The Analysis of Computer Aided Design and Software Application in Textile industry

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Abstract. Based on the combination of ethnic minority costume design and computer information technology, the first is to promote the reform and innovation of ethnic minority costume design; Second, computer information technology plays an auxiliary role in ethnic minority costume design. The two complement each other. They not only enhance the expression of costumes in the innovation and reform, but also better promote ethnic minority costumes, which can be applied to more occasions and attract more people's attention.

1. Introduction

With the rapid development of computer information technology and software, the speed of updating changes with each passing day. Computer information technology has gradually been applied in the application field of clothing design and opened up a new situation, and a new field has also been gradually expanded in the design of ethnic minority clothing. Different nationalities and regions have different cultures. As an important display medium, clothing reflects the life, history, culture and inheritance of their respective nationalities. The combination of ethnic minority costume design and computer information technology is not only for the development and inheritance of ethnic minority costume, but also can gradually adapt to the changes of The Times and the demand of the commodity market to a certain extent. The design of ethnic minority costumes mainly includes two categories: creative design and improved design. No matter which of the two designs, they mainly rely on manual drawing, manual layout technology and pure manual sewing technology in the later stage. Although this kind of clothing design mainly focuses on the individualization of minority clothing and the natural handwork, it is undoubtedly time-consuming and laborious. The application of computer aid in it can better develop ethnic minority costume design, and at the same time more quickly show the skills of ethnic minority costume and the modern costume technology used in it.

2. Computer aided application in minority costume design

In ethnic minority costume design, with the development of computer information technology, more and more relevant costume design software development, making ethnic minority costume design is not only restricted to the traditional manual design and production, more is the application of computer aided in modern ethnic minority costume design. On the other hand, with the development of computer information technology, conventional tools and some characteristics of computer information technology can be used in a variety of ways by using professional software, so as to better promote the derivative and application of related computer information technology.
2.1. *Application of renderings*

The prominent characteristics of minority costumes are the rich decoration and the uniqueness of color. The first step to apply it to ethnic clothing design is to pay more attention to the personalization or the embodiment of nationality in the rendering of effect drawings. Hand-drawn renderings as the initial basic drawing is beyond all doubt, in order to show a better effect in the later stage, computer information technology has played an irreplaceable role. At the beginning of the rendering, we must give full consideration to the particularity of minority clothing fabrics and special sex, dog cloth this kind of fabric, for example, in the process of painting for the fabric texture, luster particularly high requirements, need to be repeated for drawing and debugging, such as PS for the gloss of debugging with the aid of computer information technology, in the process of showing the import is the most mature and close to the real effect of fabric, will succeed make late work to complete the degree of reduction degree of ascension. Moreover, if the selection in the design elements of a nation as a design point for rendering drawing, after fulfilling the basic drawing effect, according to the national living environment or unique patterns into the background, will be better than pure color background highlighting the design effect and the design concept of clothing display, appear more humanization, refinement, and the design points of random amplification details better. In the use of fast design of computer information technology to complete the renderings to complete design draft quickly, and also promote the innovative thinking ability quickly designers, especially can better avoid drawing tools and drawing the choice of materials, expand the clothing effect for tool selection, in order to best costume effect way to convey a designer's effective design drawings showing.

2.2. *Style and structural design and application*

Compared with modern clothing, traditional minority clothing styles and structures tend to be unconventional and not commonly used or common. So on minority clothing design to the design and structure of the drawing steps, relatively speaking, to be able to reference data is less, is the need for repeated modifications and drawing, will again to save the modified design and structure design as an alternative, after arrangement is more suitable to be selected from the design of the design and structure design. It can not only complete the design, but also play a reference role in the future design applications.

Deduction and repeatedly cut version is needed in traditional plate-making, plate-making, such as the manufacturing process of heavy and complicated, combined with the computer information technology, using computer used as a medium of apparel CAD deduction and data calculation, until the best format design complete, direct connection pattern play version of the cutting machine for the standard version of printing and cutting can be done in one format design, designers and plate-making division in this step can save more energy and error. Moreover, whether it is paper version or PVC version in the process of cutting and plate making, cutting speed is fast, incision level off without follow-up other processing, high precision, after cutting burr, high accuracy in rubbing, but also the use of repeatability.

2.3. *Application of Computer Aided Technology in Ethnic Minority Pattern Design*

As a part of the most vivid image of inheriting ethnic minority costumes, ethnic minority patterns are also a bright spot applied in costume design. Traditional patterns are the crystallization of wisdom passed down by the ancestors of ethnic minorities, reflecting the inheritance of thousands of years of history and culture. How the ethnic patterns combined with computer application, will first minority to hand embroidery patterns in the clothing design is the most direct design method, all with the auxiliary application of computational design information brocade patterns, batik, tie-dye patterns such as ethnic process of grain appearance also can also frequently used in the clothing design.

Computer information technology and ethnic pattern are applied to ethnic design. First of all, on the basis of a complete grasp of the connotation of the pattern, the pattern is integrated and analyzed in advance, according to different processes to shape the pattern at the same time, the design of different pattern combination, so that the creativity is concrete, and then the conversion rate of the design is enhanced in different permutations and combinations and ideas. Secondly, it helps designers to complete
the position, rotation, size placement, scale ratio and embroidery color number configuration of minority patterns on clothing in the design process by using the functions of Photoshop, AI and other software that can handle image trimming or adjustment of depth. Be in this link likewise, can determine embroidery pattern or digital pattern, after using software of wellke mu to undertake picture and the transformation of embroider, direct in digital transfer printing machine or had entered the medium such as U dish to have the transformation of grain object on embroider machine.

Through computer-aided application, such ethnic patterns can be used alternately and repeatedly in the process of saving time and effort, and can also be converted at will, such as embroidery technology into printing technology, which gives consideration to the aesthetic feeling of traditional patterns and gives scientific and technological power.

2.4. Application Display
The larger category of minority costume design is applied to stage design or unconventional costume design. When it comes to clothing display, both static display and dynamic display involve sound, light and shadow, background and other elements are coordinated and unified.

Computer auxiliary function is through the arrangement of these elements through different showing all sorts of modelling, background, transformation of space and time, etc., to form a complete virtual world to cooperate with minority costume design features and performance, let the viewer in after a series of virtual and reality of interaction design, in a kind of can be directly or indirectly in the virtual world of the senses to achieve a feeling of intimacy.

2.5. Matching Applications
In contrast to the conventional fashion design and the mainstream fashion design in recent years with simple personality. For example, when the Miao nationality is the main body of the costume design, the layers of various silver ornaments will enhance the color of the costume. Colorful padded balls, tassels, leggings, and tupas in the Huawaisai Dai costume are even more attractive than the costume structure itself. But in the actual hand-painting process, layers of silver ornaments will be a big problem. At this time, computer information technology shows its powerful functionality. You can use the pencil or pen tool in the PS tool to draw the same elements and then paste and copy them, which will undoubtedly save a lot of drawing time and energy, and also ensure the presentation of the fine degree of elements like silver ornaments or other elements.

3. The application of computer information technology in the construction of database in minority costume design
Based on the style, structure, fabric and accessories in minority clothing design, if the designer's personal research can be assisted by the computer information technology to construct the basic knowledge points and application details of clothing to build their own database. In the process of design, changes and adjustments are made based on the extraction of existing database files according to the design requirements and the fine division of the proportions of points, lines and surfaces in costume design, so as to do a good job in the basic work of design. When re-designed, the design cycle will be shortened in the design process and the commodity conversion rate of clothing products will be accelerated. Using computer information technology to build the database is essential. In order to better serve the design itself, under the premise of clothing design, a large number of styles, details, patterns, etc., are used as the basis points to perfect the database that meets their own needs, which has certain practical significance and sustainability of construction.

4. Advantages and existing problems of computer-aided application in minority costume design
Computer aided design is a tool which is used to convey the visual design thinking, costume design as a kind of creative behavior design, is a visual display, information transmission, comprehensive display of innovation thinking, minority costume design in the information technology with the help of computer and powerful at the same time, to a certain extent has also changed the traditional ethnic clothing design
approach, is an innovative technology for the design, better display designer, designer design concept, make the abstract visualize vivid design concept and design ideas.

In computer aided application to design of minority clothing can improve the efficiency of the designers and design transformation of products, but with the application of computer-aided design technology is more and more mature and promotion, to a certain extent, also causes the designer excessive dependence on computer information technology, for the hand-painted foundation as well as the manual plate making ignored, in this with the advent of the era of computer network, information transmission speed and the increase of the span, the past is in the picture presents a designer and drawing style, even imitate and can not be one hundred percent reduction, Now with the help of the PS tool for image matting and direct extraction of color, filling and other tools can easily complete the redesign, for the maintenance of their original design increased considerable difficulty.

4.1. Advantages of computer-aided application in minority costume design
In the field of modern clothing design, the pursuit of individualization is becoming increasingly distinct, and the selection of various elements such as shape and color is becoming more diversified. The traditional ethnic minority clothing design is limited by traditional technologies, and is relatively weak compared with design, production and display. With the assistance of computing technology and information technology, the previous limitations can be changed to make the design of ethnic minority costumes develop by leaps and bounds, and the design elements of ethnic minority costumes can be excavated at a deeper level, so as to show the stronger inheritance power of ethnic minority costume design and send out its unique vitality.

The application of ethnic minority elements has been a highlight in costume design in recent years, such as Ms. Ma Yanli’s tea-horse ancient road costume series based on ethnic elements such as the Yi and Lahu ethnic groups, and especially the Silk Road Yunchang series held in Yunnan Province in recent years. Suggests that the ethnic element in modern clothing design is to design field is a new focus of visual design, the traditional ethnic costumes design combined with modern computer information technology, to develop a broader field of design, in the design of the traditional ethnic costumes with some limitations and chance, but on the based on computer aided application is suitable for the design of the ethnic minorities, you can make designers design concept and product conversion rate is higher, is a traditional minority elements and fusion of modern design technique, is the perfect combination of modern science and technology and national art.

4.2. Problems of computer-aided application in minority costume design
The ethnic minority costume design itself focuses more on the inheritance and development of traditional folk crafts. In the process of using computer aided application improperly or excessively, it will appear modern and abrupt, destroying the traditional aesthetic feeling of ethnic minority costume design.

At present, although the computer aided application software of clothing design is widely opened in colleges and universities, it is relatively simple, and the teaching content is also superficial. Even if students have a good command of software, they are not enough for professional theoretical courses and skills. It is possible to draw a beautiful effect drawing, but the layout design and the garment realization of sewing process cannot be completed in the later stage, which will cause flashy consequences. Therefore, it is necessary to improve the innovative thinking ability at the same time to improve their own a series of practical supporting ability.

5. Conclusions
Ethnic costumes elements which contain the minorities of the people for thousands of years culture process strong national feelings and inner wisdom, showing its original living environment, history and migration as well as the daily life of common flowers, birds, fish, insect in after a series of serious and abstract to beauty creation, show the expressive force of the national costume of greatly. With ethnic minority clothing elements increasingly into people's attention, ethnic minority clothing design has
become a new way of design expression. Based on the combination of ethnic minority costume design and computer information technology: First, to promote the reform and innovation of ethnic minority costume design, design concept and inner meaning; Second, computer information technology plays an auxiliary role in ethnic minority costume design. The two complement each other. They not only enhance the expression of costumes in the innovation and reform, but also better promote ethnic minority costumes, which can be applied to more occasions and attract more people's attention.

With the advent of the information age, computer aided applications will be more suitable for minority costume design. Computer aided application is a more intuitive and visual design module, for ethnic minorities in the clothing design, not only improve the efficiency, more and more quickly the thinking mode of converted to intuitive visual presentation, make traditional ethnic costumes designed in keeping with The Times, in the process of innovation to promote the minority traditional dress inheritance and the development of the ethnic costumes, computer aided application is one of the few national costume design conforms to the product of the era and the information era of big data, for ethnic minorities clothing design plays an important role.

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