A Comparative Study on the Curriculum System of Digital Media Between China and America

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Abstract—**Digital media specialty originated in Europe and America early but was introduced into China really late. Being a new specialty in China, digital media specialty has developed rapidly in recent years in order to meet the huge market demand. As a result, an increasing number of prestigious universities, such as Zhejiang University and Communication University of China, start to set up this specialty to meet the demand. However, the curriculum settings in those universities still need enrichment when compared with those in two universities of America which are Purdue University and Drexel University. To absorb the advantages of curriculum settings in American universities, this paper tries to make a comparative study on the curriculum settings of digital media between China and America, analyze the differences between representative universities in both countries and then propose suggestions on curriculum settings of digital media for universities in China.**

Keywords—comparative study; curriculum system; digital media specialty; China and America

I. INTRODUCTION

Nowadays, traditional radio, television and movies are in a rapid tendency to develop into digital audio, digital video and digital cinema, and the latter, with the rapid development and integration of computer, network and digital communication technology, build up a new generation of digital media, including increasingly popular forms such as computer animation and virtual reality [1] [2]. As a new form which contains a wide range of technology and art, digital media aim to cultivate compound talents who have both scientific literacy and artistic accomplishment, and also have the ability of carrying out digital design and creation with a computer as a tool [3]. The digital media curriculum system must have new features of digital, comprehensive, and contemporary. Digital media specialty originated in Europe and America early but was introduced into China really late. The digital media courses in America have a relatively complete process of development and have formed a relatively mature system, which is worth to learn and use for reference [4] [5]. However, due to the differences in cultural and political factors between the two countries, the

developments of the digital media curriculum systems are different [6]. So it is helpful in promoting the constructions of digital media curriculum system in China from a comparative perspective, which will as well help promote the construction of relevant curriculum systems in China.

II. PRESENT STATUS OF DIGITAL MEDIA SPECIALTY IN FAMOUS UNIVERSITIES IN CHINA

In order to be representative, we selected the digital media technology specialty in Zhejiang University and the digital media art specialty in Communication University of China as our research objects.

A. Digital Media Technology Specialty in Zhejiang University

Main features of the specialty include:

- Cultivating students' computer science literacy through computer-based general education courses, especially programming skills, and focus on understanding the essence of Chinese culture;

- Cultivating students' basic painting literacy, comprehensive modeling literacy and design ability via general courses;

- Cultivating students' creative design, technology development and production skills in the fields of computer animation, computer games, human-computer interaction, etc. through professional courses.

B. Digital Media Arts Specialty in Communication University of China

Main features of the specialty include:

- The content of the course is highly correlated with the film and television industry;

- Taking film, television multimedia and game content creation as the main direction, covering the field of film production and communication such as content

integration, distribution, transmission security, media resource management;

- Through the second course, students are encouraged to actively participate in extra curriculum practice activities.

III. DIGITAL MEDIA SPECIALTIES IN PRESTIGIOUS UNIVERSITIES OF AMERICA

There are no specialties in American universities that are exactly named by digital media technology or digital media art, but similar connotations corresponding to digital media technology exist. Among them, specialties in two institutions are selected — Computing Graphics Technology (CGT) in Purdue University and Interactive Digital Media in Drexel University.

A. CGT in Purdue University

This specialty trains students with design skills of creating and managing media industries related to computer graphics for technical and design works. The students solve practical problems in the industry in the form of teams. The project has the joint guidance of tutors and business professionals, and the acceptance of each semester is conducted in the way of project defense.

Eight majors are under CGT: animation, building information modeling, effects technical direction, game studies, human centered design & development, web programming and design, virtual product integration, or visual effects compositing.

Students will acquire computer image technology and related interdisciplinary knowledge, including: technical problem solving, graphic database management, applied graphic programming, graphic design, interactive media design and development, 2D and 3D modeling, and animation and motion-based computer graphics.

B. Digital Media and Interactive Digital Media in Drexel University

The School of Media Arts and Design at Drexel University is a leading school in the college and interactive digital media is an important training direction for the college. Most of the college's courses are taught by tutors from industry, so they are practical. In courses with high credits, students generally cooperate and learn in the form of workshops. Most courses have some pre-requisite courses to be finished. If the pre-requisite course is not qualified, the course is not allowed to be taken.

IV. DIFFERENCES IN THE DEVELOPMENT OF CHINESE AND AMERICAN DIGITAL MEDIA CURRICULUM SYSTEMS

A. Differences in the Educational Environment

The educational environment is determined by the socioeconomic foundation, social environment and social development status. China and America have different management models and operating methods due to their social natures and education systems.

B. Differences in Curriculum Settings

In contrast, China's digital media major courses are shallow and lack of training, while the digital media courses in America are refined in direction. For example, in terms of games, professional contents such as game levels and game scripts are specially set up. In the education training mode, they focus on training students to give full play to creativity and to realize their potentials thus computer basics is no longer a shackle. However, due to the lack of development in China's curriculum, focuses are put on the traditional comprehensive education model. The division of the profession is not detailed enough. Even if relevant professions are distinguished, the nature of the professions is not clearly defined, and there is no change on training mode, therefore, the division of the profession is not clear and refined enough, which may lead to the problem that practical ability and the application of talents is not enough.

C. Differences in Flexibility of Educational Contents

The digital media education curriculum in American is more flexible, and the educational contents are constantly updated with the development and needs of times. When new hot issue or technology emerges, education will be adjusted immediately rather than relies on specific textbooks and learning of rigid patterns, while the digital media art curriculum system has not yet reached this level in China, as more emphases are placed on the cultivation of relevant talents' basic knowledge and skills, but introduction of the latest technology is insufficient.

V. CONCLUSION

Though started relatively late in China, digital media is an emerging specialty with a broad development prospect and has been rapidly developed in recent years, owing to its large market and artistic value. The development of digital media in America is globally leading, and there are plenty of differences in specificity, professionalism, comprehensive influence, development level and development trajectory compared with China's curriculum system. In order to develop the curricula of digital media in China more scientifically, we need to pay attention to the full use of educational resources. Although the foundation of the digital media curriculum system in China is relatively weak, the educational environment is conducive to giving play to the guiding advantages of policy guidance and forming a clearly directional synergy, we also need to find a direction to develop rapidly on the basis of absorbing foreign advanced experience. In addition, the digital media profession is closely integrated with the market development, it is suggested that we fully draw on the close exchanges between foreign professionals and the industry, and pay attention to the characteristics of contents update of emerging technology curricula. The construction of China's curriculum system is necessary to have a clear market orientation, clarifying the purpose and orientation of education, training relevant talents more accurately, adhering to the combination of education

and practice, and regarding practice as the ultimate goal of education on the premise of improving the universal foundation, so as to cultivate more competitive and talent students.

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