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Training Mode and Development Strategy of College Educational Talents Based on 1+X Digital Creative Modeling

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Abstract: With the continuous development and growth of the domestic digital media industry, digital media technology, with the help of digital and information platforms, with the perfect combination of artistic design and technical language, has become the main expression of digital information media in the society of the times. Secondary vocational education is an important window for cultivating middle and primary skilled talents, and the digital media technology application major of secondary vocational schools must further optimize the talent training model. The purpose of this article is to study the talent training model and development strategy of college education based on 1+X digital creative modeling. This article first analyzes the existing problems in the current 1+X digital creative modeling professional talent training model from the aspects of curriculum setting, school-enterprise cooperation, and teacher training. Then combined with the needs of the digital media industry, it discussed the new direction of the training model of digital media technology professionals in colleges and universities, and carried out certain thoughts in terms of concepts, goals, teaching models, evaluation systems, etc., and proposed a model based on 1+X digital creativity. The model plan and development strategy of the training model of college education talents. According to survey data, there are 222 full-time teachers, 43 part-time teachers, and 104 training instructors in the majors related to digital creative modeling in School A. However, the teacher-student ratio is insufficient, and the teaching force in this field in colleges and universities is relatively weak.

1. Introduction

The 1+X digital creative modeling course, as a core professional course of the college art design

major, occupies a pivotal position in the curriculum system setting [1-2]. However, the outstanding problem of the talent training model of creative modeling in my country's colleges and universities is that education is out of practice [3-4]. The characteristic or fundamental policy of education is to face reality directly. If these are lost, vocational education will deviate from its course [5-6]. Due to the lack of industry research in many colleges and universities, and some teachers do not pay attention to professional development, the technology taught is outdated and cannot adapt to the ever-changing changes in science and technology [7-8]. Understand the needs of the digital creative media industry, summarize the talent training model and development strategy of college education based on 1+X digital creativity modeling, and provide a certain reference for the talent training of colleges and universities. Such research is imminent [9-10].

In the research on the training model and development strategy of college education talents based on 1+X digital creative modeling, many scholars at home and abroad have conducted mature research on it and achieved good results. For example, Zhang H said digital creative modeling Design is an interdisciplinary professional direction generated in the background of the development of the digital media industry. It should focus on cultivating students' ability to integrate information technology and art [11]; Zhang Y pointed out that the talent training model should be closer to the needs of industrial development and cultivate Skilled talents corresponding to industry and market demand [12].

This paper investigates the construction status of the domestic digital modeling major, and selects A colleges and universities to make a targeted analysis of the major construction situation, to see the big from the small, and to understand the current status of the talent training model based on 1+X digital creative modeling in Chinese universities. At the same time, by looking for problems in the current talent training model in colleges and universities, thinking about the talent training model, updating the educational concept, clarifying the training goal, innovating the teaching model, and putting forward exploratory opinions on the evaluation system. Finally, suggestions are made for colleges and universities based on 1+X digital creative modeling.

2. Research on the Training Mode and Development Strategy of College Education Talents Based on 1+X Digital Creative Modeling

2.1. Problems in the Traditional Model of College Education Talent Training Based on 1+X Digital Creative Modeling

(1) The training model lacks university characteristics

In recent years, in order to meet the needs of the society and the development of 1+X digital creative modeling, various colleges and universities have opened digital media technology majors such as multimedia technology, digital imaging, and film and television production. However, there is no uniform standard for the professional name and professional construction. The traditional teaching mode of digital media technology majors in colleges and universities still follows the normal high school teaching mode, and the arrangement of class hours and teaching methods emphasize theory rather than practice; the professional curriculum is based on the university model and has no school characteristics. It can be summarized as the form of teaching in colleges and universities is teaching for teaching and employment for employment. Many schools have never or rarely visited the industry and are not clear about the company's demand standards for talents. The students trained in this way can't fully meet the needs of the enterprise and the future career development of the students.

(2) The curriculum system remains unchanged over the years, and the teacher's knowledge is

solidified

Teachers in colleges and universities have been at the forefront of education for a long time, have insufficient contact with the society, lack of industry practice experience, are not familiar with the actual production of enterprises, and have a relatively narrow vision of education and teaching. Teachers' knowledge will not be actively updated. Teachers have not participated in industry practice. The teaching is based on the theory of "talking on paper and working behind closed doors." There is no way to update. The students trained to understand the software and understand the operation, but cannot follow the reality and are out of touch with the society.

(3) Unreasonable evaluation of teaching effect

The university education model is the "3+1" model, that is, "three years of school study + one year of industry internship". The evaluation of students' learning and comprehensive performance by schools and companies is relatively independent. The school will make a comprehensive evaluation for the two years of study at school, and the company will evaluate the industry internship for one year. School teachers have basically nothing after the student internship. This presents the form of schools running in isolation.

At present, most colleges and universities have a relatively single evaluation of teaching effects, most of which are determined by the quality of students completing a case on the computer. Such a course evaluation method will cause students to memorize the operation steps and do not use their brains to think about the problem. Therefore, it is difficult to cultivate students who love thinking and have the courage to innovate.

(4) Single teaching content

At present, most of the teaching content of digital creative media professional 3D model making courses in colleges and universities are basically designed according to the idea of using learning software. Taking Maya as an example, the course teaching content according to the cognitive order of the software mainly includes the appearance of the software interface, the basic operation of the window, the type of model creation, the parent-child level of the model, the model material, the lighting setting, and the rendering output. In the actual teaching implementation process, most colleges and universities use the creation of basic geometric models, the production of simple materials and textures, three-point lighting arrangements, and hardware renderer rendering as the main content of the teaching. Each part is explained independently. There is no connection between them, and they are rarely able to explain the application and production rules of software, and the knowledge and skills required by the company's job capabilities.

(5) Teaching methods are lagging behind

At present, the teaching of digital creative modeling courses in many colleges and universities is mainly arranged in the computer room. The advantage is that when teachers explain 3D software, they can use multimedia or electronic classrooms so that students can keep up with the teacher's teaching progress, and can practice in time to avoid in the traditional classroom, teachers blindly explain, and students practice after class, which affects the teaching effect. However, there are some problems in teaching in the computer room. For example, the teacher teaches while students learn while the teacher operates one step, and the students imitate and do one step without their own thinking and understanding. It is pure imitation. Once the teacher stops and asks the students to make their own, the students will be unable to start. This kind of problem is mainly caused by improper teaching methods of teachers, too single and rigid, teachers failing to mobilize students' interest in learning, and lack of diversity in classroom teaching.

2.2. Training Mode and Development Strategy of College Education Talents Based on 1+X Digital Creative Modeling

(1) Improve the modularized teaching of professional courses

The teaching content of professional courses is divided into three modules: unit modules, multiple modules, and "simulation workshop" work modules. Each module is assessed in stages according to the training requirements, and only after passing the assessment can it be adjusted to the next module, urging students to change from passive learning to active learning, and realize the transformation from teaching-oriented to learning-oriented. Modularization of professional teaching content, procedural operation and training, and phased training and assessment will transform students' learning attitudes.

Combining the "modern mentoring system" and the German "dual system" (enterprise + school) teaching mode, establish a competency-based curriculum system, implement a "module structure" professional practical classroom teaching, and form a position-module- the action course system of the project. Pay attention to the combination of theory and practice to improve the comprehensive quality of students.

(2) Strengthen the training of the professional knowledge of existing teachers

The construction of teaching staff must also strengthen and optimize the teaching team, arrange for teachers to go out to study, exchange and train, go out to see more, and learn from others. Colleges and universities can learn from some developed countries in Europe, implement a teacher rotation system, through student scoring and comprehensive school evaluation, scoring poor teachers, and arrange training and learning. This can mobilize the enthusiasm of teachers and students. Colleges and universities can expand the scope of external teachers by recruiting some professional teachers from well-known colleges and universities, higher-level colleges, or graduates of related majors who have returned overseas, because foreign digital creative modeling Teaching is much earlier than us. By accepting overseas talents, new knowledge and new thinking can be brought to the stage as quickly as possible. We should also send some teachers to schools with good professional development in Europe and America every year to learn their excellent teaching methods.

(3) Establish a professional laboratory for digital creative modeling

A strong laboratory teaching can well assist the traditional classroom teaching, the shortcomings passed on by word of mouth, and arouse the enthusiasm of students. Such a laboratory teaching team needs a group of engineers, experimenters, and management who understand network technology, computer technology, photography and camera technology, video and audio technology, lighting and lighting technology, animation technology, software technology, input and output documentary and other technologies. This requires the school to invest in the realization of the link and complete the course tasks.

2.3. JPEG Image Digital Watermarking Algorithm

Peak signal-to-noise ratio is an engineering term that expresses the ratio of the maximum possible power of a signal to the destructive noise power that affects its accuracy. Usually after image compression, the output image is usually different from the original image to some extent. For the image quality of the beam after processing, we usually refer to the value to determine whether a certain processing procedure is satisfactory or not. For a two-dimensional image with the same length and width, it is defined by the mean square error, as shown in formula (1):

$$PSNR = 10log_{10}{}^{255^2}_{MES}(\text{dB}) \quad (1)$$

The mean square error is a statistical feature index used, which can directly reflect the change of the evaluation object, and the relevant features of the evaluation carrier can be insighted through the MES. The paper can use the mean square error to estimate the change of the watermark image quality, and give the objective standard of the watermark image quality change, which can be used to measure the change of the watermark image quality compared with the carrier image. The formula definition of mean square error is shown in formula (2):

$$\text{MES}=\frac{1}{mn}\sum_{i=0}^{m-1}\sum_{j=0}^{n-1}\text{I}(i,j)-\text{K}(i,j)^2 \quad (2)$$

3. Experimental Research on the Training Mode and Development Strategy of College Education Talents Based on 1+X Digital Creative Modeling

3.1. Research methods

This research mainly uses three research methods: investigation and research method and comparative analysis method.

(1) Investigation and research method

The investigation and research method runs through the whole research. It is mainly used to collect first-hand materials, understand the actual situation and consult literature. By clarifying the purpose of the investigation, setting the scope of the investigation, and selecting materials related to this research, the path and conclusions of the research are obtained.

This paper selects the major domestic and digital media technology majors of secondary vocational schools in Chongqing as the research object. Through the Internet survey method, the website of the model school is consulted, and the surrounding secondary vocational schools are visited to investigate the professional construction of the secondary vocational schools.

(2) Comparative analysis method

Comparative analysis is a way of thinking to determine the similarities and differences between the elements of the research object, that is, according to certain standards, compare and analyze the different manifestations of the objective phenomenon of a certain thing in different situations, so as to find out the universal laws and its particular nature strives to arrive at a method that conforms to objective and practical conclusions.

3.2. Survey Object

(1) Method for selecting survey objects:

Sampling survey is to conduct a sample survey of digital creative modeling related majors opened by domestic A colleges and universities.

(2) The spatial scope of the investigation:

International surveys, surveys on the status quo of the development of digital creative modeling majors in famous foreign universities.

National survey, survey of issues such as the development status of digital creative modeling majors in famous universities across the country.

(3) Research tools:

Natural surveys are conducted through general methods such as books, publications, and interviews.

Questionnaire survey, through the form of questionnaire, to investigate some questions.

(4) Investigation time:

Investigate in advance. Before writing this article, do relevant research, data sorting, and data analysis.

After the investigation, when the article is changed, the relevant data will be changed and sorted out.

Follow-up surveys, some data will change over time and need to be adjusted in time.

4. Experimental Analysis of the Training Mode And Development Strategy of College Education Talents Based on 1+X Digital Creative Modeling

4.1. Allocation of Teachers for Digital Creative Modeling in Colleges and Universities

By investigating the teaching staff of digital creative modeling majors in school A, it is helpful to put forward development strategies and provide practical reference. The results of the questionnaire survey show that there are 222 full-time teachers, 43 part-time teachers, and 104 training instructors, totaling 369 in the majors related to digital creative modeling. The specific data is shown in table 1:

Table 1. The faculty allocation of digital creative modeling majors in colleges and universities

Professional subcategory	Full-time teachers	part-time teacher	Training instructor
Digital Broadcasting and Television Technology	11	8	14
Digital Media Technology Application	162	20	60
Computer animation and game production	23	5	16
Image and Film Art	26	11	14

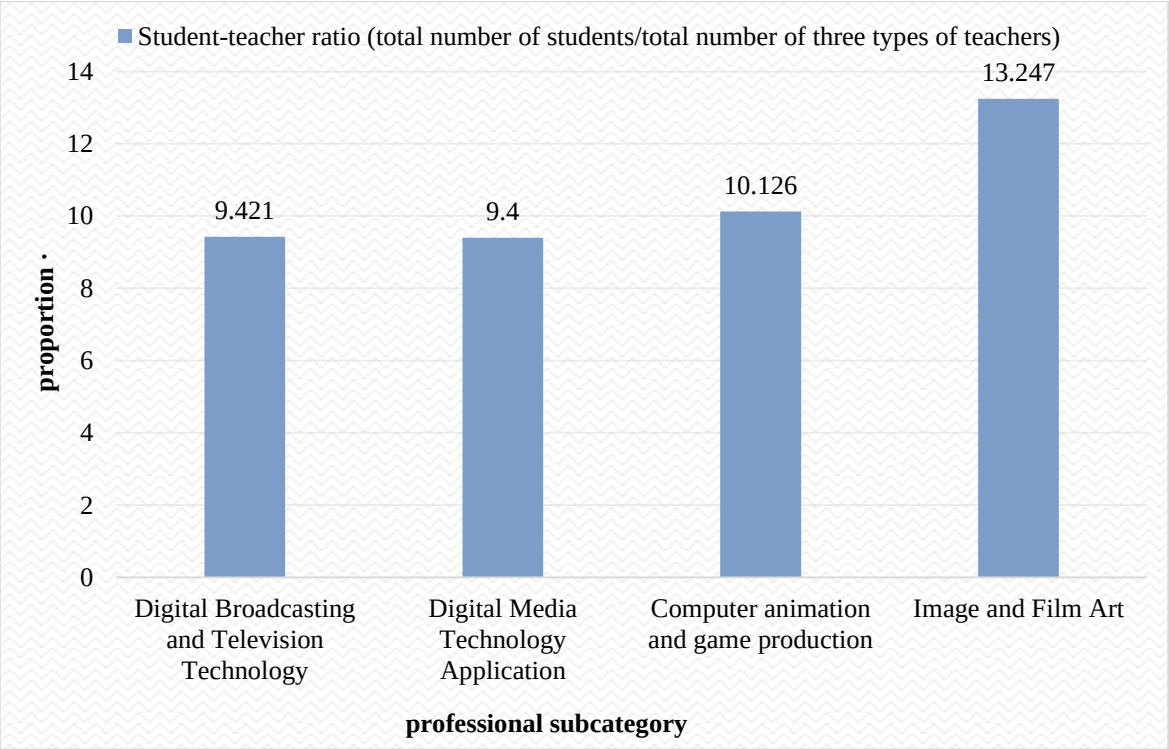

Figure 1. Teacher-student ratio of each major

It can be seen from figure 1 that the teacher-student ratios of the various majors are not much different, all of which are around 10%. In the innovation of college education talent training model based on 1+X digital creative modeling, it is possible to strengthen the introduction of digital media teachers, lower the threshold of academic qualifications, and increase the salary of college teachers (the current salary standard for college teachers is much lower than that of primary and secondary schools, and at the same time lower than related enterprises), raise the professional and technical threshold for postgraduate examinations, strengthen school-enterprise cooperation, and introduce first-line talents from enterprises.

4.2. Situation of Digital Creative Modeling Professional Equipment in Colleges and Universities

This research investigates the professional equipment of digital creative modeling in School A to understand the shortcomings and needs of the school's professional teaching. Through the investigation, the total value of the school's teaching and training equipment is 11.81 million Yuan, including digital broadcasting and television technology majors. The equipment is less than 8.31 million Yuan, and the lowest is the imaging and film and television arts. The total value of teaching and training equipment is only 480,000 Yuan. The specific survey results are shown in Table 2.

Table 2. Professional equipment for digital creative modeling in colleges and universities

Professional subcategory	Total value of teaching and training equipment (ten thousand Yuan)	Average value of students (ten thousand Yuan)
Digital Broadcasting and Television Technology	831	0.339
Digital Media Technology Application	224	0.348
Computer animation and game production	79	0.250
Image and Film Art	48	0.179

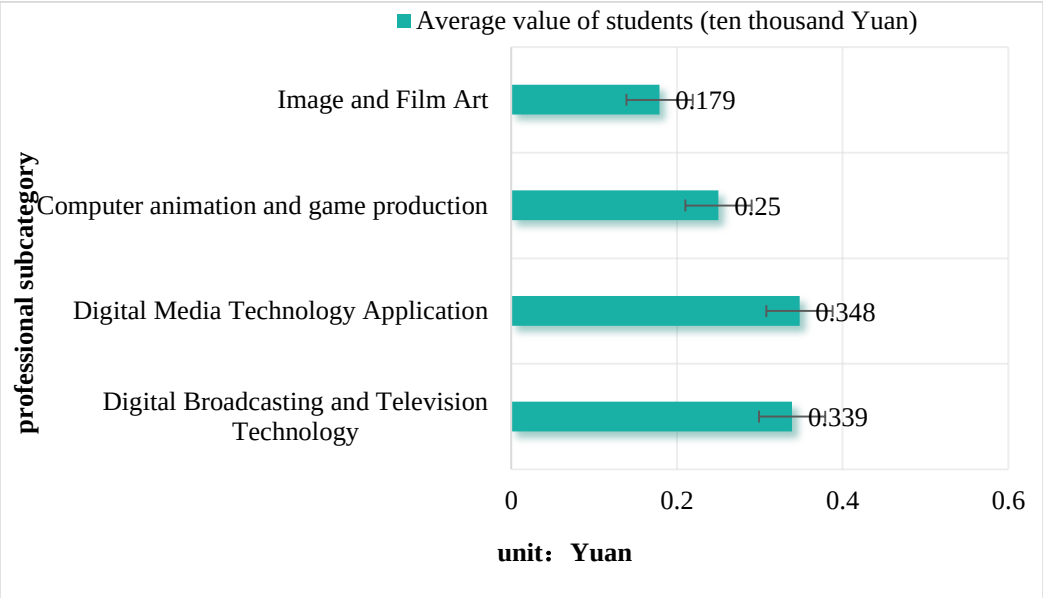

Figure 2. Professional equipment for digital creative modeling in colleges and universities

It can be seen from Figure 2 that the highest average value of professional equipment in school A is 0.348, and the lowest is 0.179, which can reflect that school A still has an imbalance in professional development, insufficient teaching resources, and insufficient equipment. The school's training equipment is insufficient to meet the needs of professional teaching. For this reason, it is recommended that schools can cooperate with enterprises and share resources. Because from the financial resources of the school, or from the perspective of the site, the construction of some laboratories may have some difficulties or limited conditions. It can be funded by the society. If you cooperate with some large film and television companies, advertising communication companies, and animation companies Establishing a cooperative relationship can not only solve the problem of funding, purchase equipment together, but also make full use of the equipment, and also give full play to the students' ability to learn actively, and to give play to the students' ingenuity, so as to cultivate a team for future cooperation companies.

5. Conclusion

The advancement of science and technology drives the development of society. The society is constantly progressing, and the art is also constantly developing. Every historical change in human history is inseparable from the drive of science and technology. The technological revolution promotes the development of art. The development of the digital media art industry has led to the rise of digital media majors in colleges and universities. People are slowly accepting and appreciating this new art form, and some problems in digital media education under the rapid development have also become prominent. Solving this problem can better promote the healthy development of digital media art in colleges and universities. This article provides a theoretical basis for vocational schools to train skilled talents who are "zero distance" from the needs of the film and television animation industry. At the same time, it provides a reference for the analysis of talent job requirements and teaching research for professional colleagues.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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