Application of Computer Graphics and Image Software in Marine Graphic Design

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ABSTRACT

Han, Q., 2020. Application of computer graphics and image software in marine graphic design. *In:* Gong, D.; Zhang, M., and Liu, R. (eds.), *Advances in Coastal Research: Engineering, Industry, Economy, and Sustainable Development. Journal of Coastal Research*, Special Issue No. 106, pp. 600–604. Coconut Creek (Florida), ISSN 0749-0208.

Graphic design includes many aspects, such as advertising, animation, web design, packaging, and book design, and so on. Through the combination of various visual elements, designers can transmit their own ideas and ocean concepts to the public. Through graphic design works, designers can smoothly transmit their ocean ideas, which have the power to move others. With the development of the times, graphic design has become a comprehensive industry, which integrates computer technology, art knowledge, and artistic creativity. The current computer graphics and image software includes Photoshop, CorelDRAW, illustrator, *etc*., which makes graphic design more convenient and flexible. Through various kinds of software, designers can express themselves by more means, which will make the design works more vivid and creative. Through ocean graphic design, designers can enrich the means of expression of their own ideas, which will improve the audience's understanding of the ocean.

ADDITIONAL INDEX WORDS: *Computer graphics and image software, graphic design, ecological ocean.*

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INTRODUCTION

In the 1980s, graphic design will be greatly influenced by computer technology. Nicholas (1997) edited a chapter on "Understanding New Media through the Change of Media Form," which systematically discusses the characteristics of the change in media form and the emergence of new media. The chapter narrated the changes and background characteristics of various media forms from media basic theory to changes of media in the digital era. Through computers, graphic design will have more creative ideas, methods, and patterns. With the continuous development of digital media, many foreign design companies began to try to transmit the information of graphic design in the form of digital media (Nicholas, 1997). Now, there are many kinds of graphic design art decoration. Ecological ocean design is one of them. Yang (1998) thinks that the artistic design of ecological ocean is not like the graphic design of other areas, which can be designed on a plane. Ocean-themed graphic design is sometimes used alone or in combination, which increases the use of ocean theme (Yang, 1998). At present, computer-aided design has become the most basic course in art colleges, helping students to create art design. Through the guidance of students' ideological innovation, Jian and Wang (2002) think the graphic design of ocean theme can be carried out in programs such as Photoshop (PS), Corel-DRAW, Illustrator, and other software. Learning animation can help with learning to paint, to edit video software, *etc*., which will be of great help to art design (Jian and Wang, 2002). At present, China receives the impact of popular culture, and graphic designs present trends of highly imitative foreign styles. Through blindly pursuing foreign styles and themes,

China's graphic design has lost its national foundation and lost the spirit of innovation. By opening a popular graphic-design exchange website in China, the graphic design style of Europe, America, Japan, and South Korea will be presented. With national cultural innovation, cultural soft powers must be developed. Some graphic designs in China must follow the creative line of national style, which cannot meet the slogan of "cultural power." The combination of marine biological themes and graphic design will become a form of independent innovation in China's cultural industry (Zhang, 2011).

METHODS

Design of Computer Graphics and Image Software

Graphic design is the art of communication, stylization, and problem-solving through words and images, which requires graphic design software, as shown in Figure 1.

PS is dot-matrix design software, that is, the designs are composed of pixels. The larger the resolution, the larger the image. The advantage of PS is its rich color and super functions. The disadvantage of PS is that the files are too large. When the picture is enlarged, the sharpness is reduced, and the edges of text are not clear. PS is the world's leading image design and production tool software. Therefore, it has many advantages for engaging in marine graphic art design. PS can deal with all the graphic design skills of the ocean, such as drawing repair, matting, imaging, image processing, color adjusting, cartoon coloring, printing factory color separations, and producing films, *etc*.

CorelDRAW is vector-design software, which can be zoomed in and out at will, but the clarity does not change. The biggest advantage of CorelDRAW is that it can maintain clarity at any level of magnification, especially in logo design, text, typesetting, *etc*. CorelDRAW is the core software in a series of software packages, which can complete the plane vector drawing in its
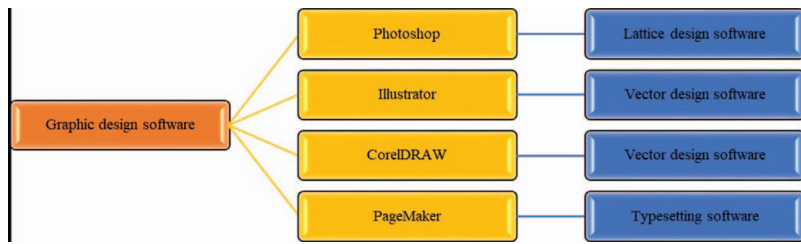
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Figure 1. Graphic design of computer-aided image software.

integrated environment. Through CorelDRAW, the whole process can be completed of an ocean work, such as design, composition, drafting, drawing, and rendering, *etc*.

Illustrator is also vector-design software and can be zoomed in and out at will without changing the definition. The biggest advantage of Illustrator is that it can be enlarged to any extent and remain clear, including logo, text, and typesetting, *etc*. The function of Illustrator software is very large, which is appropriate drawing software for industrial standards. By making color and black-and-white figures quickly and accurately, special characters of any shape can be designed by inserting image graphics, directly guiding flash, which is a kind of vector graphic. Therefore, ocean plane design can be carried out through Illustrator software.

Key Factors in Graphic Design

The three elements of graphic design include color, figures, and text. Text is the finishing touch of graphic design works and is the most common element in traditional graphic design works. Graphics are the elements used in modern graphic design. Graphic design is a kind of visual symbol, which needs a lot of visual information. Therefore, graphics in graphic design works have the characteristics of simplicity, which is the best choice for designers. However, the design elements also need the designer to carry out the overall color scheme that perfectly reflects the visual effects. Through the rational use of color psychology, a unity of visual effects can be achieved, which will arouse resonance for the readers. The key factors of graphic design are shown in Figure 2.
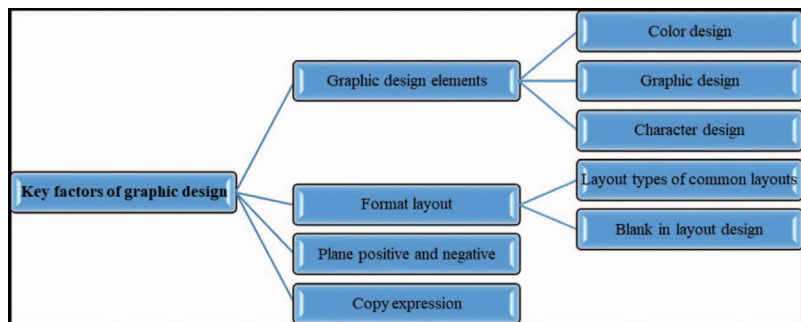
RESULTS

Ocean Graphic Design Process in a PS Environment

Graphic design is the design of visual communication, which is a common art elements of the integrated graphic design. Through a variety of different layout design, designers can express their own ocean theme to the audience. In the creation of marine graphic design, there is no essential difference between advertising and traditional manual creation. PS image processing software is a convenient and powerful tool. In PS image processing software, the following steps are taken in ocean plane design, such as checking content, concept, selecting design ocean elements, selecting method, and production. The flow chart of marine graphic design in the PS environment is shown in Figure 3.

The meaning of the picture is that the ecological environment will deteriorate many times, which is an eternal topic for human beings. However, human beings are in a comfortable environment, which is the deterioration of the ocean, which humans find difficult to experience. The ecological ocean theme graphic design through PS is shown in the Figure 4.

CorelDRAW Environmental Marine-Themed Graphic Design

CorelDRAW is graphics software, which displays images in vector or bitmap format. Vector diagrams use line segments and curves to describe images, which contain color and location information. With CorelDRAW, vector maps of ocean themes can be made. CorelDRAW software is suitable for making all kinds of ocean graphics. However, PS software is only suitable for special effects of postprocessing pictures. CorelDRAW

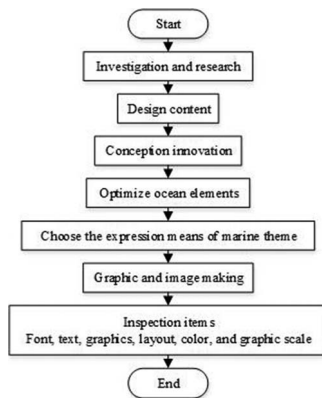Figure 2. The key factors of graphic design.

Figure 3. A flow chart of marine graphic design in the Photoshop environment.

software is graphic software developed by the Corel Company in Canada. It can create and edit professional-quality charts and demonstration pictures. Through text, image, color designs, and charts, data can be loaded or unloaded with some advanced modification skills. CorelDRAW can fill various patterns with solid colors, which provides various color schemes, such as gradients, patterns, materials, meshes, *etc.*, and the color-matching management scheme in CorelDRAW enables display and printing to achieve color consistency. The coloring tool in CorelDRAW is applicable to ocean theme graphic design, as shown in Figure 5. Figure 5 shows that the ocean is the common home of people. Humanity and the sea should coexist harmoniously. Green water and green mountains are Jinshan and Yinshan, which express the strong yearning for a vision of harmonious coexistence of humanity and nature.

Illustrator Environmental Marine-Themed Graphic Design

Illustrator is a graphic production software based on an industrial standard vector, which was introduced by Adobe Company. It is widely used in current professional illustra-
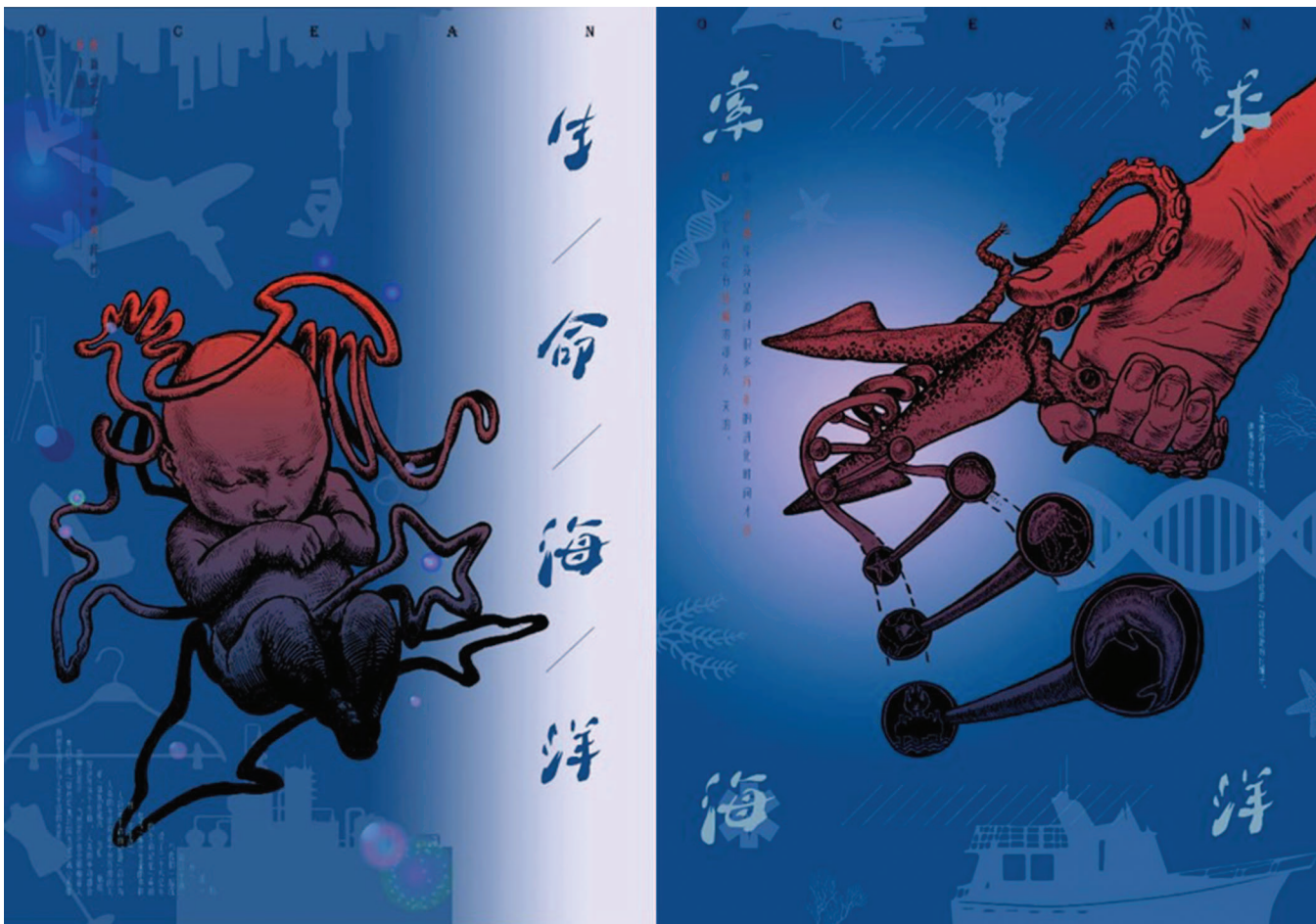

Figure 4. Ecological ocean-themed graphic design through PS.

Figure 5. CorelDRAW environmental marine-themed graphic design.

tions, printing and publishing, multimedia image processing, Internet page production, and other fields. Illustrator software has powerful image-processing functions, which can provide high-precision image processing for related artistic designs. The pen tool in Adobe Illustrator is its biggest feature and has become the default standard in the desktop publishing (DTP) industry. Adobe Illustrator software can provide smooth and flexible vector-map editing functions and also uses Bezier curves, which is one of its biggest features. As shown in Figure 6, in the Illustrator environment, the ocean theme graphic design reflects the wonderful use of text typesetting.

First, the advantages of graphics and images need to be understood. When dealing with the vector graphics of ocean-themed design, the image can be zoomed in and out arbitrarily by using Illustrator software. In the ocean-themed graphic design, the pen tool in Adobe Illustrator software can be used, which can achieve outstanding results. Second, the advantages of writing also need to be understood. Ocean-themed graphic design usually includes images and text. However, Illustrator software has outstanding advantages in processing text. To achieve the desired textual effect, Illustrator can change the size, position, simplicity, saving, disconnection, *etc.* of the text at will. Illustrator can be reassembled into new symbols by

Figure 6. Illustrator environmental marine-themed graphic design.

scribbling individual words. Third, color advantage needs to be understood. For ocean-themed graphic art design, color is a language and has an important role. Illustrator software should have an important role in ocean-themed graphic design. Through color filling, such as gradient color, whole color filling and so on, a variety of colorful contrast selections can be achieved. Through the visual effect comparison and the optimal design scheme, Illustrator is very convenient to operate when moving, zooming, and rotating text, graphics, and pictures, which can realize the operation of partial deforming, cutting, and combining of design works.

DISCUSSION

Common Layouts

There are many kinds of modern layout designs and flexible use, which get rid of the simple combination layout of lines and moiré. Through the display of personality, the designer can better convey the artistic conception of a picture, which mainly includes oblique and scattered type. The slanted elements have a dynamic function, which will be noticed by the public. In the layout, the designer tilts the components to the left or right, which produces a dynamic picture flow for the line of sight. In the arrangement, the placement of scattered elements will not follow the rule. However, the overall tone is more uniform, and the overall atmosphere of the picture is harmonious, which is more interesting. Therefore, the scattered visual effect is relatively easy. Of course, designers have to deal with the color of key elements separately, which will highlight the theme more.

Positive and Negative Planes

In graphic design, the positive and negative shapes are transformed from their original relationship between the bottom of the figure, which is also known as a Lubin-reversal figure. The positive and negative shapes in the plane space are shared by the graphic sidelines. Positive and negative forms are defined by each other and interact with each other at the same time. In the course of that struggle and contradiction, the figure can be made artistic, which will show special artistic charm. Through the positive and negative shapes of the plane, satisfaction and pleasure in vision can be achieved. The positive and negative shape theory is mainly used in the logo creative design of this study. The use of positive and negative shapes in logo design will ingeniously achieve the visual effect of the combination of virtual and real.

CONCLUSIONS

The application of computer graphics and image software has become an unavailable technology in graphic design, which has become an important standard to measure the professional ability of designers. In the new era, graphic designers must be good at using design software, which will better express their design ideas. Through the comprehensive use of different software, designers can better reflect their own ocean themes, which can enhance the expression effects of those ocean theme. Computer graphics and image software enriching the means of expression on ocean themes will attract the attention of the public.

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