Research on the Application of Computer-Aided Design in the Creation of Modern Lacquer Painting

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**Abstract.** Nowadays, with the development of time and technology, computer-aided design is widely used in various painting creations, and lacquer painting creation is no exception. Using the various characteristics of computer-aided design, based on this, this paper discusses the application of computer-aided design in the creation of modern lacquer painting.

**Keywords:** Computer Aided Design, Modern Lacquer Painting, Creation, Application

1. **Introduction**

The creation of lacquer painting includes two stages: conceptualization and expression. Hand-drawn and computer-aided design have their own advantages in different stages. In the design conception stage, traditional hand-painting is convenient, free, easy to change, easy to add, and does not limit the designer's creativity at all, all of which are advantages that computer software cannot match; while in the performance stage, computer-aided high efficiency, accurate form and realistic effect make the information transmission more intuitive [1]. It is thus clear that traditional lacquer painting creation and computer-aided design are inseparable; they are not two contradictory individuals, but need to be integrated and complementary, cooperating and mutually supportive. In the early stage of conceptualization, traditional hand-painting is used for quick expression, and in the stage of expression of the final effect, computer-aided design is used, combining the advantages of both and mobilizing the strengths of both to make the lacquer painting creation more excellent.

2. **The advantages of computer-aided design in lacquer painting creation**

![Figure 1. Advantages](image)

The speed of computer operation is one of its advantages. Before we borrowed computer-aided, we had to do all the painting by hand, and after you had conceived an idea, it often took you a long time and effort to realize the idea, and it was not known whether the result could achieve the purpose [2]. Of course the process of drawing by hand will make us feel fun, but it all seems to have become the
enjoyment of hiding in the studio - it can not reach the commodity society on the timeliness of design requirements. For example, hand-drawn posters or effects, the tools used from water-soluble paints, to markers, airbrush, which did not get rid of the pen and paper contact, you can imagine the time spent from the base draft, to mixing, coloring, drying, over and over again to modify. And the computer for this process provides a very simple means of operation, a, even complex drawing process requires only a simple action - move the mouse, can be completed. And we can change a certain parameter, and quickly produce a number of different effects, in order to select the most ideal one. In this way, to complete the same design production, computer operation is much simpler and faster than hand-drawn. Therefore, but all have a certain design ideas of skilled operators, can be on the computer to get a handy experience, so swift is unmatched by hand-drawn.

Another advantage of the computer is its powerful functions. The designer of the computer program is indeed a genius, his art skills and his programming skills as well, he seems to be able to guess your mind, to provide the means for what you want to achieve [3,4]. The use of these means can even inspire you to a certain extent, will bring you more than you can imagine, and any means to achieve the effect of change also includes the relevant data adjustment settings, etc., to make it richer. For example, to conceive a snowy scene, the program will let you choose the shape of the snow flakes, color, the speed of the fall, density, the direction of the falling snow, with or without rules, and so on, you can debug, preview, until satisfied. As for other changes in the hand-drawn is very tedious but commonly used, such as: tone gradient, object defocus, bumpy font, mirror reflection, etc., the computer program has done a detailed and rich settings, for the computer, this is only the process of data selection, as long as you have a discerning eye, you can achieve satisfactory results.

In the short years that Photoshop has dominated the two-dimensional world, it has continued to improve its quality in terms of ease of use and richness of effect, producing more controls to replace Photoshop has been a leader in the two-dimensional world for a few short years, and has continued to improve the quality of its ease of use and the richness of its effects, producing more controls to replace the original shortcuts, automatic layering settings, and more filter stunts, making it possible for even a beginner artist to create a personalized image at will.

Photoshop is, after all, only graphics software, and its limitations in hand-drawn effects can be made up by CorelDraw! CorelDraw! is a vector-based structure program, which has two main advantages: high accuracy and flexibility. Defining the image in vector coordinates allows you to perform operations independent of the output device and resolution, and the result will not affect its high accuracy output. The pencil tool in particular introduces the Powerline function, which allows you to use the mouse to do woodcut paint on the screen, and you can choose different styles of knife marks to express, you can also directly use the pencil size to feel the graphic input board to draw.

3DMAX, which was little known a few years ago, is now widely used in lacquer effects and multimedia three-dimensional lacquer expression [5]. 3DMAX and 3DSTUDIO comparison, the first interface is richer, you can build a realistic entity in the virtual scene, and give it the imaginable materials and desired lighting effects. Although it is not as accurate as 3DSTUDIO with double floating point precision calculation, but skilled designers will make it as flawless as the picture.

PhotoShop, CorelDraw, 3DMAX, are the best paint design software, in addition, such as typesetting Wize, Free hand; can be used for simple human-computer interaction Authorware; office PowerPoint, etc., although less powerful than the above three, but also in a Although the function is not as powerful as the above three, but also in a small way opened up their own world of survival [6].

3. Contribution of computer-aided design to lacquer painting design

After computer-aided design was widely introduced into the field of lacquer painting design, it gradually became the darling of lacquer painting design, and its contribution to modern lacquer painting design is mainly reflected in the following aspects.

3.1. Computer-aided design improves the efficiency of lacquer painting design Compared with traditional design methods
Computer-aided design allows designers to visualize the design effect in the early stage of design, which makes the design scheme a lot more selectable and allows real-time editing and modification as needed to create various special effects, and at the same time, because computers have theoretically unlimited storage space, they can easily and quickly retrieve At the same time, because the computer has theoretically unlimited storage space, it can easily and quickly retrieve materials for creation, thus greatly improving the efficiency of designers and reducing design costs. At the same time, it also makes the communication between customers and designers faster, and facilitates designers to make modifications and adjustments according to customers’ needs in the early stage, which avoids repetitive work and saves a lot of time in the design process.

3.2 Computer-aided design broadens the creative space of lacquer painting design

Computer-aided design is an epoch-making design method that emerged along with the development of the times after photography [7-9]. Compared with the two-dimensional composition of photography, computer-aided design can not only truly represent objective things, but also fully express the image in the designer’s imagination; it can be created in two dimensions, but also expand to three dimensions and time dimension. Only what can't be imagined, there is nothing that can't be done. Whether it is font design or graphic processing, designers can give full play to their imagination and creativity according to their creative needs, and directly generate a variety of highly creative intuitive visual images. Or the existing graphics, photographic photos, logos, fonts, texture, etc., through a variety of means recorded into the computer, and then use a variety of software to carry out a variety of special effects on them, in order to produce a unique and surprising creative picture effect.

3.3 Computer-aided design has enriched the expression of modern lacquer painting design

In the traditional expression, there are only two-bit static images and static entities, but the computer further enriches the expression [10]. By using the computer to simulate the technique of photography and change the shape and color, it can make the image change and produce a sense of motion. Especially in industrial design, it enables designers to achieve a more intuitive understanding of the new thing they are trying to create. Today can realize the industrial product modeling of three-dimensional modeling software is increasingly mature, these software have a powerful three-dimensional modeling function. The automotive industry design is one of the earlier industries to use computer-aided design. For the same reason, computer-aided design is also widely used in the design of architectural decoration.

3.4 Computer-aided design has created a new field of modern lacquer design

With the improvement of computer computing power, some areas of lacquer design that could not be realized for various reasons were opened up [11]. In the field of lacquer painting, computer-aided design has not only given lacquer painters more inspiration and ideas, and helped lacquer paint production remove a lot of manual labor of coloring tens of thousands of sheets, but most importantly, it has expanded lacquer painting from two-dimensional to three-dimensional. Computer-aided design

The achievements in the field of lacquer painting are obvious to all. With the development and improvement of computer technology, computer-aided design has injected new vitality into lacquer painting design.

4. Application of computer-aided design in the creation of modern lacquer painting
4.1. *The application of computer-aided design in the graphic object of lacquer painting design*

In lacquer painting design, the graphic object is the core of the design work; it is the visual center of the design work in the whole picture, it is the most important composition element of the plan. Therefore, in lacquer painting design, the first step is to use graphics to interpret the ideas, so that the creative expression is more complete, clearer and more accurate [12]. Computer-aided design software (PHOTOSHOP software as an example) provides a variety of graphic processing techniques and means, which can operate directly on the screen on the graphic objects, the designer can freely collage, recombine, scale, rotate, bevel, distort, perspective, coloring and other multi-element combinations of the required graphics (Figure 3-1), and can also use the special effects of graphics processing functions, the graphics The attempt of stylized, sketch, texture, pixelation, rendering and other artistic effect effects (Figure 3-2); when editing the image can also be made according to the needs of the design content of the graphic object material, such as glass, plastic, metal and other effects (Figure 3-3), these real, perfect and varied graphic effects, so that the image connotation of the art work has been sublimated, greatly enhancing the artistic sense of the design work.

![Figure 3-1](image1.png) ![Figure 3-2](image2.png) ![Figure 3-3](image3.png)

4.2. *The application of computer-aided design in drawing lacquer painting graphics*

Computer-aided design also provides rich expression techniques in drawing graphics (take Photoshop software as an example), which can imitate the effect of Chinese painting, oil painting, watercolor painting, fresco, etc. It can also imitate the forms beyond the realistic imagination that cannot be expressed by other painting techniques and cannot exist in the real world, and express them at will to create a mythical realm combining reality and fantasy, which often creates effects that even photography cannot achieve [13]. At the same time, the designer can also use computer-aided design to easily change the style of a work, computer design in these aspects have shown great convenience and efficiency, showing us a new visual world

4.3. *The application of computer-aided design in the color aspect of lacquer painting design*

In traditional lacquer painting design, the designer's creativity is expressed by hand, which inevitably often leads to problems such as slow speed, uneven coloring and wrong painting, and the final work is often far from the pre-conceived effect. color palette and color palette provides a wealth of colors for the designer to choose and deploy, the designer can easily color the object that needs to be colored, the coloring process encountered in their own feeling is not ideal color, as long as the mouse gently click
on the color dial can change the color, and before changing the color, you can also copy the previous copy, so that you can form a sharp contrast, the design process once found to be unsatisfactory can return to the previous copy, to ensure that This ensures that the designer is inspired to create and finally design a satisfactory lacquer work.

5. The negative impact of computer-aided design on lacquer painting design and thoughts on its application in lacquer painting

Just like the inevitable law of development, there are advantages and disadvantages. While computers bring convenience and economic value to designers, some of the negative effects of computers on modern lacquer design have also emerged [14].

5.1. "Technical effect" overshadows "lacquer effect" and ignores the cultivation of lacquer painting

With the continuous development of computer technology, the development of design software and the simplification of operation instructions, design has become easier and easier. Whether it is a flat static or three-dimensional movement; whether it is a realistic realistic scene or an ethereal fantasy fantasy space, it can be realized by means of computer, even to the extent of faking. The easy realization of design effects makes some lacquer designers mistakenly draw an equal sign between lacquer painting and technology, thinking that design is actually very easy, as long as they master the operation, they can engage in design, and even unilaterally pursue visual splendor, ignoring the cultivation of lacquer painting, and finally only know the technology, not lacquer painting.

5.2. Seriously stifle the creativity of lacquer painting

Lacquer painting design is not opposed to beneficial design borrowing and imitation, but long-term reliance will definitely inhibit the generation of creativity. The convenience of the Internet makes it possible for lacquer designers to get a lot of design solutions, and some of them use computer software to collage and paste graphics to make the desired effect; they can't really do it, and there are ready-made photo libraries at their disposal; they can't really think of foreign designs, and if they can imitate them, they can imitate them, but if they can't, they can simply scan them and make slight modifications. This is the so-called "design"! "The large number of imitation makes some designers' initiative, enthusiasm, and ability to create consciously gradually fall, which seriously restricts the improvement of design quality and the quality of the design team.

5.3. Lacquer works are relatively stereotyped and lack of humanity

A large number of computer design, its design concept and application objects are bound to produce a lot of similarity, resulting in a "one-size-fits-all" design, indifferent, stereotypical, and lack of humanism. Most of the works are just "clones" lacking creativity and concepts. With the continuous improvement of the aesthetic appreciation of the general audience, and the higher requirements for the humanistic elements contained in the works, they gradually lost their enthusiasm for the similar computer designs and began to enter the "nostalgic era", and developed a strong interest in the hand-made and irreproducible designs with strong traces of the "industrial era". The computer design works with strong traces of "industrial era" received a cold reception.

5.4. Thinking

The magical function of computer-aided design is being used by people, especially young people, because this shortcut can save the hard work of hand-drawing process. But computer-aided design can replace art creation in the future? While the user is satisfied, is he also losing the personal experience of the hand-drawing process, losing the freedom of the painter to express his feelings in the creation, losing the opportunity to express his more outstanding creative talent?

The hand-drawing process is completely different from the computer drawing, and the personal experience brings the most realistic feelings, which is what makes it so fascinating. The painter who is fully immersed in the painting process, the brush and the sight are pulled by his emotions, and the
momentary changes in the picture correspond to the painter's emotions at the same time, so that the painter really feels the harmony between the mind and the picture and the satisfaction brought by the creation, this satisfaction cannot be measured by the time limit of painting.

Modern design has been integrated into society, and driven by the trend, computer-aided design is the need of the times. You can quickly complete a beautiful design with the help of it to meet the requirements of customers, but the fixed software program cannot replace the designer's flexible design intentions, and exquisite production cannot replace the connotation of ideas in the design. Choosing between a blank sheet of paper and a computer mouse, you may feel that scribbling on a blank sheet of paper is definitely a better way to show your creative talent. Traditional drawing methods do take a lot of time, but simply pursuing the use of advanced tools will certainly make us lose a lot of hands-on opportunities. Therefore, designers can not just rely on software upgrades to meet their own creative requirements, to prevent the computer erosion of their creativity.

The computer can not replace your imagination to create, more than you can not replace the expression of delicate and rich feelings. It may have a certain effect that fits your state of mind at a certain moment, but it is not possible to be free to let your changing emotions sway like a paintbrush. A paint painter can not just rely on the computer screen to get inspiration, the computer to create the effect is in line with the common taste of the "popular recipe", in it did not peek into your mind before, is unable to make a special program for you to set, and art is the need for personality and emotion, otherwise it is at best only a commodity And it is.

6. Conclusion

Lacquer has been used in China for nearly 10,000 years, and as a treasure of Chinese civilization, it is there, unperturbed and unmoving, precipitating the traces left by the years, even if the flashy coat is stripped away, what remains is the most rustic truth, the most shocking beauty of the world. But traditional things should also keep up with the times, and it is a very good choice to apply computer-aided lacquer painting design in the place where it should be applied, so combining with computer-aided design is also a new development direction for modern creation of lacquer painting.

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