



Research Article

ISSN : 0975-7384
CODEN(USA) : JCPRC5

Computer-aided technology applied in 3D animation modeling design

Zhili Xu

Huzhou Vocational and Technical College, China

ABSTRACT

Aiming at inspiring designers and assisting them to make modelings more efficiently, a research is carried out in this paper to solve the problems that traditional 3D animation modeling design is faced with. Computer-aided technology is introduced to the 3D animation modeling design.

Key words: Computer-aided; 3D animation; design

INTRODUCTION

As a branch of modeling art, animation has been appreciated by people all over the world. In the rapid development of today's animation industry, animation and 3D technology integrate with each other more closely, and 3D animation has already become an important force to promote the development of animation and its derivative product. It is not difficult to find the existing outstanding 3D animations, such as the funny cartoon toys of Toy Story and the martial arts masters of Kung Fu Panda, that creative 3D animation modelings are the core elements of the excellent animations. Successful design of animation modelings can not only get loved and respected by audience, enhance the box-office appeal of the animation itself, but also play a vital role for the development of the entire animation industry and its derivative industry.

The traditional design method of 3D animation modelings, by which can obtain attractive and precise 3D animation modelings, is to use three-dimensional modeling software such as Maya or 3D Max to draw directly. However, this method is faced with many problems, for instance, the lack of creativity, long design circle, high production costs, etc. For the problem of the lack of creativity, the reason is that animation designers are often subject to the limitation of the existing modelings and design concepts in the design process, therefore, they can not design creative modelings which are attractive and unforgettable enough. For the problem of long design circle and high production costs, the reason is that although the 3D animation software are powerful, to skillfully master them not only requires users to have knowledge of computer technology and aesthetics at the same time, but also need a long learning process of modeling. Moreover, it takes the designers a lot of time and energy to design, draw and complete each modeling, and this will undoubtedly extend the design circle and increase the costs to some extent. Therefore, how to quickly and automatically generate creative 3D animation modelings has become a research focus of the present computer-aided creative design.

The Application of computer-aided Technology in animation modeling

During the process of setting the professional courses, we fully considered the target of cultivating professional talents as well as the demand of the oriented industry of this major, firstly, we clear the professional orientation of the main major, based on the professional direction of the main major, we took the major of "typesetting system" and "multimedia design technology" as the two auxiliary direction, in order to facilitate the employment of graduates who can have wider range of adaptability and flexibility for jobs. During the process of designing the curriculum, combining the technology, art and humanities education organically through to the professional teaching and practical process, which can make the students have skills and techniques with good comprehensive accomplishment for occupations. The course structure of this major took the ability of the computer-aided industry

as the main line, the curriculum is covered with the artistic quality, the basic theory of occupation, the technical ability of occupation, the development of occupational quality and humanistic and scientific quality, etc. Cultural qualities, humanistic and scientific quality put focus on developing students' humanities accomplishment and artistic accomplishment, while the basic theory of occupation and the development of occupational quality is mainly to set up necessary professional basic courses in the curriculum and improve professional art literacy, while the occupational ability put focus on the development and improvement of the students' occupational technical ability.

The main principles that are embodied in the professional teaching: the combination of skill training and art performance; the combination of the traditional inheritance and innovation, the combination of training and teaching practice, the combination of the theory of technology with the theory of art, the combination of classroom teaching with the practice of art. It puts emphasis on the cultivation of comprehensive application of art and skills, as well as the comprehensive ability and creative ability, so as to improve students' art quality.

Computer Skills Training Combined with Art Performance

The related computer-aided skills are the premise of the artistic expression, without good and skillful computer skills, they may not have the exquisite art performance. Professional learning model ability and artistic accomplishment will not play its function. Such as the students majored in multimedia web site designing did not learn webpage designing software, thus, multimedia technology is difficult to express the designing concept, realizing the website's promotional function and service function. Meanwhile, only learning to use the related software without the art creativity and performance, the designing website is lack of the feature of appreciation as well as the vitality. Skills take art performance as the fundamental purpose, without the artistic performance, the skills will lose its significance. In the past traditional teaching, it put emphasis on skills, looked down upon art. In the curriculum of animation modeling, we adhere to the principle of the skills training and artistic requirements at the same time, which can make students master the skills, at the same time, the ability of having artistic experience, comprehension and expression ability can be improved significantly. The combined talents of computer-aided technology need the combination of technology and art as well as humanities. Therefore, as the talents of computer-aided technology, not only as the expertise technical talent, but as a high-quality compound talents with humanities and cultural taste. In addition to mastering the solid professional skills, we should also have rich cultural knowledge and artistic accomplishment.

The Combination of Traditional Inheritance with Innovation

After a long-term art development, it formed a complete theoretical system and style, in animation modeling, we always adhere to respecting and learning Chinese and foreign outstanding media works, students are required to understand various related works with a number of designing concepts and follow with the advanced technologies in the world, so as to grasp the technical and artistic style. On this basis, making great efforts to carry out the curriculum reform, putting the cultivation of students' creative designing capabilities in a prominent position, through creating the works, making comment on the works, showing the works, the creative ability of students can be improved. Creativity is the soul and core of all majors such as: computer-aided, art designing, advertising and other professional courses. Because, in our designing curriculum system, there is a rare occurrence of special training course with artistic quality and creativity. In the teaching practice of art courses, it only focused on developing some professional training and skills that students should master, but it ignored the innovation ability. For example, in the graphic designing classes, during the process of teaching, teachers often teach PS technology to make software, so as to let students do in practice, and students should submit a picture works made by themselves at the end of the semester, but they rarely mentioned in the course about composition, color, and what kind of creative thought can meet the taste of modern generation. Teachers never blindly took foreign outstanding works to do case analysis during the teaching, or only learn little about the western culture, it will not occur that students do not know how exactly the creative ideas behind the works happened.

The Combination of Method Training and Teaching Practice

computer-aided technology is a major with strong application. Experimental training courses and the construction of practical system is very important, trying to cultivate talents that the society needed should be based on practice, taking practice as the fundament. In cultivating the computer-aided technology talents, the mode of practice teaching generally has three kinds, one is the experimental course, another is through the centralized practice, the last is through the enterprise training.

We focus on the combination of classroom teaching and concrete practice, during the process of the teaching, it can make the students learn to master the method effectively, truly put knowledge into use, so as to adapt themselves to the future work, who can become useful talents and be welcomed by the industry and enterprises. Such as, when we open some main subjects, we can let the students fully appreciate their important roles of the courses in the subsequent courses and industry. On one hand, the curriculum should be closely combined with teaching contents,

inviting the teachers with rich experience in the industry who had high academic attainments and practical experience have open lectures or teaching, which can make students learn professional knowledge vividly and intuitively, so as to stimulate the students interest in learning; on the other hand, the students can choose a topic to complete the designing works of the project, which can make students understand the methods and process of digital works in the course of studying stage and initially be engaged in the development and design of the project under the teacher's guide, laying better foundation for entering the industry for the creation of computer-aided.

Through the research, among the art department that set up the professional computer-aided technology major, 90% of them set up two or more elective directions for the major, which can allow the students in grade three or four to choose their own choice of different professional direction according to the basis and characteristics. It is shown as Fig. 1, in the graph, the horizontal axis is the developing direction, the longitudinal axis is the number of the colleges in this direction, the most professional direction of each school set up is the game design and development, animation, film and television program production, computer-aided software development, etc. However, after the analysis, it also found out a number of problems, one of them is the direction of the professional computer-aided technology and computer-aided arts professional direction is the same, which can not reflect the characteristics of computer-aided technology major; secondly, setting the professional direction of the curriculum is a little more random, for example, the professional direction of animation production major that is set up by some universities just randomly selected three to four courses of the animation major of Communication University of China.

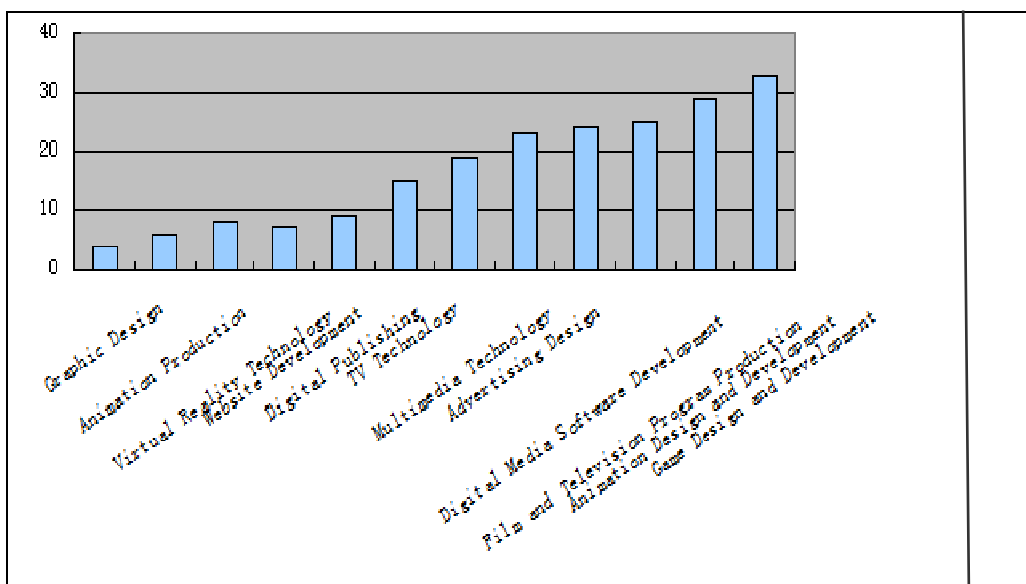


Fig 1. Different professional direction

Setting the professional direction of the major is the basis of the computer-aided technology major, generally, setting the professional direction should consider the following factors:

- (1) Social needs, social needs can decide the employment of students, which can determine the survival and the development of the major;
- (2) The actual situation of the school, taking the advantages of the school's resources, fostering the strengths and avoiding the weaknesses;
- (3) Considering the actual condition of the students, such as the computer-aided technology of the second class colleges should highlight the application, namely " use information technology effectively, rather than develop information technology";
- (4) Optimizing the design of the curriculum system, which should emphasize the internal relations between the courses,so as to avoid the overlapped contents and repeated contents.

The professionals that major in computer-aided technology art should adhere to "application is the root ", we think we should do the following several aspects: one aspect is to construct the art professional curriculum system to fit the training of the applied talents. Try to change the the high proportion of the basic theory of class teaching, as well as the condition of the shortage of students' practical ability. Another aspect is to change the traditional teaching mode and teaching methods. The traditional mode of teaching ,is teachers give speech, students listen, which can not play the role of the subjective initiative of students, the characteristics of computer-aided technology major decided to strengthen practical teaching, with the cultivation mode of joining the college and enterprise together, at the same time, strengthen the new curriculum under the concept of activity courses. The third aspect is to change the traditional way of evaluation. We must introduce work evaluation, project evaluation, evaluation on creative report into the evaluation system.

REFERENCES

- [1] Jing Li. *Journal of science and technology*, **2008**, 29 (02).
- [2] Wang Zikai. *Journal of publishing and printing*, **2008**, (2):59-60.
- [3]. Liangfang Shi.principle and the basis of curriculum theory, curriculum problems [M]. Beijing: education science press, **2001**.
- [4]] Mingfen Huang. New media and western digital art theory [M].Tianjin: Tianjin people's publishing house, **2009**.
- [5] Youquan yang. Art transformation under the computer-aided [W].Beijing: China social sciences press, **2011**.