

Teaching Research on Setting Out of Zigong Colored Lantern Three-dimensional Modeling

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Abstract

Three-dimensional modeling setting out is a very important link in Zigong colored lantern teaching, which is the most difficult link for students. Make the students able to produce exquisite colored lantern works through strengthening the theoretical research of three-dimensional modeling setting out, targeted training of three-dimensional modeling setting out, in-depth lighting site practice and other means to learn, so as to lay a good technical foundation for their future work in the colored lantern industry.

Keywords

Colored lantern; three-dimensional modeling setting out; teaching.

1. Introduction

Artistic colored lanterns exist in Sichuan, Shanxi, Jiangsu, Zhejiang, Guangdong, Taiwan, Japan and other places and each has its own characteristics. Zigong colored lanterns organically combine appearance, color, sound, light and motion to form a unique artistic effect integrating sculpture, plane, calligraphy and painting, composite decoration and acousto-optic motion mechanism. This distinctive artistic feature has won the good reputation of "the best lantern in the world". The domestic and foreign producers of colored lantern are normally come from the folk, and they are inherited by the traditional pattern of "apprentice teach by master". In the teaching of domestic and abroad colleges and universities, there is basically no colored lantern teaching. So far, only Sichuan University of Science & Engineering, located in Zigong, has offered this course, which is mainly held by several teachers with practical experience in colored lantern. The students' colored lantern homework is not accurate in modeling, which is mainly due to the students' lack of solid basic skills in painting and their insufficient proficiency in setting out three-dimensional modeling.

The teaching of colored lantern mainly includes colored lantern creative design, construction drawing and setting out, wire frame welding, lamp placement, cloth pasting, art processing, etc. Among the construction drawing and setting out links, three-dimensional modeling setting out is the most difficult yet most important part for students. In terms of modelling, Zigong colored lanterns can be generally divided into light carving modelling, lamp box modelling and three-dimensional modelling. The light carving modelling generally can only be viewed from one angle, which can be understood as monolithic modelling. The lamp box modelling normally can be viewed from two angles: front and back, which can be understood as a paper-cut effect with a certain thickness or hierarchical structure. For these two types of modeling, students only need to refer to the design sketch and copy it when setting out, and most of the students are competent. Three-dimensional modeling can be viewed from multiple angles in all directions, which can be understood as circular engravers. In the setting out of three-dimensional modeling, it is often difficult for students to accurately convert colored lanterns with only one angle into figures with both front and side faces. It not only requires students to have solid basic skills in painting, but also requires students to have good three-dimensional thinking ability. In

order to cultivate students' ability of setting out three-dimensional modelling, we should start from the following aspects:

2. Strengthen the Theoretical Research of Three-Dimensional Modeling Setting Out

Both the overall height and the local height of the front and side of the three-dimensional modeling should be consistent, because in the next step of wire frame modeling welding, the graphic lines of the front and side need to be vertically combined. If the heights of the front and side are inconsistent, the colored lantern shape will be dislocated, causing the later wire arrangement welding cannot be smoothly carried out. The three-dimensional modeling of colored lanterns is often made in sections. Take figure as example, usually the production order is making the heads first, then the bodies, and finally the legs and feet. This is more convenient to operate, so the height of the front and side of each part must be consistent. For example, the height of the front and side of the nose need to be consistent to the height of the front and side of the mouth.

The graphics presented after the three-dimensional modeling setting out can only be a head-up effect, so there cannot be any perspective when drawing the front and side of the three-dimensional modeling. If the design sketch is a top view or upward view effect, it needs to be converted into a head-up effect when doing the drawing. For example, when drawing the lower edge of the coat or the outline of the sole, we often observe the upward arc line, which needs to be converted into a horizontal line. When making a clenched hand, we need to draw the outstretched hand first, then weld the iron wire along the outline of the hand for sampling, then bend the flat iron line according to the joint structure of the finger, and finally weld the thickness of the hand, thus making a clenched three-dimensional hand.

Students should accurately use solid lines, dashed lines and lines of different colors when setting out three-dimensional modeling. When drawing the front and side of a three-dimensional modelling, it is often necessary to use solid lines and dashed lines so as to easily distinguish the front and back relationships of various forms. It's quite important to use dashed lines and solid lines reasonable. For example, when drawing the two legs from a figure's side view, solid lines should be used on the front leg and dashed lines should be used on the rear leg. The dashed lines should be used on the rear leg where the rear leg is covered by the front leg and also be used on the part where the rear leg is not covered. In this way, the relationship between the front leg and rear leg is clear at a glance. Otherwise, it is easy to see that the left leg becomes the dynamic of the right leg and the right leg becomes the dynamic of the left leg. When drawing the back of the human body, the spine should be drawn as a solid line and the latissimus dorsi should be drawn as a dashed line. In some complex three-dimensional modeling, it is often necessary to use different colors to distinguish different contents, such as clothes and scarves, clothes inside and clothes outside, etc., all can be distinguished with different colors, otherwise there are too many lines and easy to cause confusion.

3. Emphasize the Importance of Three-Dimensional Modeling Setting Out in the Colored Lantern Project, So That Students Can Systematically Learn Three-Dimensional Modeling Setting Out and Carrying Out Targeted Training for Three-Dimensional Modeling Setting Out

According to the employment situation of graduates from the Fine Arts College of Sichuan University of Science & Engineering over the years, it can be seen that many students will be engaged in the work of on-site art design for colored lantern projects after graduation. The on-site art design is mainly responsible for drawing and setting out construction drawings,

coloring, surface art treatment, guiding installation and other work of supervising the artistic effects of colored lanterns. The biggest difficulty of on-site art design is the setting out of three-dimensional shapes. The level of three-dimensional modeling setting out often determines the artistic level of the on-site artists, and the artistic level determines the salary, so students must know the importance of three-dimensional modeling setting out.

Teachers need to supervise students in the teaching process of three-dimensional modeling setting out, find problems in time and guide students to revise. After students master the theory and method of three-dimensional modeling setting out, they still need a lot of targeted training. By analyzing the single-angle three-dimensional modeling patterns on the design sketches, the students draw accurate front and side figures of equal height, so as to cultivate their three-dimensional space sense and image thinking transformation ability. In terms of training content, students should be able to train the three-dimensional shapes of animals, characters and cartoons commonly used in the colored lantern projects. Animals commonly used include dragon and phoenix, Chinese zodiac, lion, peacock, crane and Kirin. The commonly used three-dimensional modelling of characters include the God of Wealth, the Longevity Star, Luohan, Guanyin, the Eight Immortals and various realistic characters. Cartoons include Piggy Page, SpongeBob, Guobao Special Attack, Doraemon, Bears, Huludao, Snow White, etc.

4. Practice Gives Real Knowledge, Let the Students Go Deep Into the Colored Lantern Production Site, Setting Out on Site

Zigong colored Lantern Company has taken over 80% of the Chinese colored lantern market. As the year draws near, there are many colored lantern projects. This requires a large number of colored lantern on-site artists. Some students can follow Zigong colored Lantern Company out to take on the job of on-site artists. Students can not only practice colored lanterns on the construction site, but also receive certain remuneration. In addition, students can inspect the colored lantern projects in Zigong, Chengdu and Chongqing, especially the annual Zigong International Dinosaur Colored Lantern Festival, which is the world's top colored lantern project in terms of investment scale and artistic effect. Sichuan University of Science & Engineering is located in Zigong, which means that it is convenient for students to go to the colored lantern production scene and learn from experienced artists modestly.

5. Stimulate Students' Enthusiasm and Initiative in Learning and Cultivate Students' Love for Zigong Colored Lantern

Colored lantern industry is a special industry, with strong regional characteristics and fewer employees than other industries. At present, the personnel engaged in colored lantern industry are well paid. Teachers can stimulate students' enthusiasm and initiative, cultivate students' love for colored lantern industry, thus promoting colored lantern teaching and enabling students to be better qualified for the role of on-site art designer and colored lantern designer in colored lantern practice.

6. Strengthen Students' Ability of Using Software Spray Setting Out

The traditional setting out is called hard ground setting out, which is a 1:1 drawing on hard ground by site artists using stone pens and pigments. When painting, they need to bend down. Site artists often suffer from pain in the waist and back after working for a day or two, and the efficiency is low. Spray painting setting out is to use PS, CDR, CAD, SAI and other software to carry out line drawing setting out (manual drawing board can also be used to assist drawing), and then spray out in a spray painting way of 1:1, thus saving time and labor. In the past two years, with the cost of spray printing reduced, some companies allow artists to carry out spray

printing setting out, which can free up part of the time and energy of the artists on site for the surface treatment and artistic supervision of colored lanterns. Spray painting and setting out is a trend. Students should learn relevant software, master it skillfully and use it flexibly in colored lantern production.

Through the training of the above measures, try to let the students accurately draw the front and side figures of various three-dimensional drawings in the setting out of three-dimensional modelling, so as to improve the accuracy and artistry of students' colored lantern works and cultivate students' colored lantern practical ability, making efforts for the overall improvement of Zigong colored lantern characteristic teaching as well as making contributions to serve the local economy and culture.

Acknowledgements

Sichuan University of Science & Engineering's school-level educational reform project, "Teaching Research on Setting out Artistic colored lantern Stereo Modeling" (No.JG-1760)

Xihua university Local Cultural Resources Protection and Development Research Center Project "Study on Protection and Inheritance of Zigong colored lantern Silk Frame Modeling Techniques" (No.17DFWH038)

Sichuan province philosophy and social science key research base, Sichuan province university humanities and social science key research base-modern design and culture research center project "Zigong folk colored lantern silk frame modelling protection and inheritance research" (no: MD17C001)

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