Research on the Application of Computer Graphics and Design Patterns in the Field of Art Design under Digital Condition

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Abstract

In this paper, we conduct research on the application of computer graphics and the design patterns in the field of art design under digital condition. Digital art and non-digital art can not only learn from each other, but also integrate with each other, in order to get better development, especially in digital art we should learn from other art categories with an open mind and continuously strengthen our creative power. The development that as the modern science progresses by the leaps and bounds, the computer technology obtains the widespread utilization. This paper gives the proper combination of computer graphics and the design patterns in the future we will apply the proposed methodology into the real-world applications.

Keywords: Computer Graphics, Design Patterns, Art Design, Digital Condition.

Introduction

The contemporary art design began in the 1970s, it was the later modernism for the new cultural art trend of main body. Modernism is based on the rebellion against tradition, and postmodernism is the abandonment of modernism, it is based on modern rationality, apathy, respected the return to nature, tradition, and history, so the contemporary art culture to abandon the modern culture one-way straight view of progress with recognition of differences, promote diversity, presented as open and inclusive and the eclectic state of harmony. And when we according to the characteristics of the contemporary culture to review the new art movement, we will find the new art movement and some characteristics of the contemporary art and design with the general features and characteristics.

Under this basis, we should consider the source of it, that is, the art design education in colleges. For this concern, we should consider the following aspects. (1) The art layout must create the innovative application talented person, then, must manifest to train the full scale development of the innovative spirit, the practical ability and overall quality student in the curriculum shape. Therefore, needs constantly to reform curriculum shape, gradually establishes the curriculum shape of by the course, the activity curriculum and the hidden course being combined. (2) In order to cultivate a new generation of the art and design talent, vocational colleges should continue to improve the curriculum design, to strengthen the core curriculum and the proportion of practical courses. In order to improve the professional ability of students, teaching content should be close to life and close to reality, so that students feel that art and design is a real sense. (3) We should adjust the good art layout practice and relations of the

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teaching theory link, stressed that trains the practical ability of student. The theory curriculum and the practice curriculum organic combination, promoting the student to transform the theoretical knowledge as the practical ability that causes a student closer life and close market.

The development that as the modern science progresses by the leaps and bounds, the computer technology obtains the widespread utilization. The people in the daily life cannot leave the computer more and more, thus has built the deep social basis and mass base for the promotion of digitized art. As for considering the digital art design, we should analyze from listed aspects.

1) The difference and relation of the digitized art and religious art. From the perspective of the expression form, religious art often uses the amplification technique, to enlarge the object or to show, for believers to walk, to show the power of the strong features. The digitized art and religious art have the relation the digitized art can found the creation from the well-preserved religious building and sculpture the fountainhead.

2) The difference and connection between digital art and literary figure. Digital art is connected with literati and literati art, and digital art can provide a creative cradle for the new literati painting art to promote its development and enrich the form of painting art.

3) The difference between the digital art and modern art with contact. Digital art can be used to represent the abstract form of modern art, so as to add new forms of expression to modern art and the theory and form of modern art can also be borrowed in the creation of digital art.

![Figure 1. The Demonstartion of Art Design under Digital Condition.](image)

In this paper, to explore the further development of the art design, we conduct research on the application of the computer graphics and the design patterns in the field of art design under digital condition. Digital art and non-digital art can not only learn from each other, but also integrate with each other, in order to get better development, especially in digital art we should learn from other art categories with an open mind and continuously strengthen our creative power.
The Proposed Methodology

The Computer Graphics Principles. The so-called computer image processing technology refers to the image signal conversion, as a digital signal and the use of computer for its processing. Because the processing speed of the computer is very fast, and the digital signal has the characteristic of being easy to save that easy to transmit, small in distortion, strong anti-interference ability, the application of computer image processing is very wide. Graphics are usually composed of non-geometric properties such as geometric elements, points, lines, colors, and so on, surfaces, line-weights, lines, grayscale, and bodies. If the analysis from the processing technology, graphics can be divided into two categories: one is the dark and dark, is what we call the realistic graphics, the other is such as contour map, engineering drawings, surface wireframe diagram based on line information.

One of the main purposes of computer graphics is the use of computer-generated graphics to make people feel good. Therefore, the geometric representation of the scene described by the graph has to be established, and then, in each of the illumination models, the illumination effect under the illusion is calculated. The graph designs with the art layout two relates very closely, the graph essentially through the image and visual image expressed and elaborated that some viewpoint of author, the visual image has the creativity, is the human use related media carries on some special language form of specific information propagation in the visual image form shown in the figure 2.

![Figure 2. The Computer Graphics Design Demonstration.](image)

The Digital Art Design Pattern Analysis. Digital art refers to the form of digital form of the expression and transmission of art and it is due to the use of new forms and new features. In the product design process, human behavior plays a crucial role, especially in the interactive technology highly developed today. From the microscopic point of the view of design behavior, studying the characteristics of digital design systems using different modeling principles and techniques will help form a new approach to solve some of the problems in this research area. As for considering the later development of the digital art design pattern, we can summarize as the follows.

- Modernism is a rebellion against tradition, and postmodernism is a sublation of modernism, in accordance with the negation of the law of the negation, post-modernism is bound to half a century ago the new art movement or arts and crafts movement to a certain extent that return or inheritance.
- Innovation is the soul of a nation, but how to innovate is still very heavy of a subject. For the latest western art and design, we can copy but not beyond. Prosperity reflects our ability and speed, but cannot give us the true glory. The plight of the Europe in the same
existence of a hundred years ago, but they successfully built a bridge, and thus out of the plight of the new future. Looking back on the history, finding our way out, perhaps the meaning of the new art movement we are talking about today.

As shown in the figure 3, the sample art design pattern demonstration is shown. Here, we combine the science with the art design. The science has primarily satisfied the function requirement in design, but the art has primarily met the aesthetic need in design. Specifically speaking, the design must consider the product from the angle of basic science the functionality, namely its use value. The functionality had decided some product the necessary form, this form has manifested between the product and human and product and life possible relations. The direct impact of art on the design is mainly from the art to draw inspiration and inspiration, through the human synesthesia can reach the design style and artistic style of consistency. Science and art in their characteristics affect the design style, science is the formation of diversified design style in an unconscious state, and the formation of a design style to provide technical support, and art is the orientation of a conscious atmosphere of the infection and influence of the aesthetic design value price.

The Further Suggestions on the Art Design. Computer application technology and Internet information transmission technology widely uses, making the design art be affected profoundly, form structure, the language environment and the aesthetic characteristics the modern design had the corresponding change that presented the new design shape.

Computer interactivity design contact surface as the central concept of the design philosophy and design esthetic, has gradually substituted for the past material operationality design has manifested a new method of exchange design. It will transform to the invisible design from the visible design. Changes the non-design transformation from the design of thing from the design transformation of design of physical product to virtual product, the modern design has extricated the fetter and limit of traditional industry time presents the characteristics of multiplex and personalization, develops in a more loose free direction. Abstract thinking is mainly through analysis and synthesis, induction and deduction and other ways of thinking, screening and classification, to get the main, common and inevitable, the nature of the information, and with the help of language symbol system to form a concept, judgment and reasoning. In the process of design, abstract thinking is conducive to grasp the essence of the objective things and the analysis of the infinite rich emotional materials.
Designers need to use abstract thinking to carry out a large number of qualitative and quantitative analysis, such as the analysis of the product material properties, the scale of the relationship between the analysis of people and products with modern design as part of marketing, sales data and market research Materials, analysis, etc., which require strict logic and rational judgment.

Conclusion

In this paper, we conduct research on the application of computer graphics and the design patterns in the field of art design under the digital condition. With the development of human society, scientific progress, the continuous application of scientific research results in the transformation of the social productivity in the rapid increase, which is an urgent requirement to introduce the aesthetic activities of technology, with the intuition scale and the depth of mutual unity. Therefore, how the science and technology and humanistic art links, creates not only has the connotation and has the form, conforms with the design that the time needs is the eternal topic of the social development. Relationship issue between the science and technology and design art no doubt also becomes now hot spot. This paper gives the proper combination of the computer graphics and the design patterns, in the future we will apply the proposed methodology into the real-world applications.

References