Philosophy and Social Science Vol. 1 No. 11, 2024

The Relationship Between Art and Ill-Structured Domain Knowledge

Tengcheng Liu*, Ping Xu
School of Humanities and Management, Shandong Xiandai University, Jinan, Shandong, China
**Corresponding Author.*

Abstract: This paper adopts the concept of ill-structured domain knowledge as a foundational framework to investigate its characteristics and the intrinsic relationship with art. Ill-structured domain knowledge is characterized by complexity, ambiguous boundaries, and uncertain rules, with its acquisition relying on the comprehension and flexible application of specific contextual cases. As a form of knowledge, art also exhibits the distinct traits of ill-structured domains. The discussion delves into the relationship between art and cognitive abilities, the boundaries of art, art appreciation, artistic creation, and the connection between art and aesthetics. This study aims to provide a fresh perspective for understanding and analyzing the phenomenon of art in daily life.

Keywords: Art; Ill-Structured Domain Knowledge; Complexity; Cognitive Flexibility; Aesthetic

1. Introduction to the Concept of Ill-Structured Domain Knowledge

Rand J. Spiro and his colleagues, while studying educational issues, observed that learning complex knowledge involves challenges that do not arise when acquiring simpler knowledge. These complex areas of knowledge include literary comprehension, biomedical cognition, historical cognition, military strategy, and more. To address these challenges, they proposed the Cognitive Flexibility Theory. A fundamental concept within this theory is the "ill-structured domain," which serves as the foundation for explaining issues related to art in this paper.

1.1 Basic Concept of Ill-Structured Domains

In early education, knowledge is typically straightforward and can be represented through clear and concise logical concepts. For example, learning to read a clock or understanding traffic signals involves well-defined rules and applications. However, as individuals progress to higher levels of education, the knowledge they encounter becomes increasingly complex, and the boundaries of application scenarios grow more ambiguous. Spiro defines domains characterized by content complexity and irregular application contexts as "ill-structured domains," and the knowledge applied within these domains is referred to as "ill-structured domain knowledge." The specific instances that require such knowledge are known as "case."

To illustrate this concept further: consider a film critic analyzing a movie. The movie serves as a case, while film criticism is an ill-structured domain. Elements such as cinematography techniques and marketing strategies belong to related domains. When the critic seeks to interpret a metaphor in the film, the knowledge they draw upon may include cinematographic methods, expressive techniques, and psychology, all of which constitute the specific knowledge of this ill-structured domain. Successfully interpreting a film and effectively applying such knowledge requires more than rote learning—it demands deep analysis and nuanced understanding.

Another example involves a manager leading a small team. The team itself represents a case, and the social relationships and personal matters of team members outside of work may influence their performance, thereby affecting the overall operation of the team. Consequently, the boundaries of "management" are inherently ambiguous. Managing a team of ten differs significantly from managing a team of one hundred, even though there are similarities. Effectively leading a team and integrating diverse management strategies require complex thinking and flexible application of knowledge,

which cannot be achieved through simple formulaic learning.

Compared with well-structured domain knowledge learning, ill-structured domain knowledge learning has the following characteristics: “knowledge acquisition content becomes more complex and the relationships across the cases that knowledge has to be applied to become more irregular. [……] the goals of learning shift: (a) from the attainment of superficial familiarity with concepts and facts to the mastery of important aspects of conceptual complexity, and (b) from knowledge reproduction to knowledge use (transfer, application).” [1]

Specifically, knowledge in ill-structured domains is characterized by such features as: “nonuniformity of explanation across the range of phenomena to be covered, nonlinearity of explanation, nonadditivity following decomposition, context-dependency, irregularity of overlap patterns across cases (reducing the effectiveness of prototypes and simple analogies), absence of wide scope defining features for category application, and so on.” [1]

1.2 Cognitive Flexibility and Mastery of Ill-Structured Domain Knowledge

The way to deal with ill-structured domain knowledge learning is to have cognitive flexibility, which Spiro directly describes in his paper: “By cognitive flexibility we mean the ability to spontaneously restructure one's knowledge, in many ways, in adaptive response to radically changing situational demands (both within and across knowledge application situations). This is a function of both the way knowledge is represented {e.g., along multiple rather than single conceptual dimensions) and the processes that operate on those mental representations.” [1]

What is required for learning complex content materials within ill-structured domains is:

“Multiple representations—multiple explanations, multiple analogies, multiple dimensions of analysis. Mental representations need to be open rather than rigid and closed; nonlinear instructional sequences need to be followed to avoid missing key points; assumptions of regularity and homogeneity have to be replaced by acknowledgment of irregularity and heterogeneity. [……] the ability to adaptively re-assemble diverse elements of knowledge to fit the particular needs of a given understanding or problem-solving situation. In an ill-structured domain, one cannot fit the wide variety of real-world cases of a given type that will be encountered to the same "plaster-cast" knowledge structure (although a common failing of advanced learners is that they will try very hard to do this).” [1]

Based on Spiro’s broader insights, cognitive flexibility requires learners to adhere to the following four principles

1.2.1 Master specific cases

When learning knowledge in ill-structured domains, mastering specific cases is the primary step. A case represents a particular scenario or event within the broader ill-structured domain. Although cases may appear similar, they often differ significantly in details. These details cannot be dismissed as trivial; overlooking them can lead to substantial challenges in problem-solving. For instance, in medical diagnosis, two patients may both present with headaches, yet one may be experiencing a migraine, while the other could be showing early signs of a brain hemorrhage. Ignoring medical history, symptom specifics, or test results could result in misdiagnosis. Physicians must carefully analyze each patient’s unique circumstances, combining examination data and medical history to arrive at an accurate diagnosis. Human understanding of phenomena is often derived from interactions with specific cases. Therefore, mastering these cases is the foundational step in acquiring knowledge in ill-structured domains. [2]

1.2.2 Expand the range of cases

To understand the overall nature of an ill-structured domain, one must engage with as many relevant cases as possible. From a single case, abstract knowledge structures can be derived to explain the scenario and guide problem-solving. Clear case boundaries are more likely to define simpler problems. However, as boundaries become blurred, abstract knowledge loses its dominance in ill-structured domains. While abstract knowledge stems from cases, no abstraction or generalization can fully encapsulate the diverse variations within complex cases, leading to limitations in cross-case applications. To accurately grasp an ill-structured domain, knowledge structures must be diverse. A single

knowledge structure might work for certain cases but fail for others. Thus, a person with exposure to a greater number of cases can derive more knowledge structures, and a richer collection of these structures enhances their ability to tackle new cases. Take doctors as an example: this profession demands both specialized knowledge and adaptability, and its training process is highly time- and energy-intensive.

1.2.3 Decompose and reconstruct existing cases

It is essential to decompose and reorganize existing cases to effectively address uncertain new cases. Just as it is inadvisable to rely excessively on abstract conceptual knowledge when dealing with new cases, overdependence on existing cases should also be avoided, particularly the rigid application of a single precedent to a new situation. A single fixed knowledge model or case is often insufficient to provide the comprehensive knowledge context required for a new case. Even when a wealth of preparatory cases has been accumulated, capable of covering the broader knowledge background of a new case, challenges may still arise in effectively applying the content and structure of prior cases to the new case. The complexity and variability of cases are critical barriers to successful application. Therefore, to enable the transfer and application of knowledge, it is necessary to flexibly decompose and reorganize individual cases. [3]

1.2.4 Acknowledge the ambiguity of ill-structured domains

A narrow perspective suggests that if we endeavor to construct knowledge with sufficient complexity, we will inevitably find a knowledge structure that corresponds to a complex case. However, this view is fundamentally at odds with the concept of "ill-structuredness." The essence of "ill-structured" lies in acknowledging the boundary ambiguity of cases and their irregular intersections with other cases or domains. For instance, while the rules of Go are complex, the game itself has well-defined rules and a clear objective—to win the match. In contrast, strategic decision-making between nations involves trade-offs across multiple dimensions, with diverse solutions that are often creative. The outcomes extend beyond simple victory or defeat, potentially impacting nations not directly involved in the confrontation. Thus, even when decomposition and reorganization lead to a relatively suitable knowledge structure, it is crucial to resist definitively categorizing a case based on that structure. This perspective aligns with the study of history, where it is understood that all history is contemporary history. Each new event provides fresh perspectives, reshaping our interpretations of past events. [4]

2. Art and Ill-Structured Domain Knowledge

There exists a tendency in defining what is art that the essence of art does not lie in its intrinsic attributes but in its position or function within society. The most extreme expression of this viewpoint is the assertion that a bag of trash, if placed under a spotlight in an art gallery, functions within the "field" of art and is thus considered art. However, if the same bag of trash is left beside a street-side garbage bin, it ceases to perform an artistic function and is not regarded as art. The key lies in how people define art, a definition intricately tied to factors such as politics, economics, and philosophical thought. Therefore, whether something is considered art does not depend solely on its inherent characteristics.

This paper aims to explore the essence of art, seeking to determine whether there exists a specific attribute that qualifies something as art if possessed, or disqualifies it if absent. My argument is that art does indeed have an essential attribute. However, this essence is neither eternal nor unchanging. As the carrier of art—human beings—evolves, the essence of art should also change accordingly.

Art is embedded within the various forms of knowledge created by humanity. The definition of "knowledge" is complex and may be understood as the externalization of the functions of the nervous system or as the externalization of cognition or representation. These definitions, however, are too fundamental and encompass an overly broad range of phenomena. For simplicity, we can provisionally define "knowledge" as content that can be externalized into material carriers such as symbols, sounds, and images, and that conveys useful information to others.

The essence of art lies in its being a type of knowledge with specific characteristics. All

things intentionally or unintentionally labeled as art share a common feature: they represent the creator's understanding and expression of complex, ill-structured domain things. Art itself is inherently complex, focusing on subjects not yet fully recognized or understood by humanity and exhibiting the typical characteristics of ill-structured domain knowledge.

This definition extends beyond traditional forms of art such as literature, painting, music, dance, theater, and film. Many things in other complex ill-structured domains are also deemed artistic when skillfully executed and capable of evoking aesthetic appreciation. Examples include the art of oration, the art of war, the art of football, the art of management, and the art of interpersonal relationships. Success in these domains often involves deep understanding and high levels of creativity in navigating complex situations.

In the following sections, I will analyze the relationship between art and ill-structured domain knowledge, elucidating how art embodies and interacts with the characteristics of this type of knowledge.

2.1 Art Relies on Cognitive Functions with Complex Constructive Capabilities

Art primarily relies on three cognitive functions: language, vision, and hearing. Language serves not only as a tool for rational thought but also as a medium for expressing deep, nuanced feelings. While advanced cognition in the brain extends beyond language, it remains the primary mode of externalizing various cognitive activities. Through language, individuals can convey complex ideas, emotions, and abstract concepts. The visual cortex of the brain is highly complex, comprising multiple regions responsible for processing properties such as shape, boundaries, color, and motion. These attributes are integrated, allowing humans to perceive the world in a richer way than a camera. While photographs faithfully capture light and shadow information, paintings often exhibit more pronounced visual characteristics and richer layers of visual depth. Hearing involves recognizing attributes such as the direction, volume, timbre, and frequency of sounds, which reveal the motion state of the sound-emitting object. To interact effectively with these objects, humans must integrate this auditory information with more complex and abstract cognition. It is perhaps due to this need for interaction that sound is closely linked to one of humanity's more fundamental decision-making mechanisms—emotion.

The common characteristic of these three sensory modalities is their strong ability to construct knowledge structures. Over the course of prolonged survival competition, humans evolved these advanced cognitive tools to navigate a complex and ever-changing environment, seeking out patterns in the information. Therefore, language, vision, and hearing are not only the primary sensory modalities for humans but have also become fundamental ways of understanding the world and conveying information.

Other sensory functions, such as smell, taste, and bodily sensations, are less central to art because their capacity for constructing knowledge structures is comparatively weaker. These senses are closely tied to memory and can encode external information but operate in a more straightforward and fixed manner. For instance, pain responses are limited to a few specific factors, and while olfactory perceptions may involve various elements, they rarely integrate into complex multidimensional cognition.

Some artists have attempted to expand the boundaries of art by incorporating these simpler sensory modalities into their creations. However, this approach does not necessarily produce groundbreaking results, as these basic sensory functions have never been absent from artistic expression. Art inherently reflects diverse cognitive processes due to the brain's complex, holistic operations. For example, a picnic scene in literature or painting can convey sensory details like the taste of food, the sound of conversation, the sensation of the wind, the warmth of sunlight, and the harmony of the atmosphere, alongside the protagonist's thoughts. The artist translates these multidimensional experiences into artistic language, allowing the audience to resonate with them through analogous personal experiences.

Physiological studies also affirm the inclusion of simpler sensory functions in art. When information is repeatedly presented over time and space, associations between different senses strengthen, forming stable neural connections. For instance, a particular smell

may evoke memories of a city once lived in, reflecting learned associations. Some sensory systems are even inherently connected through shared neural pathways, a phenomenon known as synesthesia. For example, some individuals perceive the number "2" as yellow or the sensation of spiciness as pointed shapes. The strength and nature of such associations vary among individuals, influencing how they experience sensory connections.

In summary, art predominantly relies on language, vision, and hearing to externalize its expressions. However, it can encompass all cognitive processes, integrating perception, emotion, and cognition into its creations.

2.2 The Boundaries of Art

Art is defined by the creator's construction of a bounded world to convey intended ideas. Art does not aim for exhaustive detail, as such an approach would devolve into simple descriptive recording or technical realism. Artistic expression transcends sensory details through selective integration of various cognitive activities, culminating in a unique conceptual synthesis characteristic of artistic works.

This conceptual synthesis is not akin to a logical concept or proposition that can be summarized in a sentence or two. Instead, it aligns with the demands of cognitive flexibility, which resists oversimplifying complex cases to avoid distorting their understanding. Explaining this synthesis often resembles a film critic analyzing a cinematic metaphor—requiring extensive discussion, analogies, contrasts, and associations drawn from related cases. These combined cases approximate a reconstruction of the artwork's meaning, revealing its deep, multidimensional implications.

This integrated expression constitutes the "deep structure" of art. Viewers often interpret this as the "emotion" or "worldview" of an artwork. While those who appreciate art can experience the emotions and worldview in the work based on their own existing contexts and experiences, these interpretations are not equivalent to the deep structure itself. Instead, the deep structure of art is the selection and omission made during the artistic creation process, and the irregular connections between the various components within the work.

Artistic creation involves extracting knowledge structures from a series of related cases and flexibly combining these structures. While these cases are limited and have boundaries, their boundaries are often vague and irregular. It is this vagueness and irregularity that allows each piece of art to be uniquely embedded in the vast, infinitely complex, and diverse world.

2.3 Art Has Interpretive Space

The boundaries of an artwork and its connections to various domains are experienced differently by each viewer. Simply put, “a thousand readers yield a thousand Hamlets,” reflecting the openness of interpretations in ill-structured domains. However, this openness has its limits—not all interpretations are valid. When interpreting a work of art, it is essential to base judgments on potentially relevant cases, aligning them with the creator's intent and the desired behavioral goals of the work. The cognitive value of a piece should be assessed by its ability to resonate with the audience and effectively influence others. Creators must avoid deliberately making their work incomprehensible in the pursuit of self-expression, as the foundation of expressing oneself lies in first recognizing and understanding the world.

Opposite to completely arbitrary interpretations, oversimplification is also inadvisable. While everyone strives to find something meaningful in the works they love, these “discoveries” should never be regarded as the entirety of the piece. As required by cognitive flexibility, even when one can summarize a relatively suitable knowledge structure, one must resist using it to definitively label a case. If a viewer experiences certain feelings in a work and seeks confirmation from the creator, they are often unlikely to receive a fully satisfying answer, as creators frequently resist overly definitive interpretations of their work. This is not a tactic to provoke curiosity but rather an intentional or subconscious effort to counter absolute interpretations or excessive simplification. At times, even the creator may become lost in the complexity of their work, refusing to distill it into a fixed formula to preserve interpretive space. This leaves room for each observer to engage in personal interpretation and reflection.

The infinite possibilities of artistic interpretation lie in the fact that the process of interpretation is driven by diverse minds, each bringing its own collection of thoughts with blurred boundaries and irregular patterns. The unique experiences, cognitive structures, and ways of thinking of every observer or interpreter interact with the artwork, generating new understandings and perspectives. It is precisely this diversity and openness that endows an artwork with its boundless interpretive potential.

2.4 Creativity in Art Requires Flexibility

Boundaries arise from choices, and the manner of making these choices depends on how creators, after forming an understanding of certain aspects of the world, utilize the materials already present in their minds for creation. However, the concepts of knowledge in ill-structured domains cannot be uniformly applied to different cases. In practice, creators often face the reality that their experiences rarely provide perfectly fitting templates to draw from. To address this gap, creators need not only a wealth of accumulated experiences but also the ability to flexibly deconstruct and recombine the cases within those experiences.

Therefore, outstanding creators typically possess several key qualities: rich inner emotions, profound thinking abilities, keen observational skills, and extensive experience. These attributes enable creators to cultivate a diverse range of cases and to flexibly deconstruct and reassemble them.

Specifically, deconstruction involves breaking down existing knowledge, concepts, rules, or structures into smaller, fundamental components. This process requires a deep understanding and the ability to analyze the essence of problems. Reconstruction, on the other hand, integrates these deconstructed elements in entirely new ways, breaking free from existing frameworks to pursue innovative forms of expression. Flexibility lies at the heart of both deconstruction and reconstruction, allowing creators to transcend fixed paradigms and avoid being constrained by established rules—a hallmark of creative thinking.

Similarly, appreciators also need these capabilities to better understand and appreciate various works of art. Only when appreciators engage in a similar process of internal deconstruction and reconstruction can they fully grasp the profound meanings and creative value conveyed by artistic works.

2.5 Art as Well-Utilized Knowledge of Ill-Structured Domains

Complex ill-structured knowledge domains such as warfare, interpersonal communication, rhetoric, management, and soccer often produce outcomes that are deeply satisfying or awe-inspiring when mastered to an exceptional level. This effect leads people to label what they observe as “art.” The effect itself is an experience—one that is pleasurable and positive, independent of political, economic, or social functions. This experience is referred to as “aesthetic appreciation.”

Whether something evokes aesthetic appreciation serves as a critical criterion in determining whether it is considered art. But how is this sense of enjoyment generated? Neuroaesthetics provides some explanations. Studies indicate that the orbitofrontal cortex (OFC) plays a pivotal role in aesthetic experiences, facilitating sensory integration, emotional evaluation, and reward system interaction. Experiments using functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) have shown that participants viewing art, listening to music, or observing other visual stimuli rate their experiences based on aesthetic appeal. Results reveal a strong positive correlation between high aesthetic ratings and significant activation in the OFC. [5] The collaboration between the OFC and the reward system highlights the neural underpinnings of aesthetic pleasure. Research further demonstrates that under intensely aesthetic stimuli, functional connectivity between the OFC and the nucleus accumbens increases notably. This interplay supports the hypothesis that the OFC transforms sensory inputs into emotional value, amplifying pleasure through the reward system. [6]

Evidence from studies on patients with OFC damage underscores the OFC's essential role in aesthetic experiences. These individuals often show impairments in aesthetic judgment, such as difficulty distinguishing beauty from ugliness or significant changes in preferences for art. [7]

From an evolutionary perspective, human aesthetic preferences stem from biological instincts. Certain forms, such as healthy

appearances or safe environments, are linked to survival and reproductive benefits and are thus "rewarded" by the brain. For instance, symmetrical faces might signal healthy genetics, while landscapes with depth and texture may suggest abundant resources. The brain's natural preference for order and regularity—such as symmetry, repetition, and the golden ratio—facilitates efficient processing and prediction of external information. Moderately complex patterns, such as fractals in nature, stimulate the brain without overwhelming it. This optimal stimulation may have evolved to sharpen human observation and cognition. Over time, this mechanism became internalized through evolution, with the brain releasing dopamine to associate the experience of "beauty" with pleasure. [8]

Neuroaesthetics focuses on universal neural mechanisms, but "beauty" is not merely the outcome of biological instincts; it is a product of complex neural processing and cultural contexts working in tandem. Individual differences, cultural backgrounds, and psychological states play significant roles in shaping aesthetic experiences. Given that the brain's fundamental structure is modular and highly interconnected, the role of the OFC in aesthetic experience extends beyond basic aesthetic processing, encompassing multi-layered high-level cognitive activities such as perception, memory, and emotion. This integrative capacity makes aesthetic experience a confluence of biological, psychological, and cultural factors, resulting in its rich diversity and subjectivity. [9]

To address this diversity, researchers in neuroaesthetics have introduced the concept of " Significant form." Within the framework of this discussion, it is hypothesized that Significant form corresponds to a cognitively valuable knowledge structure. [10] Such a structure resonates well with pre-existing knowledge structures in the brain while also providing novel content, thereby receiving positive evaluation from the OFC, which in turn triggers dopamine release. The more natural a beautiful object is, the more fixed its structure tends to be, often aligning with well-structured knowledge. Conversely, aesthetic experiences that are more subjective and diverse are closely tied to enriched experiences and cognition, thus belonging to the realm of complex, ill-structured knowledge domains.

However, not everything that evokes an aesthetic experience can be considered art. Art is, first and foremost, a human creation, meaning it is an activity driven by the subjective intention to express. For example, is a beautiful human body considered art? While a beautiful body can indeed activate the OFC, evoking a sense of beauty, a living person cannot be simply labeled as a work of art. However, we can consider Greek sculptures or neoclassical paintings of human figures as art because they are human-made and interwoven with cultural concepts like courage, rationality, virtue, mythology, and religious thought, placing them firmly in the realm of complex structures. Therefore, art can be defined as human-made objects that evoke aesthetic experiences, characterized by their diversity and subjectivity.

However, the boundary between art and non-art is indistinct. For example, the appreciation of human beauty can occur by observing attractive individuals on the street, viewing their photographs, admiring sculptures created by artists, or reading a novelist's description of beautiful characters. In these examples, natural beauty gradually intertwines with the thoughts and expressive intentions of creators. From the perspective of the appreciator, there are instances when someone might remark, "At this moment, art is born," upon witnessing an objectively occurring event. In such cases, no individual may have intentionally created anything, as the event simply unfolded naturally. However, when the observer makes this declaration, it signifies that they have applied a certain level of selection and abstraction to the event, identifying a specific structural form within it. In this sense, the observer becomes both an appreciator and a creator, as their remark provides others with a unique lens through which to view the event. Therefore, the distinction between art and non-art remains inherently ambiguous.

In conclusion, the primary characteristics of art are as follows: Art is fundamentally a human-made construct and an externalized form of knowledge. This knowledge exhibits the traits of a complex, ill-structured domain, capable of eliciting resonance and possessing cognitive value. As a meaningful structure of knowledge, art evokes aesthetic appreciation.

This perspective, however, is not without

limitations. Our understanding of complexity remains insufficient, and categorizing knowledge into well-structured and ill-structured domains expresses contrasting characteristics along a single dimension, lacking precise or quantifiable criteria to assess complexity. Similarly, the mechanisms behind aesthetic experiences require further exploration. While neuroaesthetics provides a foundational theoretical framework, the intricate neural structures involved remain under-researched, limiting deeper analyses.

3. Summary

Human life unfolds within a complex and boundless world. To interact effectively with this world, humans must develop cognitive systems to understand it and communication systems to express that understanding. Art shares this purpose with other domains of knowledge, yet it is distinct in its approach.

From the perspective of art, evaluating the characteristics of various forms of human knowledge about the world reveals key distinctions. Art differs from religion, which provides highly subjective interpretations, attempting to explain matters of great importance that lack concrete evidence. Art also differs from pre-scientific theoretical knowledge, such as the yin-yang and five elements framework in traditional Chinese medicine, which strives to summarize practical experiences into a theoretical system encompassing various phenomena. Furthermore, art is distinct from science, which through controlled conditions, provides objective truths applicable under specific contexts. Art, on the other hand, interprets phenomena in complex, ill-structured domains. In areas where explanations are elusive, art boldly embraces ambiguity, preserving its authenticity by sacrificing completeness. When something can be explicitly articulated, it often represents a new scientific breakthrough, eliminating the need for art to address it. If such elements appear in art, they usually move away from implicit cores or deeper structures, becoming explicit components in the foreground. Thus, art facilitates profound and complex interactions between individuals and themselves, as well as between individuals and the world.

Art deserves a place among the various forms of human knowledge, but this place was not inherent from the beginning of the universe. Similar to roles such as artists, scientists, content creators on the internet, and e-sports players, art as a distinct domain emerged only when human affairs reached a more complex stage of development.

Currently, economic progress has significantly reduced the cost of artistic creation. Tools like paint, guitars, and cameras have become more affordable, accessible to the majority. Likewise, the cost of learning art has also decreased. Various video platforms are filled with free instructional resources, enabling more people to easily acquire artistic skills. Furthermore, the cost of communication has also dropped. The widespread use of smartphones and video platforms has made creation and interaction more convenient and frequent, equipping everyone with the material conditions to become an artist. As societal civilization advances, freedom of expression has improved, providing a more open and liberal environment for speech. This has greatly expanded the space for diversity in creation and thought. However, breakthroughs in AI technology are redefining the boundaries of creation, leading many to feel that traditional forms of artistic creation are losing their significance. This development has sparked reflection on the necessity of learning traditional skills such as painting, writing, and music in the modern era.

These developments have led to the realization that anyone can be an artist. At the same time, many perceive the collapse of traditional structures, experiencing a sense of "the death of art." However, in everyday life, the term "art" continues to be used, indicating that the concept of art has not lost its vitality. Therefore, this paper seeks to explore the "art" phenomena around us from a fresh perspective, one that broadens the scope of art's definition and invites further critique and discussion.

Acknowledgments

This paper is supported by Shandong Provincial Association for Science of Art and Culture (No. L2024Q05100105).

References

[1] Spiro, Rand J., and Jihn-Chang Jehng. Cognitive flexibility and hypertext: Theory and technology for the nonlinear and multidimensional traversal of complex subject matter. Cognition, education, and

multimedia. Routledge, 2012, 163-205.
[2] Spiro, Rand J., Feltovich, P. J., Jacobson, M. J., et al. Cognitive flexibility, constructivism, and hypertext: Random access instruction for advanced knowledge acquisition in ill-structured domains. Constructivism in education. Routledge, 2012, 85-107.
[3] Spiro, Rand J., Paul J. Feltovich, and Richard L. Coulson. Two epistemic world-views: Prefigurative schemas and learning in complex domains. Applied Cognitive Psychology, 1996, 10(7):51-61.
[4] Spiro, Rand J., Collins, B. P., Thota, J. J., et al. Cognitive flexibility theory: Hypermedia for complex learning, adaptive knowledge application, and experience acceleration. Educational Technology, 2003, 43(5):5-10.
[5] Ishizu, Tomohiro, and Semir Zeki. Toward a brain-based theory of beauty. PloS one 6.7 (2011): e21852.
[6] Ishizu, Tomohiro, and Semir Zeki. The brain's specialized systems for aesthetic and perceptual judgment. European Journal of Neuroscience, 2013, 37(9):1413-1420.
[7] Zeki, Semir, Romaya, John Paul, Benincasa, Dionigi M. T., et al. The experience of mathematical beauty and its neural correlates. Frontiers in Human Neuroscience, 2014, 8:68.
[8] Zeki, Semir. Clive Bell's "Significant Form" and the neurobiology of aesthetics. Frontiers in Human Neuroscience, 2013, 7: 730.
[9] Zeki, Semir. Neurobiology and the humanities. Neuron, 2014, 84 (1):12-14.
[10] Zeki, Semir, Oliver Y. Chen, and John Paul Romaya. The biological basis of mathematical beauty. Frontiers in Human Neuroscience, 2018, 12:467.