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Research on Integrated Curriculum System and Core Curriculum Standard of Digital Media Technology Majo

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Abstract

The current market of digital media application technology personnel training positioning, but not optimistic. There is a serious polarization in the positioning of Chinese digital media technical talents. The talents cultivated are usually mainly low-end production personnel (skilled technicians) and pure researchers, while the middle layer compound talents, which are in the greatest demand in the future, are the least. Therefore, under the demand of a large number of talents, it has become the inevitable mission of higher vocational education to cultivate excellent digital media technical talents. It will be the development direction of digital media application technology in the future to cultivate compound applied talents with both the spirit of scientific creation and the ability of aesthetic and artistic creation.

Keywords

Digital Media Technology; Integration of Middle and Higher Vocational Colleges; Core Curriculum Standard.

1. Research Background

With the emergence of a new round of technological revolution and industrial transformation, new modes of production with data as the core factor of production and digital technology as the driving force are flourishing, and human society is rapidly entering the era of digital economy. The 14th Five-Year Plan and the Outline of the 2035 Vision Goals have a special chapter on "Accelerating Digital Development and Building a Digital China", which emphasizes "building new advantages of the digital economy". Moreover, the world is now in the post-COVID-19 era, and society is facing a period of major development, transformation and adjustment. A new round of scientific and technological revolution featuring green, smart and sustainable development is developing. Digital, network and other information technologies are advancing by leaps and bounds, breaking through the technical barriers within the traditional media industry as well as with telecommunications and other related industries. The integration and competition among media is becoming more intense. Internet and mobile media have become emerging media with important influence. The development of digital economy has provided a broader space and more advanced technology support for the development of digital media industry, and the development of digital media has accelerated the dissemination of information in the era of digital economy.

2. Professional Development of Digital Media Technology

The digital media applications of western developed countries are very mature, while China's development is in a weak position temporarily, but the development potential is great. The creative industry market lacks the industrial chain of creative culture with Chinese characteristics. The digital media industry is facing a major development opportunity to construct, develop, design and create excellent digital media art content products with independent property rights. It is urgent to improve the competitiveness of creative products

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at home and abroad. The "power of discourse" in the hands of their own creative industry chain can not only produce huge economic and social benefits, but also benefit the creative culture industry, and produce far-reaching effects on the sustainable development of Chinese economy and society.

With the rapid development of digital media technology, digital media industry is known as the core industry of knowledge economy in the 21st century, and another economic growth point after IT industry. Virtual reality, online games and other digital products bring people great material and spiritual enjoyment, but also completely change people's living habits. Under the state's call and policy support, China's digital media technology and surrounding industries have been growing vigorously, and enterprises have mushroomed, forming a large number of talent gaps. Accordingly, in the era of digital media, the demand for talents is also rising. Digital media talents with high education and skills are in short supply, forming a huge talent gap. How to train digital media talents and how to train digital media talents become the key to solve the problem.

Digital media Technology major is a new major with technology as the main, art as the supplement, technology and art combined. At present, more than 50 colleges and universities nationwide offer this major. The major of digital Media Technology mainly cultivates talents engaged in visual communication, VR virtual reality, graphic design, visual communication, industrial product design, UI design and interaction. Compound talents are important resources for the development of digital media industry. According to the talent demand report issued by the state, the number of future talents in multimedia, film and television, animation, virtual reality and surrounding industries is about 2 million. Digital media technology is constantly applied in film and television animation, online games, three-dimensional architecture, graphic design, virtual and digital creativity and other fields. Talent shortage has become an important factor restricting the innovation and development of digital media. It is necessary to further expand the talent training mechanism, unleash the innovation vitality and potential of the digital media industry, and accelerate the deeply integrated development of media. In a word, digital media major is an emerging industry with great development potential and faces many challenges in its development.

3. Dilemmas for Professional Development

With the expansion of enrollment in higher vocational colleges and the construction of lifelong education system, the number of secondary vocational graduates entering higher vocational colleges continues to increase, and the connection between secondary vocational and higher vocational education has become an important way to train highly skilled talents. The formulation of talent training program and the setting of curriculum standards have become the key to the connection between middle and higher vocational schools, and the curriculum has become the core issue. Because the courses of secondary vocational and higher vocational schools are often independent and separated from each other, the problems in the course convergence are highlighted.

(1) Lack of progressive curriculum connection. At present, most of the digital media majors in higher vocational colleges share a set of talent training programs no matter what kind of students. The curriculum system, teaching standards and teaching content of the integrated students in middle and higher vocational colleges are based on the foundation of the general high school graduates, which inevitably leads to the phenomenon of the content of some courses in the middle and higher vocational stages. Although it is difficult to avoid repetition in the middle and higher vocational courses of the same major from the perspective of vocational post skill requirements, the curriculum standards, teaching content, teaching objectives and teaching organization form of the same course should reflect the hierarchy and progression of

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talent training. (2) The curriculum structure is inconsistent with the focus of cohesion. In order to realize the phased goal of "integration" of higher vocational education in digital media technology major, especially to focus on the connection of curriculum objectives, it is necessary to locate the curriculum objectives of secondary vocational and higher vocational education in the students' entire career, rather than limited to specific vocational posts. The main training objectives of secondary vocational students are to serve the training objectives of higher vocational education. (3) Unclear professional training objectives. In some digital media, the goal of higher vocational cohesion training is not clear enough, the level positioning is not accurate enough, and the difference in training goals is not obvious, which leads to the imbalance of talent training goals. The main reason is that there is no unified basis and standard for the development of talent training programs in secondary vocational schools and higher vocational schools, and there is a phenomenon of independent governance, and there is a lack of coordinated and unified channels and mechanisms. (4) Lack of unified standards for professional course content. At present, there is no unified relevant curriculum standard for the courses of digital media technology major, and there is a lack of consistent textbooks for middle and high schools. The formulation of teaching and training programs and curriculum Settings for each learning stage are completed independently.

4. Research on Integrated Curriculum System and Core Curriculum Standards of Middle and Higher Vocational Schools

The rapid development of digital media industry inevitably requires a large number of specialized talents of different levels and positions. Its talents can be distributed in graphic design, web production, digital film production, virtual reality, game production, network media, digital media display, online training and other fields, which provides a solid foundation and good opportunities for the existence and development of digital media major. Especially this year's emerging virtual reality technology, the arrival of the era of the meta-universe, the digital media industry ushered in unprecedented development opportunities.

In order to thoroughly implement the Implementation Plan of National Vocational Education Reform, the Implementation Plan of Deepening the Integration of Production and Education and Promoting the High-quality Development of Vocational Education in Zhejiang Province and the Guiding Opinions of Zhejiang Provincial Education Department on Deepening the Five-Year Vocational Education Integration, promote the training of integrated vocational talents in digital media technology and improve the quality of talent training, A research team was set up by the Integrated Curriculum Reform working Group of Digital Media Technology Major of Zhejiang Province to focus on the key issues of the integrated curriculum reform of the middle and higher vocational schools, carry out in-depth research on the needs of professional talents and the current situation of professional talent training, and lay the foundation for the integrated curriculum reform of the middle and higher vocational schools.

4.1. Research Ideas and Methods

(1) Analysis and research of key courses. According to the national vocational skills qualification system, the teaching ladder of courses is set up according to the digital media vocational and technical qualifications and grade standards, so as to fully connect the "integrated" vocational skills of middle and higher vocational schools, which is also an important aspect of the "integrated" curriculum connection of middle and higher vocational schools. The evaluation shows that the photographers, editors and designers who have obtained the basic and intermediate certificates related to film and television production or graphic design, respectively.

ISSN: 2710-0723

(2) Research on "integrated" curriculum system in higher vocational schools. Starting from the requirements of core skills of vocational post groups, the teaching system of core courses is constructed by highlighting some basic, specialized and applied contents in specialized courses in the way of reverse thinking.

The main research methods of this topic are as follows: through field research, telephone interview and discussion, aiming at the digital media technology major, recruitment mode, talent training mode, curriculum standards, teaching quality, teaching effect and other issues, the vocational colleges and secondary vocational schools with digital media major in Zhejiang Province were investigated. Using questionnaire method and individual interview method, the study psychology, study effect, vocational cognition and other aspects of middle and higher vocational students were investigated. Visit relevant enterprises and have a talk with human resources department and relevant technical personnel. Collect network media and all kinds of government departments issued information about the development of digital media industry, economic construction development and demand for such talents; Strive for objective, real and persuasive research conclusions.

4.2. Survey Results

The research team obtained the survey results by visiting enterprises and interviewing front-line employees, etc. Digital media technology majors involved industrial enterprises, major Internet enterprises and related service industries, culture and entertainment industries, software and information technology service industries, accounting for 54.24%, 40.68% and 16.95% respectively, as shown in Figure 1.

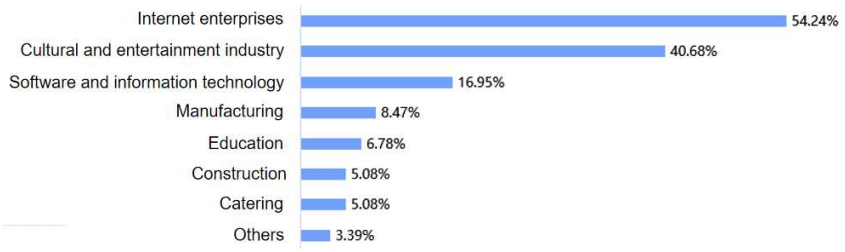

Figure 1. Distribution of industries involved

According to the survey, 52.54% of enterprises related to digital media technology are graphic visual design departments, 49.15% are animation production departments, 44.07% are film and television special effects design departments, product testing departments and software development departments are less involved in digital media technology-related majors, accounting for 22.03% and 20.34% respectively. Figure 2 shows this.

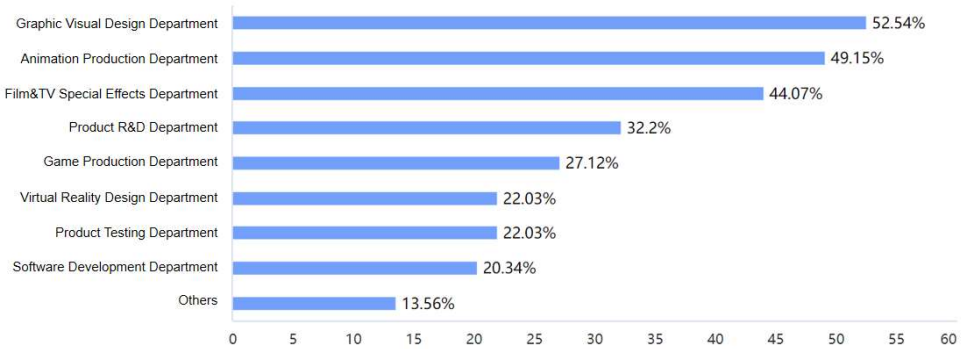

Figure 2. Distribution of relevant departments

ISSN: 2710-0723

Research shows that more than 70% of enterprises related to digital media technology in Zhejiang Province are in demand for animation production talents, game production talents, film and television production talents, graphic visual design talents, and virtual reality design talents, and the number of people in demand is 1-5. In addition, 15.25% of enterprises need 6-10 talents for film and television production, and 13.59% need more than 10 talents for animation production and game production, as shown in Table 1. Thus, enterprises have a huge potential demand for digital media technology professionals.

Table 1. Distribution of talent demand

Number of people / Talent type	1-5	6-10	> 10
Animation production talents	77.97%	8.47%	13.56%
Game production talents	79.66%	6.78%	13.56%
Film and television production talents	72.88%	15.25%	11.86%
Graphic visual design talents	79.66%	8.47%	11.86%
Virtual reality design talents	74.58%	15.25%	10.17%
others	77.97%	16.95%	5.08%

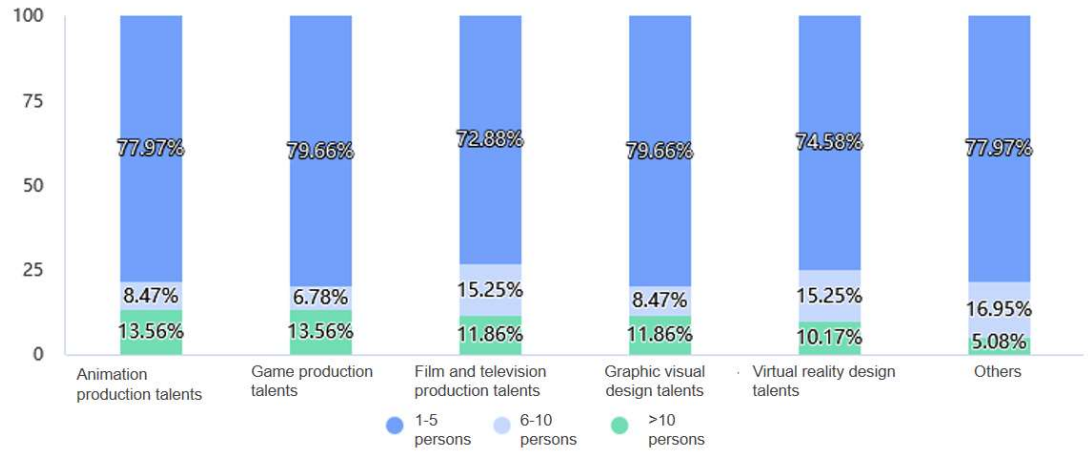

Figure 3. Distribution of talent demand

To sum up, the demands of enterprises related to digital media technology in Zhejiang Province for talents with secondary vocational education mainly focus on interface design post of graphic visual design, photography post of film and television production, film and television post editing post, etc. Enterprises' demand for talents with higher vocational and technical degrees mainly focuses on graphic visual design post, interactive design post, film and television

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production post editing post, film and television post special effects post. In general, the educational requirements of animation design positions in digital media technology-related enterprises in Zhejiang Province are mainly higher vocational colleges, and secondary vocational colleges can no longer meet the needs of enterprises. Therefore, it is imperative to cultivate talents for digital media technology majors.

According to the survey, digital media technology related enterprises think that the major problems of graduates in this major are not strong practical ability, not broad vision, not solid professional knowledge, accounting for 75.95%, 50.63% and 41.77% respectively. At the same time, about 30% of the enterprises think that the knowledge of digital media technology majors is narrow, accepted knowledge is more outdated. Colleges and universities should update professional teaching knowledge in time according to the development of digital media technology industry, strengthen practical teaching, focus on cultivating students' practical operation ability, and improve students' digital media technology skills.

Through this survey, it is found that enterprises generally have a great demand for digital media talents, and the requirements for professional education are constantly improving. Therefore, colleges and universities should increase the number of digital media professionals enrollment and training, and actively carry out integrated training of digital media majors, focusing on improving the educational level and professional level of talents, to meet the two-way demand of the market in the quantity and quality of digital media talents, and provide sufficient high-quality digital media talents for enterprises.

5. Post Ability Analysis

Based on the analysis of various survey data, enterprises have high requirements for the professional practical ability of digital media talents. Animation, film and television, design and other majors are professional and practical majors. Most enterprises believe that the practical operation ability of graduates needs to be improved. Lack of broad vision and lack of knowledge of digital media technology industry enterprises have become major problems for fresh graduates. Colleges and universities should focus on strengthening school-enterprise cooperation in digital media-related majors, actively expand school-enterprise cooperation channels in various forms, such as school-enterprise cooperation in school running, order training, practice in enterprises, on-the-job internship and so on, and strengthen practical training and teaching.

According to the survey data, the research team determined the occupational categories required for digital media major, including animation production, film and television production, graphic design, game production, and virtual reality. The employment positions of secondary and higher vocational schools were determined according to the occupational categories, and the vocational abilities were determined according to the employment positions, as shown in Table 2.

Table 2. Professional Ability Table

Main occupational categories	Jobs (secondary vocational)	Employment Position (Higher Vocational Education)
Animation production	Junior Animator Junior illustrator Cartoon Assistant	Animation Supervisor Senior commercial illustrator Cartoon Director

ISSN: 2710-0723

6. Determination of Curriculum System

Finally, the corresponding miter course system can be obtained according to the determined post ability. For example, the typical tasks of digital media technology major mainly include graphic photography, short video shooting, audio and video editing and other jobs. Secondary vocational students need to have the post-processing ability of photography, and vocational students need to have the ability of photography planning and conception on this basis. Thus, it is determined that the core courses of secondary vocational schools include "Graphics and Image Processing", the core course of higher vocational schools is "Nonlinear Editing", and the basic courses of secondary vocational schools are "Basic Photography and Camera Technology" and "Digital Image Technology", as shown in Table 3.

Table 3. Curriculum system

	Basic Course	Core Curriculum
Secondary Vocational	Basic Photography and Camera Technology Plane color composition Fundamentals of 2D Software Fundamentals of 3D Software	Graphic Image Processing Editing software technology Web page design and production Fundamentals of Plane Software Animation motion rules 3D modeling
Higher Vocational Education	Digital video production Audio-visual Language Fundamentals of Programming Original Animation Design 3D Animation Character Design Commercial 3D scene design All media marketing	Nonlinear editing Film and television special effects production Fundamentals of Interactive Software Animation pre design 3D model design All media operation

The position of digital media technology major is determined through data survey, the position ability is determined according to the position, and the professional curriculum system is determined according to the ability. In the school-enterprise cooperation, the major of notification will take students' digital skills, design aesthetic ability, innovation and creativity ability and teamwork ability as key abilities for training, so as to comprehensively improve the social adaptability of college talent training. Due to the deepening application of digital technology, animation, film and television, design and other related industries and enterprises have become an important field of digital media industry. Pictures, video and other media are playing a more and more important role in the economy and society, and related graphic design and production, video design and production have become important capabilities urgently needed by the market. Similarly, the preliminary data survey shows that enterprises generally value the courses related to graphic design and production and video design and production. Photoshop, 3D animation production, visual design, storyboard design, photography, video editing and other courses are very useful in practical work, accounting for more than one third of all courses. Colleges and universities should take the initiative to adapt to the market needs, develop graphic design and production, video design and production related courses, textbooks and teaching resources, improve the teaching content.

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