic sensitivity was not an escape from, but a crucial response to, modernity. Art and aesthetic experience were seen as realms of wholeness and freedom, counterbalancing the mechanistic sweep of industrialization. This conceptualization of aesthetic education as essential to cultivating a complete human being provides a vital philosophical link between the individualized ideal of the Renaissance and the subjective, often critical, turn of modernism, underscoring that aesthetic education itself has been a central discourse in negotiating the experience of modernity.

The Paradigm Shift of Modern Art

The paradigm revolution of modernist art must be distinguished from the broader experience of modernity. The experience of modernity frames the socio-historical context, while modernist art constitutes a specific array of avant-garde responses within that context. This distinction is crucial: viewing a work through the lens of ‘modernity’ leads us to consider its engagement with contemporary life, technology, and alienation; whereas applying the framework of ‘modernism’ directs our analysis toward its formal innovations, stylistic ruptures, and self-critical stance towards the art tradition itself. Standardized teaching methods ensured the stability of technical transmission (Sydykova et al. 2018, 2855-2863), yet they also reinforced conservative tendencies within aesthetic paradigms. In contrast, the paradigm revolution of modern art fundamentally altered the understanding of art’s nature and function. Diverging from traditional art’s pursuit of beauty and harmony, modern art placed greater emphasis on criticality, conceptual depth, and experimentation. The Industrial Revolution, as a pivotal turning point in human history, not only reshaped socioeconomic structures but also profoundly influenced paradigm shifts in the art world. Technological innovations from mechanized production first disrupted the handcrafted modes of traditional art. The potential for mass reproduction diminished the uniqueness of artworks, prompting artists to reconsider the very essence of creation.

Particularly significant during this period was the invention of photography, which enabled the precise capture of reality through optical and chemical technologies, directly challenging painting’s long-held monopoly on representational functions. This technological displacement compelled painting to transition from imitating nature toward subjective expression, thereby opening pathways for formal experimentation in modern art. Impressionism abandoned strict adherence to local color and clear

outlines; Expressionism exaggerated forms to convey inner emotions, thus shifting the portrayal of the individual from external likeness to internal, psychological states; Cubism presented objects from multiple viewpoints simultaneously, deconstructing the principles of perspective established since the Renaissance; Dadaism adopted an anti-art stance to question the very definition of art. These radical transformations shifted art from mimetic representation to subjective creation, and from visual pleasure to intellectual provocation.

On the level of aesthetic education, this shift redirected emphasis from technical training to nurturing creativity, and from imparting aesthetic standards to developing critical thinking. As a result, aesthetic education no longer merely involves transmitting artistic skills but promotes students' innovative thinking and independent critical thought through diverse modes of artistic expression (Zhao 2024, 0219-0222).

Core Shifts in Aesthetic Concepts from Modernity to Contemporary Practice

Technological media have brought unprecedented possibilities to artistic creation. The invention of photography made the mechanical reproduction of images possible, fundamentally transforming the ecology of visual arts. Cinema emerged as a new composite art form integrating visual, auditory, and narrative dimensions. It introduced a temporal dimension to the representation of the individual, capturing not just a static likeness but the individual in action, within narrative and social relations, thereby profoundly expanding the aesthetic education of observing and understanding the human condition. The rise of digital technology further expanded the virtual and interactive aspects of art. These technological changes not only gave rise to new art forms but also redefined the creation and reception of traditional artistic expressions. In the field of aesthetic education, the diversification of technological media has driven continuous updates in educational content and methods, expanding from traditional forms such as painting and sculpture to include various formats including photography, film, digital media, and beyond. This expansion enables aesthetic education to respond more comprehensively to the aesthetic demands of the technological age (Li and Liu 2024).

This shift is manifested as a reevaluation of values from the eternal to the instantaneous, and from the universal to the pluralistic. Modern art no longer seeks timeless ideal beauty but rather captures the immediate sensuous experience and intellectual tensions of the present. It no longer adheres to universally applicable aesthetic standards but instead respects diverse expressions across cultures and communities. Within the domain of aesthetic education, this transformation has prompted critical reflection on traditional authoritative teaching models. Aesthetic education is no longer merely about transmitting canonical works; rather, it aims to cultivate students' ability to exercise independent judgment and engage in equal dialogue within multicultural contexts. Such competence has become particularly essential in cultural exchanges of the globalized era.

This reevaluation of aesthetic values is intrinsically linked to another fundamental shift: the movement of artistic emphasis from the finished object to the creative process itself. While traditional art prioritized the perfection of the completed object, modern art places greater focus on the process of creation and the participatory

experience of the audience. Emerging forms such as interactive installations, performance art, and relational aesthetics each define art as a dynamic, generative process rather than a static entity. This shift profoundly influences methodologies in aesthetic education, redirecting emphasis from the production of artworks to the experiential nature of the process, and from teacher-centered instruction to student-centered participation. Effective art education should engage students in hands-on artistic creation, enhancing their practical competence and innovative thinking (Qu and Yang 2021, 828). Such participatory approaches more effectively stimulate learners' initiative and creativity, fostering well-rounded artistic literacy.

The experiential and process-oriented turn in art naturally calls for a corresponding evolution in educational paradigms. This is vividly embodied in the contemporary trend of integrated aesthetic education, particularly under the framework of "Integrated Five-Education" (Zhang 2024). Rather than existing as simply parallel components, they now form an organic whole characterized by mutual permeation and synergistic development. Within this framework, aesthetic education functions not only as an independent field but also as a catalyst and integrator for the other dimensions. Through aesthetic experience and artistic creation, students are able to comprehend knowledge more holistically, internalize values more profoundly, and develop physically and mentally in a more harmonious manner. This integrated educational approach echoes the humanistic ideal of the Renaissance while endowing it with richer connotations under new historical conditions.

The evolution of artistic forms from traditional to modern has not only altered creative methods and aesthetic standards but also profoundly reshaped the goals, content, and methods of aesthetic education. Understanding this transformative trajectory allows us to reconsider the value and direction of aesthetic education within the contemporary technological and cultural context, thereby laying the necessary historical and theoretical groundwork for further exploration of new forms of artistic expression and their educational implications in the age of artificial intelligence.

GIUSEPPE DI MORABITO'S FASHION SHOW AND THE AI ROBOT AMECA: ARTISTIC EXPRESSION IN THE POSTHUMAN ERA

The 2020s have witnessed explosive growth in the application of artificial intelligence within artistic creation. Among these developments, the appearance of the AI robot Ameca in Giuseppe di Morabito's fashion show represents one of the most cutting-edge and controversial artistic explorations of our time. This section presents Ameca as the pivotal contemporary case study for our trans-epochal dialogue. It analyzes how this "posthuman" entity fundamentally reconfigures the core dimensions of creative subjectivity, aesthetic experience, and artistic value, thereby posing a direct and radical challenge to the human-centered paradigm established in the previous sections. With its highly realistic facial expressions and responsive interactions, Ameca blurs the lines between machine and life, between the created and the creator, offering an extremely valuable case study for understanding art and aesthetic education in the posthuman era.

The emergence of Ameca signifies art's formal entry into a "posthuman" context. Donna J. Haraway's metaphor of the "Cyborg" serves as an excellent analytical tool here (Zhang 2019, 3). Ameca is no longer a passive machine but a hybrid entity that blurs the boundaries between the natural and the artificial, the organic and the mechanical, the real and the virtual. It challenges the anthropocentric aesthetic paradigm established since the Renaissance, compelling us to expand the object of aesthetics from the "human image" to the "posthuman entity." Rosi Braidotti's posthuman theory further suggests that this shift does not signify the end of the human, but rather an exploration of a new, more inclusive form of subjectivity that moves beyond humanism (Braidotti 2013, 1-19). Ameca's "performance" on the runway embodies precisely this decentralized, networked form of subjectivity.

The Techno-Aesthetics and Artistic Breakthrough of Ameca

As the "most advanced humanoid robot" developed by Engineered Arts, Ameca integrates state-of-the-art artificial intelligence, robotics, and generative art technologies. Its facial expressions achieve an unprecedented level of subtlety and natural fluidity. At Giuseppe di Morabito's fashion show, Ameca appeared not as a passive mannequin displaying garments, but as a performer with "autonomous" responsive capabilities, engaging in seemingly genuine interactions with the audience and the environment. This technological achievement is underpinned by the synergistic operation of complex machine learning algorithms, computer vision systems, and real-time rendering technologies. It embodies a distinct form of digital-age techno-aesthetics.

However, it is essential to critically examine the limitations of this "synthetic realism." Ameca's emotional expressions are fundamentally based on pattern recognition and feedback derived from massive data training. While its reactions may be precise, they lack the conscious depth and experiential quality of human emotion. Its "creativity" remains constrained by the boundaries of its algorithmic architecture and training data, incapable of producing genuine inspiration sparked by lived experience or existential reflection. Unlike the idealized beauty pursued in Renaissance portraiture, Ameca embodies an aesthetic of "synthetic realism" grounded in algorithmic precision and datasets of human facial expressions. This aesthetic is becoming a dominant trend in contemporary digital art, yet it also raises concerns about the disappearance of art's "aura," a concept central to Walter Benjamin's reflections on art in the age of mechanical reproduction. In the age of AI, his insights take on renewed significance: when artworks can be algorithmically generated without limit, do their uniqueness and authenticity vanish (Zhu 2008, 34-35)? The integration of technological means such as digital art, virtual reality, and artificial intelligence has enriched the practices and teaching methodologies of aesthetic education. Ameca serves as a prime example of this fusion between technology and art. Nevertheless, educators must remain vigilant against how technological spectacle may obscure critical thinking, guiding students to appreciate technological achievements while also questioning their inherent limitations (Tao 2024, 54) (Wang 2024, 230-236).

The Reconfiguration of Subjectivity in Artistic Creation

The Renaissance-established notion of the artist as the sovereign creative subject faces fundamental questioning in the age of AI. As machines become capable of generating art, participating in performances, and engaging in "creative" interaction, the boundaries of artistic subjectivity grow increasingly blurred and complex. Ameca's presentation during the fashion show was influenced by prescribed programming yet also demonstrated a degree of algorithmic autonomy. This intermediate state between control and agency challenges conventional frameworks of artistic criticism.

On one hand, Ameca's "creation" is essentially the result of human programming and machine learning, where engineers and designers remain the true creative agents behind its output. On the other hand, the unpredictability inherent in algorithmic processes grants Ameca a certain form of "agency," allowing it to transcend the role of a mere tool. N. Katherine Hayles' theory of "nonconscious cognition" offers a new perspective for understanding this form of subjectivity (Hayles 2014, 199-220). Ameca's "intelligence" does not originate from human-like self-awareness but is built on pattern recognition and responsive capabilities trained on massive datasets. This "nonconscious" mode of cognition challenges the traditional notion that necessarily ties creativity and emotional expression to human consciousness.

Assessment of AI art can be approached from two perspectives. On the negative side, AI art may lead to homogenization and standardization in creative output, as algorithms tend to generate "safe" results that align with the most common patterns in the training data rather than producing truly groundbreaking innovations. On the positive side, however, the value of AI lies precisely in its ability to break away from inherent human cognitive frameworks, generating unexpected associations and combinations. This presents a new challenge for aesthetic education: how do we appreciate, evaluate, and even interact with a form of "creativity" based on nonconscious cognition? This requires moving beyond the Romantic conception of art as the exclusive expression of human genius and calls for a reexamination of the conditions that constitute creative subjectivity. Such reconfiguration demands that aesthetic education reconsider the nature of authorship, the value of originality, and the creative relationship between humans and technology. It also entails cultivating artistic and cultural literacy with international competitiveness, which includes the ability to understand and critically engage with AI art (Cai 2024, 20).

The Emergence of Posthuman Aesthetic Experience

Ameca's interactions with models and the audience demonstrate an entirely new form of human-machine aesthetic relationship. Unlike the contemplative and empathetic engagement characteristic of traditional art appreciation, the experience of interacting with Ameca more closely resembles a dialogic, participatory, and real-time generative process. Viewers are no longer confronted with a finished artwork but rather an artificial presence capable of responsive behavior, blurring the traditional distinctions between creator, work, and spectator. However, this interaction is inherently asymmetrical. Ameca's responses remain products of algorithmic

processes, lacking the intentionality and emotional authenticity of human interaction. While viewers may project emotions onto it, this relationship more closely resembles a "simulacrum" than genuine intersubjectivity. The human-centered aesthetic experience established during the Renaissance is here reconfigured into a distributed, networked, posthuman mode of aesthetic engagement. Aesthetic education is recognized not only for enhancing aesthetic literacy but also for effectively promoting psychological well-being (Chen 2024, 674). Within human-machine interactions, maintaining this educational value becomes an urgent frontier for exploration. The aesthetic experience brought forth by Ameca holds the potential to expand human empathy and inclusiveness by incorporating machines into the field of emotional projection. Conversely, it could also lead to the standardization of emotional expression and the erosion of authenticity. The outcome ultimately depends on the guidance provided by aesthetic education and the depth of critical reflection employed.

The Cross-Disciplinary Integration of Fashion and Technology

As an avant-garde fashion designer, Giuseppe di Morabito's choice of Ameca as a medium of presentation carries profound symbolic significance. Fashion has long served as a vital domain for identity performance, aesthetic expression, and self-representation. In the fashion show titled "ALONE WITH THE STARS," the AI robot Ameca introduced heightened complexity and multiplicity into the fashion system, adding a dual-layered enhancement to the garments presented at the Giuseppe di Morabito 25/26 Autumn-Winter Milan Fashion Week show. This integration allowed the collection to function not only as a symbol of human culture but also as an interface for human-machine interaction and a demonstration ground for techno-aesthetics.

This integration reflects a significant trend in contemporary art: the dissolution of traditional boundaries between media and disciplines to create synthesized experiential environments. Yet it also raises new questions concerning cultural appropriation, specifically whether AI's imitation of human expressions and bodily language constitutes a deeper form of "cultural-technological colonization." Nevertheless, the integration of multidisciplinary elements such as technology, literature, and sociology with art will substantially enrich both the content and scope of aesthetic education curricula. The case of Ameca serves as an exemplary resource for such cross-disciplinary art education, helping students comprehend the potential of creative convergence between technology and the humanities, while also encouraging critical examination of the power dynamics and ethical boundaries involved.

The Socio-Cultural Significance of the Ameca Phenomenon

In a society increasingly shaped by algorithms, the implications of AI representations like Ameca extend beyond the technical level, engaging contemporary issues of identity politics and ontology. Such forms urge us to reconsider fundamental questions: Where does human uniqueness lie? What is the essential nature of artistic creativity? How should ethical relationships between humans and machines be

constructed? These questions reflect profound anxieties and explorations concerning humanity's self-positioning in the digital age.

From the perspective of aesthetic education, Ameca should not be regarded merely as a technological demonstration but rather as a "philosophical catalyst" that inspires students to contemplate the relationship between humanity and technology. Contemporary aesthetic education must place greater emphasis on the deep integration of technology and art, promoting innovation and development in art education models, while simultaneously maintaining a capacity for humanistic reflection and critical scrutiny of technology (Peng 2013). In educational practice, students can be guided to compare the fundamental differences between Ameca's "expressions" and those in Renaissance portraiture: the former constitutes an algorithmic output based on data-driven pattern recognition, which is essentially an unconscious symbolic operation; whereas the latter originates from the artist's lived experience, emotional projection, and aesthetic ideals, representing a conscious artistic transformation and meaning-making process. Through such comparison, students may engage deeply with key propositions such as the expressionist idea that "art is the necessary externalization of inner emotion," the distinction between the first-person nature of consciousness in philosophy of mind and the functional simulation of machines, as well as classic debates in the philosophy of technology regarding the relationship between instrumental rationality and value rationality. This process enables them to clarify the multiple philosophical boundaries involved in the contrast between technological simulation and artistic expression, spanning theories of representation, philosophy of mind, and the ontology of creation.

The appearance of Ameca in Giuseppe di Morabito's fashion show represents a cutting-edge development in artistic form within the AI era. It not only continues the enduring artistic motif of representing the "human" that has persisted since the Renaissance but also radically reconfigures the fundamental paradigms of artistic creation and reception. Understanding this new form of artistic expression is crucial for the transformation of aesthetic education. It challenges educators to reconsider the boundaries, content, and methods of art education, calling for the establishment of a creative dialogue and critical dimension between technological culture and humanistic values. By doing so, aesthetic education can become a vital force in shaping the humanistic spirit of the technological age, thereby engaging with the core issues that AI era seeks to challenge and redefine. Ultimately, this approach aims to cultivate well-rounded individuals equipped with both technological literacy and humanistic depth for future society.

THE TRANSFORMATION OF AESTHETIC EDUCATION CONCEPTS IN THE EVOLUTION FROM PORTRAITURE TO AI

The profound implications raised by the case of Ameca compel the system of aesthetic education to respond. Building on the historical baseline and the contemporary challenge, this part synthesizes and systematizes the conceptual transformation of aesthetic education itself. It moves from specific case analysis to a structured comparison of paradigm shifts across five key dimensions: goals, content,

methods, value orientations, and interdisciplinary integration. However, current research on the application of technological aesthetics in education remains fragmented. Although new media art has expanded aesthetic education practices through immersive experiences, and technologies such as digital twins and large-scale models have been shown to enhance the interactivity of cultural transmission, existing studies predominantly focus on instrumental aspects. They have yet to deeply explore how AI reconfigures the triadic relationship between "subject-technology-tradition," nor have they engaged these technological practices in a diachronic dialogue with the aesthetic education paradigms of the handicraft and mechanical ages. This disconnect and limitation highlight the urgency and necessity of systematically examining the overall transformation of aesthetic education concepts under the evolution of artistic forms from a historical-comparative perspective.

Artificial intelligence technology is profoundly reshaping the production, dissemination, and reception of aesthetic education content. The evolution of artistic expression from Renaissance portraiture to the AI robot Ameca reflects not only changes in technological media and aesthetic preferences but also signifies a deep transformation in the concepts and practical models of aesthetic education. This shift manifests across multiple dimensions, including the goals, content, methodologies, and value orientations of aesthetic education, ultimately giving rise to a new paradigm of aesthetic education that aligns with contemporary techno-cultural realities. By tracing this trajectory of transformation, we can more clearly discern the redefined role of aesthetic education in modern society and its potential future directions.

The Shift in Aesthetic Education Goals

The objectives of aesthetic education have expanded from "aesthetic appreciation" to include "aesthetic creativity." During the Renaissance, aesthetic education primarily focused on cultivating the ability to appreciate classical art and developing a taste aligned with aristocratic preferences, emphasizing the transmission of established aesthetic standards and artistic techniques. In contrast, contemporary aesthetic education places greater importance on fostering individual innovative thinking and artistic expression, encouraging learners to break free from traditional frameworks and explore personalized aesthetic languages. This shift becomes particularly urgent in the age of AI art, where machines can imitate existing styles to generate images. In such a context, the unique value of human creativity lies in its capacity for breakthrough originality. One of the core objectives of specialized aesthetic education curricula is to "enhance students' creativity and innovative spirit," stimulating creative awareness and practical capabilities through art education (Xiao 2025). In response to the challenges posed by AI, aesthetic education must further strengthen this creative dimension, nurturing distinctly human abilities such as associative thinking, metaphorical expression, and conceptual innovation.

The Restructuring of Aesthetic Education Content

The content of aesthetic education has shifted from focusing on "art forms" to encompassing the broader "artistic ecosystem." Traditional aesthetic education

primarily revolved around limited art forms such as painting, music, and sculpture, emphasizing technique instruction and the analysis of canonical works. In contrast, contemporary aesthetic education covers a more diverse and open artistic ecosystem, including emerging forms such as digital art, virtual reality art, interactive installations, generative art, as well as cross-disciplinary experiments like AI art. This expansion does not merely represent a quantitative increase but signifies a fundamental shift in the cognitive framework of art, now transitioning from a closed system of classics to a dynamic network of creation. Future aesthetic education will place greater emphasis on the deep integration of technology and art, incorporating technological means such as digital art, virtual reality, and artificial intelligence (Zhu and Wu 2019, 3). AI art representatives like Ameca should indeed become essential components of aesthetic education content, helping students understand the latest developments in the artistic ecosystem.

Innovation in Aesthetic Education Methods

A shift has occurred from "instructive" to "experiential and inquiry-based" approaches. During the Renaissance, aesthetic education was primarily conducted through a master-apprentice system, focusing on technical demonstration and imitation training, with an emphasis on the meticulous study of masterworks. In contrast, contemporary aesthetic education prioritizes students' active experiential engagement and critical inquiry, encouraging direct participation in artistic creation to enhance practical skills and innovative thinking. Participatory methods such as project-based learning and problem-based learning are widely adopted. This approach is particularly crucial in AI art education. Students should not only understand how AI works but also engage in hands-on experiences such as training models and adjusting parameters to immerse themselves in the process of human-machine collaborative creation. Such experiential learning enables students to move beyond superficial fascination or unwarranted fear of AI technology, fostering a deeper and more dialectical understanding.

The Evolution of Value Orientations in Aesthetic Education

A transformation has taken place from "elitism" to "pluralistic inclusivity." During the Renaissance, aesthetic education primarily served the elite classes, reflecting their cultural superiority and social distinction. In contrast, contemporary aesthetic education increasingly emphasizes inclusiveness and accessibility, respecting the aesthetic needs and expressive approaches of learners from diverse cultural backgrounds, social classes, and physical conditions. The proliferation of AI technology provides new tools for inclusive aesthetic education, such as accessible art-creation software designed for people with disabilities and digital platforms dedicated to preserving endangered cultural heritage. Within a globalized context, aesthetic education should also focus on fostering the continuity of local cultural confidence, while actively incorporating and drawing upon the essence of global cultures (Liu and Wang 2018, 6). Although AI art can serve as a bridge for cross-cultural dialogue, it is

crucial to remain vigilant about the potential threats posed by algorithmic bias to cultural diversity.

Aesthetic Education and the Contemporary Development of "Integrated Five-Education"

A new pattern of cross-disciplinary collaborative education is emerging. Within the Chinese educational context, the concept of "Integrated Five-Education" emphasizes the organic integration of moral, intellectual, physical, aesthetic, and labor education, avoiding the fragmentation that results from treating them as separate domains (Zhang 2024; Sang 1991, 8). Within this framework, aesthetic education serves not only as an independent field of development but also as a crucial bond that connects and integrates the other dimensions of education (Tang and Xu 2021, 8). AI art education can effectively support this goal of integration: by combining with programming to enhance intellectual education; through interactive installation design to incorporate labor education; utilizing affective computing research to support moral education; and integrating movement arts to strengthen physical education. This integrated educational model transcends the boundaries of traditional aesthetic education, positioning art education as a vital platform for interdisciplinary, holistic education.

FUTURE DIRECTIONS AND PATHWAYS FOR AESTHETIC EDUCATION: CONSTRUCTING A HUMANISTIC-TECHNOLOGICAL INTEGRATED AND IMMERSIVE PARADIGM

The evolution of artistic expression from Renaissance portraiture to the AI robot Ameca reflects not only innovation in technological media but also reveals a deeper transformation in the philosophy and practical paradigms of aesthetic education. Moving from diagnosis to prescription, this concluding section proposes future directions and pathways. It aims to construct a forward-looking, integrated aesthetic education paradigm that negotiates the creative tension between technological possibilities and the enduring humanistic goal of all-round development. It necessitates embracing the creative possibilities brought by new technologies like AI, while steadfastly adhering to the fundamental goal of all-round human development, maintaining a creative tension between instrumental rationality and value rationality.

The humanistic aesthetic education paradigm established during the Renaissance is encountering fundamental challenges in the age of AI. AI art not only reconstructs creative subjectivity, aesthetic experience, and standards of artistic value judgment, but also compels aesthetic education to reexamine its positioning within the "posthuman condition." However, this challenge does not signify the demise of traditional values; rather, it demands a reinterpretation and realization of the core mission of aesthetic education under new technological conditions: to cultivate well-rounded individuals endowed with keen perception, innovative thinking, and humanistic awareness.

Transformation of Concepts and Innovation of Pathways

Interdisciplinary Integration in Aesthetic Education Curriculum Systems

AI can serve as a bridge connecting art and science, fostering students' comprehensive literacy through projects such as data visualization (De Gloria et al. 2014). However, it is essential to guard against techno-centrism by incorporating emotion recognition and ethical assessment modules into algorithm design, ensuring that technological empowerment does not diminish the value of emotional cultivation in art education (Holmes et al. 2022, 504-526). A successful transformation requires the construction of a dynamic evaluation system that integrates process-based data tracking with traditional aesthetic judgment, ultimately achieving a dialectical unity between instrumental rationality and value rationality (Onesi-Ozigagun et al. 2024, 589-607).

Future aesthetic education will no longer be confined to the boundaries of traditional art disciplines but will engage in deep interaction with STEM fields (Science, Technology, Engineering, and Mathematics), forming a STEAM educational model. This interdisciplinary integration can be realized through three pathways: First, Content Integration: incorporating cross-disciplinary content such as AI art, data visualization, and scientific illustration into aesthetic education curricula; Second, Methodological Integration: applying computational thinking and experimental methods from science to assist artistic creation and appreciation; Third, Conceptual Integration: introducing scientific categories such as algorithms and entropy into aesthetic concepts, while emphasizing aesthetic values like symmetry and harmony in scientific education. The combination of art with technology, literature, and other multidisciplinary elements will significantly enrich the connotation and extension of aesthetic education curricula. When analyzing AI art works like Ameca, students need not only artistic criticism skills but also an understanding of basic machine learning principles and human-computer interaction design concepts. Such a comprehensive knowledge structure contributes to a more holistic understanding of technological art.

Technology-Enhanced Teaching Methods in Aesthetic Education

Intelligent frameworks for aesthetic education demonstrate that deep learning systems based on multilayer perceptrons and convolutional neural networks can capture students' micro-level creative behaviors, such as brushstroke trajectories and color choices, in real time, while employing unsupervised learning to identify evolutionary patterns in individual creative styles (Zheng 2025, 247-256). Technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR) offer unprecedented immersive learning environments for aesthetic education. Meanwhile, AI can assist teachers in more accurately assessing students' artistic expression and potential, thereby providing personalized educational services (Li 2023, 8135). These technologies allow students to "enter" a Renaissance workshop to observe how painters used chiaroscuro, or to conduct interactive experiments with virtualized AI-generated artistic forms, resulting in more intuitive and profound learning experiences. However, current AI-based aesthetic education practices face three major tensions: algorithmic recommendations may reinforce cultural

homogenization (Wang et al. 2022, 319-351). The tracking of procedural data could lead to the over-quantification of evaluation; and virtual creative environments might undermine the foundational role of bodily perception in aesthetic development (Dwivedi et al. 2023, 750-776). Future development should emphasize a balance between technological tools and humanistic values. This can be achieved through measures such as establishing AI art curricula that include ethical review (Erişti and Freedman 2024, 57-79), developing generative models that preserve cultural diversity (Kumar et al. 2019, 135-155), and designing blended learning cycles that integrate offline artistic practice within metaverse-based education (Park and Kim 2022, 4209-4251). It is essential that these technological applications adhere to educational principles rather than serve merely as technical demonstrations, thereby facilitating a positive paradigm shift. A balanced approach involves organically integrating technological tools with humanistic discourse, for example, following a VR-based visit to a virtual museum, guiding students to reflect on how digital media reshape our modes of aesthetic perception, or facilitating comparisons between the emotional expressiveness of AI-generated art and human creations.

Cultural Aesthetic Education Integrating Global Perspectives with Local Roots

In an increasingly globalized and digitalized world, future aesthetic education must cultivate students who possess both an open international outlook and deep cultural grounding. On one hand, students should understand the artistic expressions and aesthetic values of diverse cultural traditions, including resources ranging from the Western Renaissance to traditional Chinese aesthetics. On the other hand, aesthetic education should also guide students to critically reflect on the power dynamics within globalized cultural production, such as how mainstream algorithmic platforms influence the formation of our aesthetic tastes. When engaging with globally prevalent technological art phenomena like Ameca, students need to comprehend the universal technical logic behind it, while also exploring ways to creatively adapt and transform it through local cultural perspectives. This approach helps avoid the trap of cultural homogenization and encourages the development of a more inclusive and critically aware aesthetic literacy.

The Pluralistic Innovation of the Aesthetic Education Evaluation System

Traditional aesthetic education evaluation often focused on skill acquisition and work completion, whereas future evaluations will place greater emphasis on multiple dimensions such as innovativeness, criticality, and growth. University case studies in aesthetic education confirm that when AI is responsible for assessing technical indicators while teachers concentrate on qualitative analysis, educators and students can engage in more in-depth discussions about the cultural metaphors and philosophical expressions within artworks. This complementary model provides a practical pathway for "higher-order learning": by combining the vast amounts of process data processed by machines with the contextualized interpretation at which humans excel, it ultimately enables the evaluation paradigm to transition from instrumental rationality to value rationality (De Bruyn et al. 2020, 91-105).

For aesthetic education in the AI era, the assessment and feedback mechanisms for specialized courses should be more comprehensive and scientific. There is a

particular need to develop evaluation tools capable of assessing human-machine collaborative creative processes and outcome-based (OBE) results, as well as qualitative methods that can capture students' aesthetic sensitivity, depth of cultural understanding, and capacity for ethical reflection. This also involves introducing technological assessment means and constructing an evaluation system based on data analysis (Han 2024, 55-57). One possible direction is to adopt a "process portfolio" assessment method. This involves collecting comprehensive process materials from students' art projects, including conceptual sketches, experimental records, reflection journals, and final works. By integrating AI analytical tools with humanistic teacher evaluation, a holistic understanding of students' aesthetic literacy development can be formed. This approach not only focuses on the final product but also values the intellectual development, emotional experience, and value formation that occur during the creative process.

The Systematic Construction of a Social Ecosystem for Aesthetic Education

Aesthetic education is not merely an artistic activity; it constitutes a form of social education deeply intertwined with social development and cultural inheritance (Guo and Wu 2024). Future aesthetic education will transcend the boundaries of schools to construct a social ecosystem built on collaborative synergy among schools, families, social institutions, and cultural industries. Institutions such as art museums, science museums, media organizations, and art groups can all become vital partners in aesthetic education, providing both resource support and practical platforms. Digital platforms, particularly social media, play an increasingly significant role in shaping the aesthetic values of adolescents. Guiding these platforms to exert a positive educational function represents an urgent challenge requiring exploration. For instance, technology companies could open educational access to AI art platforms; schools could organize visits to digital art exhibitions; and families could encourage children to participate in online-offline integrated art creation activities. Together, these efforts would form a multi-stakeholder collaborative network for aesthetic education.

Ethical Reflection and Value Guidance

Ethical reflection and value guidance are indispensable to aesthetic education in the AI era. As AI art forms like Ameca raise concerns about the erosion of human subjectivity, emotional manipulation, and privacy violations, aesthetic education must cultivate critical awareness and ethical judgment in students. This form of reflective education is not simply a technophobic reaction but aims to guide students in dialectically examining the complex relationship between humans and technology: while AI can expand our capacity for artistic expression, it should not become a substitute for genuine human interaction; although algorithms can analyze aesthetic preferences, they should not dictate what is beautiful or worth creating. Contemporary aesthetic education needs to place greater emphasis on the deep integration of technology and art, promoting the innovation and development of art education models, while persistently maintaining a humanistic reflection on technology and providing firm value guidance (Xiao 2025, 134-140). Through various forms such as philosophical discussion, ethical debate, and critical creation, aesthetic education can

help students embrace technological innovation while safeguarding the core values of humanistic spirit.

Specific Teaching Case: "From the Renaissance to AI: An Exploration of Subjectivity in Portrait Art" Project

To translate the aforementioned theoretical framework into concrete practice, we have designed an interdisciplinary project-based learning unit titled "From the Renaissance to AI: An Exploration of Subjectivity in Portrait Art," intended for higher education art courses. This project targets university students and aims to guide them in deeply reflecting on core philosophical issues in artistic creation, such as authorship, the nature of creativity, and artistic authenticity, by comparing the tradition of Renaissance portraiture with contemporary Generative Adversarial Networks (GAN) technology. The project is structured to cultivate students' integrated competencies, equally balancing technological literacy with humanistic critical thinking.

The project is structured around a central question that runs throughout its entirety: "In portrait creation, how are the author's intention, emotion, and technique represented? What changes occur in this representation when the creative subject shifts from a human to an algorithm?" At the knowledge level, students are required to understand the technical characteristics of Renaissance portraiture and Humanist thought, while also grasping the basic principles of Generative Adversarial Networks and their application mechanisms in art generation. At the skill level, students will gain hands-on experience with the technical processes of tempera painting or digital copying, and will practically operate pre-trained Stable Diffusion models to generate images. Ultimately, at the literacy level, the project aims to foster students' ability for critical comparative analysis, leading to deep reflection on the nature of artistic creation as mediated by technology.

The implementation of the project consists of three phases, each building progressively upon the last.

The first phase focuses on immersion in and imitation of the Humanist tradition. Students select representative Renaissance portrait works and practice reproduction using either traditional materials or digital media. Instructors emphasize guiding students to perceive the inner vitality of the figures and to analyze how artists balanced "ideal beauty" with "individuality" through composition, light and shadow, and details such as gestures and gaze. This process enables students to understand how the Renaissance celebration of "humanity" was realized through technical means.

Phase two shifts towards technically intervened generation and experience. Students use high-definition portrait photos of real individuals as datasets to operate pre-trained Stable Diffusion models for generating a series of "AI portraits." Throughout this process, students are required to observe and record how the algorithm "learns" the distribution of facial features, how it reassembles and generates new images, and to critically reflect on the following: Does the "creativity" of the algorithm stem from the internalization of data patterns or does it constitute genuine innovation? Is its output essentially "generation" or "recombination"? And in this process, is the human role limited solely to that of data provider and parameter adjuster?

Phase three constitutes the core of the project: critical comparison and comprehensive reflection. Thematic seminars are organized to guide students in comparing their manual reproductions with AI-generated portraits across three dimensions. First, the technical and procedural dimension, which contrasts the embodied practice of brushstroke-by-brushstroke creation with data-driven automated generation. This comparison examines how differences in creative experience influence the perception of a work's "value" and "artistic quality." Second, the dimension of subjectivity and intentionality, which analyzes the fundamental differences between the personal understanding and aesthetic choices infused during manual imitation and the unconscious computations of AI. This leads to debates on how the identity of the "author" is redefined in technological contexts, and whether "emotional expression" originates from the creator or is projected by the viewer. Third, the aesthetic and authenticity dimension, which differentiates between the "ideal beauty" pursued in the Renaissance and the "average beauty" or "hyper-reality" generated by AI. It explores why AI-generated faces often carry an "uncanny" sense of detachment and how this aesthetic characteristic challenges traditional standards of beauty.

The final project output requires students to submit a reflective report or creative statement. This document should not only showcase both types of works (traditional and AI-generated) but also systematically articulate the philosophical reflections developed during their practical experience, addressing the core questions raised throughout the project. The value of this case lies in its ability to translate grand debates in the philosophy of technology and art theory into tangible teaching practices. It allows students to understand, through firsthand experience, how technology reshapes artistic creation and aesthetic perception. The project does not aim to train students to become technical experts or artistic masters. Rather, through hands-on, comparative practice, it encourages them to become reflective users of technology and conscious guardians of humanistic values. This process fosters the development of a critical understanding and appreciation of AI art. This project-based learning approach perfectly embodies the concept of "Integrated Five-Education," achieving synergistic development of technological literacy, artistic cultivation, and critical thinking (Zhang 2024). It represents the core of what future aesthetic education strives to cultivate: critical thinking and an innovative personality.

CONCLUSION

The evolution of artistic forms, from Renaissance portraiture to the AI robot Ameca, reflects both the continuous expansion and deepening of mediums for human aesthetic expression. The future development of aesthetic education must draw wisdom from enduring artistic traditions, such as the humanistic values and the perpetual pursuit of beauty established during the Renaissance, while also embracing an open and innovative approach to the challenges posed by technological change. Positioned between humanity and technology, aesthetic education ought to serve as a bridge rather than a subsidiary, cultivating well-rounded individuals capable of harnessing technological tools while engaging in humanistic reflection. This balanced

paradigm of aesthetic education will empower learners to maintain sensitivity to beauty, pursuit of truth, and commitment to goodness, regardless of technological shifts.

In response to the rapid advancement of AI, aesthetic education must not only embrace technological innovation but also preserve critical humanistic reflection, sustaining a creative tension between instrumental rationality and value rationality. Ultimately, it should aim to nurture a new generation equipped with both technological literacy and artistic cultivation, thereby contributing meaningfully to future society.

REFERENCES

- Ai, Z. 2013. "Portrait Painting in the Italian Renaissance: Research and Its Implications." *Art Era: Aesthetics* (Part B) (6): 62-64.
- Allam, Z., A. Sharifi, S. E. Bibri, D. S. Jones, and J. Krogstie. 2022. "The Metaverse as a Virtual Form of Smart Cities: Opportunities and Challenges for Environmental, Economic, and Social Sustainability in Urban Futures." *Smart Cities* 5 (3): 771-801. <https://doi.org/10.3390/smartcities5030040>.
- Bandi, A., P. V. S. R. Adapa, and Y. E. V. P. K. Kuchi. 2023. "The Power of Generative AI: A Review of Requirements, Models, Input-Output Formats, Evaluation Metrics, and Challenges." *Future Internet* 15 (8): 1-60. <https://doi.org/10.3390/fi15080260>.
- Braidotti, Rosi. 2013. "Posthuman Humanities." *European Educational Research Journal* 12 (1): 1-19. <https://doi.org/10.2304/eerj.2013.12.1.1>.
- Cai, Y. 2024. "AI-Driven Transformation of Scientific Research Paradigms: A Study on AI Literacy and Educational Strategies from an Interdisciplinary Perspective." *Library Journal* 43 (403): 20-27.
- Chen, Mingxi. 2015. "From Deity to Human: 'Mona Lisa' and the Renaissance." *Art Education* (8): 42-44.
- Chen, Y. 2024. "Integrating the Spirit of Chinese Aesthetic Education into Mental Health Education in Higher Education." *Advances in Psychology* 14 (4): 674-680.
- Cui, N. 2025. "Portrait Painting in the Italian Renaissance: A Study." MA Thesis, Huazhong Normal University.
- De Bruyn, A., V. Viswanathan, Y. S. Beh, J. K. E. Brock, and F. von Wangenheim. 2020. "Artificial Intelligence and Marketing: Pitfalls and Opportunities." *Journal of Interactive Marketing* 51 (1): 91-105. <https://doi.org/10.1016/j.intmar.2020.04.007>.
- De Gloria, A., F. Bellotti, and R. Berta. 2014. "Serious Games for Education and Training." *International Journal of Serious Games* 1 (1). <https://doi.org/10.17083/ijsg.v1i1.8>.
- Dwivedi, Y. K., L. Hughes, A. M. Baabdullah, S. Ribeiro-Navarrete, M. Giannakis, Y. K. Al-Debei, D. Dennehy, et al. 2022. "Metaverse Beyond the Hype: Multidisciplinary Perspectives on Emerging Challenges, Opportunities, and Agenda for Research, Practice and Policy." *International Journal of Information Management* (66): 102542. <https://doi.org/10.1016/j.ijinfomgt.2022.102542>.

- Dwivedi, Y. K., L. Hughes, Y. Wang, A. K. Alalwan, J. Ahn, S. Balakrishnan, J. Barta, et al. 2023. "Metaverse Marketing: How the Metaverse Will Shape the Future of Consumer Research and Practice." *Psychology & Marketing* 40 (4): 750–776. <https://doi.org/10.1002/mar.21767>.
- Erişti, S. D. B., and K. Freedman. 2024. "Integrating Digital Technologies and AI in Art Education: Pedagogical Competencies and the Evolution of Digital Visual Culture." *Participatory Educational Research* 11 (1): 57–79. <https://doi.org/10.17275/per.24.4.11.1>.
- Farooq, N. 2024. "Gothic Whispers: Architecture in the Age of Darkness." *Kashf Journal of Multidisciplinary Research* 1 (5): 25–35.
- Gan, Lu. 2008. "Schiller's Theory of Human Nature and Aesthetic Education Thought: Reading On the Aesthetic Education of Man." *Hundred Schools in Art* 24 (S1): 25–27.
- Gao, Y. 1999. "Perspective and Space in Renaissance Painting." *Journal of Nanjing University of the Arts: Fine Arts and Design* (2): 42–46.
- Gao, Y. 2023. "Visible Surface, Composition, and Pictorial Space: Insights from Alberti's On Painting." *Chinese Book Review* (2): 93–101.
- Guo, X., and Y. Wu. 2024. "Interweaving, Divergence, and Reconciliation: Constructing a Model of Social Aesthetic Education through Public Art." *Public Art* (2).
- Han, K. 2024. "Rethinking the Evaluation of Aesthetic Education Courses in Universities Based on Outcome-Based Education (OBE)." *Frontiers in Modern Education* 5 (3): 55–57.
- Hayles, N. Katherine. 2014. "Cognition Everywhere: The Rise of the Cognitive Nonconscious and the Costs of Consciousness." *New Literary History* 45 (2): 199–220. <https://doi.org/10.1353/nlh.2014.0011>.
- Holmes, W., K. Porayska-Pomsta, K. Holstein, E. Sutherland, T. Baker, S. B. Shum, O. C. Santos, et al. 2022. "Ethics of AI in Education: Towards a Community-Wide Framework." *International Journal of Artificial Intelligence in Education* 32 (3): 504–526. <https://doi.org/10.1007/s40593-021-00239-1>.
- Hou, Y., S. Kenderdine, D. Picca, J. Egloff, and A. Adamou. 2022. "Digitizing Intangible Cultural Heritage Embodied: State of the Art." *Journal on Computing and Cultural Heritage* 15 (3): 1–20. <https://doi.org/10.1145/3494837>.
- Jiang, Chengyong, and Anbin Li. 2005. "The Motif of 'Human' and Modern Western Values: A New Perspective on Humanist Literature." *Literary Review* (12): 23–29, 166.
- Kumar, V., B. Rajan, R. Venkatesan, and J. Lecinski. 2019. "Understanding the Role of Artificial Intelligence in Personalized Engagement Marketing." *California Management Review* 61 (4): 135–155. <https://doi.org/10.1177/0008125619859317>.
- Li, J., and Q. Liu. 2024. "2023 Review of Aesthetic Education Research in China (Part II)." *Journal of Aesthetic Education* 15 (5): 14–25.
- Li, X. 2023. "A Study on the Application of Situational Teaching Method in Art Appreciation Classes." *Advances in Education* 13 (5): 8135–8140.
- Li, Y. 2009. "A Brief Discussion on Techniques and Expressions in Western Painting Materials." *Success: Education* (8): 283–284.

- Liu, C., and Y. Wang. 2018. "Challenges and Countermeasures to Cultural Confidence in China under the Background of Globalization." *Journal of Chongqing Jiaotong University (Social Sciences Edition)* 18 (4): 6–12.
- Liu, J. 1994. "The Evolving Poetic Anthropology: The Triple Negation of Theological Systems in European Literature from the 14th to 18th Centuries." *Journal of Northeast Normal University (Philosophy and Social Sciences Edition)* (4): 63–68.
- Luo, Q. 2012. "The Gaze in Portrait Painting: Filling and Repairing the Void of the Self." *Art Journal* (5): 123–127.
- Lyu, Y., X. Wang, R. Lin, and Z. Wu. 2022. "Communication in Human–AI Co-Creation: Perceptual Analysis of Paintings Generated by Text-to-Image System." *Applied Sciences* 12 (22): 11312. <https://doi.org/10.3390/app122211312>.
- Onesi-Ozigagun, O., Y. J. Ololade, N. L. Eyo-Udo, and O. O. Olawale. 2024. "Revolutionizing Education through AI: A Comprehensive Review of Enhancing Learning Experiences." *International Journal of Applied Research in Social Sciences* 6 (4): 589–607. <https://doi.org/10.51594/ijarss.v6i4.1103>.
- Park, S. M., and Y. G. Kim. 2022. "A Metaverse: Taxonomy, Components, Applications, and Open Challenges." *IEEE Access* (10): 4209–4251. <https://doi.org/10.1109/ACCESS.2021.3140175>.
- Peng, Y. 2013. "The Aesthetic Orientation and Educational Value of Integrating Technological Aesthetics into Art Education in Higher Education." *Aesthetics and the Times (Part B)* (12).
- Qu, H., and Y. Yang. 2021. "A Four-Stage Progressive Model for Enhancing College Students' Innovation Capabilities in the Context of Art Education." *Creative Education Studies* 9 (3): 828–833.
- Sang, X. 1991. "A Philosophical Reflection on the Status, Role, and Interrelationships of the 'Five Educations'." *Chinese Social Sciences* (6): 8.
- Sydykova, R., B. Ospanov, A. Anessova, and A. K. Zhumabekova. 2018. "Theoretical Foundations of Modernized Education Paradigm." *The Turkish Online Journal of Design, Art and Communication (Special Edition)*: 2855–2863. <https://doi.org/10.7456/1080SSE/364>.
- Tang, H., and B. Xu. 2021. "Integrated Aesthetic Education: The 'Bond' of Holistic Five-Domain Education." *Sichuan Education* (18): 8.
- Tao, F. 2024. "Artworks in the Era of Artificial Intelligence Simulation." *Nankai Journal (Philosophy and Social Sciences Edition)* (5): 54–63.
- Wang, Q. 2024. "Is AI Art Art? A Perspective from Artistic Production." *Social Sciences Journal* (2): 230–236.
- Wang, Y., Z. Su, N. Zhang, R. Xing, D. Liu, T. H. Luan, and X. Shen. 2022. "A Survey on Metaverse: Fundamentals, Security, and Privacy." *IEEE Communications Surveys & Tutorials* 25 (1): 319–351. <https://doi.org/10.1109/COMST.2022.3202047>.
- Xiao, S. 2025. "The Logical Framework and Practical Path for High-Quality Development of Aesthetic Education in Higher Education under the Perspective of New Quality Productivity." *Journal of North China Electric Power University (Social Sciences Edition)* 6 (1): 134–140.

- Xiao, Y. 2025. "Research on Aesthetic Education Reform and Innovation in Art Practice Courses in Higher Education." *Teacher Education and Innovation* 8 (4).
- Yenduri, G., M. Ramalingam, G. C. Selvi, Y. Wang, S. R. Gudala, L. J. J. Mary, S. Basheer, et al. 2024. "GPT (Generative Pre-Trained Transformer) - A Comprehensive Review on Enabling Technologies, Potential Applications, Emerging Challenges, and Future Directions." *IEEE Access* (12): 54608-54649. <https://doi.org/10.1109/ACCESS.2024.3389497>.
- Zhang, J. 2019. "From Cyberfeminism to Genderlessness: The Evolution of Ideological Trends in New Media Art - A Case Study of Lu Yang's Works." *Art and Technology* (10): 3.
- Zhang, Jie. 2024. "Accelerating the Construction of the 'Five Educations Integration' System in Higher Education Institutions." *Red Flag Manuscripts*, December 14. <https://www.qstheory.cn/20241213/e92bb1df593547809e9d4a26d1e8f3db/c.html>. Access date: May 13, 2026
- Zhang, Xuchun. 2002. "Revisiting Romanticism and Modernity." *Literary and Artistic Studies* (2): 12–21.
- Zhao, Q. 2024. "Exploring the Practical Path of Art Appreciation Courses in Higher Education under the Integrated Perspective of 'Aesthetic Education + Ideological and Political Education'." *Research Achievements and Communication* (3): 0219–0222.
- Zhao, X. 2025. "Breakthroughs, Lags, and Contradictions: An Analysis of the Practices and Effects of New Media Art Aesthetic Education in China." *Frontiers in Education* (10): 1483559. <https://doi.org/10.3389/feduc.2025.1483559>.
- Zheng, S. 2025. "Artificial Intelligence-Driven Design of Aesthetic Education Curricula in Higher Education." *Education Insights* 2 (6): 247–256.
- Zhu, J. 2008. "Should the 'Aura' Fade Away? Rereading The Work of Art in the Age of Mechanical Reproduction." *Journal of Yunnan Arts Institute* (3): 34–35.
- Zhu, Y., and Y. Wu. 2019. "Mutual Clarification in the Teaching System of Art History and Theory under the Expanded Goal of Aesthetic Education." *Architecture & Culture* (9): 3.

***Corresponding Author**