

Conditions For The Development Of Artistic Taste In Students Based On The Interpretation Of Fine Arts With Digital Technologies

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Abstract: The article provides a scientific analysis of the pedagogical conditions for the development of students' artistic taste based on the interpretation of works of fine art using digital means. The purpose of the study is to determine the influence of the mechanisms of digital interpretation on the aesthetic perception and critical thinking of students. The creation of an innovative educational environment and the application of modern pedagogical approaches are proposed as the main conditions. Also, the methodology of digital interpretation strengthens traditional art education and serves to increase the level of students' compositional knowledge and artistic taste.

Keywords: Innovation, visualization, intelligence, interactive, interpretation, immersion, competence, cognitive, imperative, inclusivity, manipulation.

Introduction: The modern knowledge society is undergoing fundamental changes due to digital innovations and applications, which are advancing human progress and changing social, economic, and political perspectives. From this point of view, higher educational institutions (HEIs) should combine theory and practice to prepare students for future professional activity and develop comprehensive skills. The digital imperative in the field of art shows that the use of digital media not only changes the ways of creating art, but also changes the approaches to its analysis and perception. New forms of visual expression are emerging, such as digital visual art, digital lighting art, and digital interactive installation art. At the same time, the humanities are actively using digital modeling and visualization methods for academic work. Such a transformation requires a systematic analysis of specific structural conditions (Uzbek conditions) necessary for the effective implementation of digital pedagogy in aesthetic education. Aesthetics is a branch of philosophy that studies beauty, taste, and related phenomena. In a broad sense, it includes the philosophy of art, which studies the essence of art, creativity, the meaning of works, and their evaluation by the audience. Artistic

taste (artistic taste) is defined as a person's subjective sensitivity to aesthetic qualities, which affects their aesthetic judgments and evaluations. Digital interpretation of works of art is superior to mere copying; it is the process of entering a work in a digital environment, analyzing it, and even manipulating it. Understanding a digital work requires a concept called ontological literacy. In the context of digital art, ontology often precedes interpretation, as the characteristics of the work itself are determined by a set of specific instructions - such as format, resolution, aspect ratio, or an artist-approved code. Consequently, for the development of complex artistic taste, students must understand how the digital framework (encoding, access, presentation context) defines the boundaries and characteristics of the work. Otherwise, the aesthetic judgment remains only at the level of intuitive "pleasantness." The main problem of this study is the identification and validation of specific pedagogical, technological, and organizational conditions (conditions) necessary for the effective use of digital interpretation methods for the development of advanced aesthetic competence (artistic taste) in higher education students. This report includes a systematic review and synthesis of empirical data and

theoretical developments related to the use of immersive technologies (VR/AR), computational analysis (CI/modeling), and didactic strategies (design education, skeffolding) in aesthetic education.

The introduction of digital technologies in the modern education system, in particular, in art education, is becoming a serious scientific and pedagogical problem. Analysis of the literature shows that the use of digital tools in fine arts lessons serves as an important factor not only in the development of creative abilities, but also in the development of critical thinking and artistic taste. The main task of teachers is to familiarize students with various techniques and tools, to encourage them to think creatively, solve problems, and visually convey their ideas.

Along with traditional forms of fine art, research is enriched with new directions, such as digital art, 3D graphics, and even works created with the help of artificial intelligence. Researchers such as Ibragimov Kh.Kh., Islamova R.S., Norboboeva M.F., Sayyora Dzhuraevna Saidova emphasize the importance of innovative technologies and methods in art history, in particular, the role of computer tools in the digital educational environment. The digitalization process, the current state of education, the influence of technologies on the educational process, and the possibilities of their application are constantly being analyzed.

In the process of interpretation, the works of Abduvokhid Isakov are aimed at structuring educational materials for organizing and conducting fine arts lessons based on the use of digital technologies, which has practical significance for this area.

The effective use of digital technologies in art education requires a solid theoretical foundation that combines the sociology of art, experimental aesthetics, and didactics. Sociologist Pierre Bourdieu asserted that a work of art "is created twice: by the author and the viewer." The level of perception that the viewer applies to cultural products depends on their "possession of the social code." This code includes historical knowledge, familiarization with genres, and critical theories. On this basis, aesthetic evaluation is not innate, but acquired through education, which makes didactics a critically important tool. Digital technologies, such as online museums, significantly increase the openness of cultural heritage. However, digital openness itself is necessary, but not sufficient, for the development of refined taste. If there is no critical apparatus, mass, unfiltered consumption of art can lead to a superficial level of aesthetic judgments (such as novelty, immediate pleasure). Therefore, for

the successful implementation of digital education, didactic structuring (skeffolding) is required. This is a pedagogical intervention that clearly teaches students the sociohistorical and formal codes of interpretation, clarifying the implicit codes of aesthetic perception.

In the field of experimental aesthetics, Daniel Berline's theory of optimal complexity is important. This theory shows that aesthetic preference is often characterized by an inverse U-shaped curve, which depends on the complexity of the stimulus. That is, maximum enjoyment and engagement are achieved in an optimal balance between novelty/complexity and familiarity. Digital tools have the ability to present visual information in a controlled way, which makes them ideal for the practical application of Berline's theory. This possibility of controlled complexity determines one of the main technological conditions: the ability for dynamic presentation. For example, navigation through 3D models or the use of interactive visualizations allows the teacher to gradually reveal the formal elements of the work. Such management of complexity supports the student's optimal Hedonic tone, which maximizes their stable involvement in the critical analysis of the work.

Elliot Eisner, a leading theorist of art education, emphasized that visual art makes a unique contribution to the development of "aesthetic observation of visual form" and the formation of aesthetic intelligence through critical methods. The DBAE approach required the integration of aesthetics, art history, and art criticism alongside artistic creation. The goal of DBAE was to bring students beyond the product of art, to teach them methods of aesthetic interpretation in order to form their own judgments about how and why they are reacting to art. Digital interpretation directly supports the component of critical analysis, allows visualization, deconstruction, and reconstruction of works of art, thereby contributing to a deeper understanding of form and meaning.

The development of artistic taste in the digital age depends on the fulfillment of a complex of interconnected conditions (conditions), which can be divided into technological, pedagogical, and organizational aspects.

Technological Conditions:

The main technological condition is the provision of a highly interactive 3D visual environment through the integration of VR/AR. These technologies give students a sense of "existence" and immersion, which is extremely important for spatial perception and understanding of the composition. VR applications allow students to walk through various "rooms" of virtual museums, examine works of art presented with

high realism thanks to photogrammetry, and gain access to details that are not perceived in traditional conditions. This extended level of interaction not only increases learning satisfaction but is also associated with high academic achievement and self-efficacy among art and design students. Another important condition is the use of digital 3D modeling technologies, such as those used in the digital humanities for interpretational reconstruction of historical architecture and cultural objects. Project-based learning, including 3D modeling, allows students to actively participate in image creation processes and master the methods of creating new forms. The implementation of computational aesthetics tools, such as SAPR (CAD), pixel analysis, and significance maps (saliency maps), provides an objective, data-driven view of the composition. These technologies interacted with geometry and color, for example, in Mondrian's compositions, limiting his Neo-Plastic style to straight lines, rectangles, and three main colors (red, yellow, and blue) and neutral colors (white, black, gray), striving to create the purest and most universal expression of art. It also allows representing fuzzy relationships using numerical matrices and visualizing them in the form of 2D or 3D maps. Computational analysis introduces formal objectivity into the criteria of aesthetic judgment. Although subjective factors (technical skill, emotional impact) remain important, students learn to evaluate compositional success based on objectively defined principles such as balance, rhythm, or geometry.

Pedagogical Conditions:

The effectiveness of technological integration requires technology to serve as a tool that expands creative possibilities and does not replace artistic foundations. A prerequisite is the adoption of a blended approach, in which traditional techniques (for example, drawing from life) are supplemented by digital manipulations, thereby forming universal and flexible artists. Project-based learning (PBL) contributes to increased engagement and collaboration. Students can easily share digital work or collaborate on online projects, develop communication and teamwork skills. They can start with sketches on paper, then digitize the work to create further manipulation or animation. The pedagogical condition requires that art teachers develop students' ability to be critical and self-critical. The use of methodologies such as visual thinking strategies (VTS) in conjunction with visualization tools directs the viewer's gaze and increases the depth of interpretation of artifacts. Digital design processes essentially help to understand autonomy and the fact that artistic problems often have multiple solutions, which is an important element of quality decision-

making in art.

Organizational and personnel Conditions:

Successful integration of technologies depends on the training of teachers. Ensuring adequate funding for teacher training and institutional capacity building is a systemic requirement. Teachers' technical skills and confidence in using digital tools like AI are crucial. The task of organizational policy should be to solve the problems of inclusiveness and openness, ensuring equal access for all students to the necessary technologies (internet, devices, licenses). Importantly, empirical data show that aesthetic judgments expressed in a highly immersive VR environment demonstrate similar correlational tendencies with judgments obtained in simplified online contexts. This result provides a practical way to fulfill the condition of inclusiveness: educational institutions can prioritize investing in the structuring of high-quality content and online interactive visualizations, and not in expensive VR equipment, thereby democratizing access to complex aesthetic education.

Efficiency and Empirical Results

The effectiveness of digital tools for studying aesthetic judgment has been confirmed by empirical research. Studies using 3D virtual artworks have shown positive, linear, and mostly moderate correlations between "like" assessment and other subjective attributes, such as novelty, complexity, and perceived viewing duration. This confirms that digital interaction generates a holistic aesthetic response. IT tracking data in the VR environment revealed a diversity of visual research strategies and variations in viewing time between participants and works. Comparison of the VR environment (immersion) with the online environment (2D image) showed similarity of judgment strategies and convergent evidence of correlations between different aspects affecting aesthetic evaluation. This confirms that a decrease in perceived spatial immersiveness does not fundamentally change the relationship between measured aesthetic evaluations, and both environments can serve as an ecologically valid context for the study of aesthetics. Integration of VR technology into art curricula with a creative problem-solving model (CPS) showed a significant improvement in student engagement, research activity, and especially their spatial expression. This confirms the didactic potential of VR in the transformation of theoretical knowledge into practical creative results. Computational approaches are successfully used to analyze formal elements in works of art. The study of Mondrian's compositions in artificial intelligence 1938-1943 showed that it is possible to identify fuzzy relationships that do not exist

in the traditional view by transferring the relationships between geometry and color to numerical matrices and visualizing them (2D maps, 3D texture maps). The integration of VTS with neuroaesthetic tools, such as significance maps and ai-tracking analysis, proved to be effective for directing the viewer's gaze and increasing the depth of interpretation of complex artifacts.

DISCUSSION

The development of artistic taste through digital interpretation requires a holistic structure, systematically structured with technological capabilities (immersion, computational analysis) and pedagogical strategies (VTS, PBL, CPS). The main technological condition is the ability to expand interaction and spatial capabilities, which is proven by the effectiveness of VR/AR. The main didactic condition is the need to balance tradition and innovation through blended learning, where digital competence strengthens basic artistic skills, not replaces them. At the cognitive level, the introduction of objective analysis criteria through computational methods fundamentally deepens the ability to make critical judgments. This is achieved through formal objectivity, which allows students to reconcile subjective preference (pleasantness) with a formal understanding of compositional principles.

The introduction of generative artificial intelligence (AI) into art is questioning traditional concepts of authorship, originality, and aesthetic legitimacy. As a result, an ethical imperative condition arises: the integration of algorithmic ethics into aesthetic education is a critical organizational and ethical requirement. Students need to develop taste and critical judgment to find direction on issues such as copyright, consensus, bias included in AI's educational data. If artistic taste is partially formed by mastering social codes (Bourdieu), the introduction of AI introduces a new algorithmic code. Future artistic taste is evaluated not only by technical skill or emotional impact, but also by the artist's ethical navigation towards AI and the viewer's ability to recognize the algorithmic impact.

CONCLUSION

In conclusion, the development of artistic taste in students through the digital interpretation of fine arts is determined by three interconnected conditions. Firstly, this is the strategic implementation of technological conditions that ensure immersion (VR/AR) and objective analysis (computational aesthetics). Secondly, this is the systematic implementation of pedagogical conditions that support project-based blended learning (PBL) and cognitive structuring (VTS). Thirdly, this is a reliable

organizational condition that ensures the proactive integration of openness, teacher readiness, and ethical literacy in relation to AI. These conditions guarantee that digital interpretation serves not just as a technical innovation, but as an improved critical judgment, a structured path for a deep understanding of the ontology of art and the development of aesthetic competence. For the formation of long-term sustainable aesthetic taste in this area, it is necessary to conduct large-scale long-term research. Future scientific work should include the study of how algorithmic biases in AI affect students' aesthetic judgments, the development of standardized measures for assessing the level of ontological literacy of students, and the study of neurological differences between the interpretation of VR and real works of art using neuroaesthetic methods.

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