



Innovation Strategy of Animation Curriculum Systems Based on Artificial Intelligence

Qing-qing Wang^(✉)

Animation Art College, Jilin Animation Institute, No. 168, Boshi Road, High Tech Industrial Development Zone, Changchun, China
286769533@qq.com

Abstract. With the development of the Internet and the coming of the artificial intelligence era, new requirements are put forward for the cultivation of animation professionals and the innovation of curriculum systems. Although in recent years, the animation industry, especially the domestic animation industry, has emerged waves of upsurge, and the animation industry has ushered in a broad development prospect, the shortage of applied and high-level animation talents has gradually become a factor that can not be ignored, hindering the healthy development of China's animation industry. From how to cultivate animation talents needed by social development, and then refine to how to optimize the animation professional curriculum systems, has gradually become the focus of attention.

Keywords: Intelligence · Animation · Curriculum Systems · Innovation

1 Introduction

By the end of 2019, the box office of China's film market reached 64.27 billion, the number of screens in 10000 cinemas exceeded 70000, and the total number of screens ranked first in the world. According to the cat's eye data, the proportion of IP films such as animated films increased by 53.7%. China produced 51 animated films in the whole year. The domestic animated film "the devil of Nezha" with an income of nearly 5 billion yuan ranked the top at the box office in the whole year. With the rapid development of artificial intelligence and robot technology, it continues to promote the innovation of animation film creation form and production technology, and also puts forward better requirements for animation talents. As the cradle of Animation talent training, colleges and universities urgently need to change the talent training mode of animation specialty and optimize the Curriculum systems of animation specialty.

This paper brings artificial intelligence technology into the talent training of animation specialty, deeply excavates the educational concept of the integration of art and science and technology, integrates imparting knowledge, cultivating ability and improving quality, pays attention to the coordinated development of knowledge, ability and quality, and trains compound animation talents with high technical application ability, innovative spirit and innovative ability.

2 Research Status at Home and Abroad

In 2019, President Xi Jinping sent a congratulatory letter to the International Conference on artificial intelligence and education, pointing out that artificial intelligence was profoundly changing people's production, life and learning methods, and promotes the human society to usher in the intelligent era of human-machine cooperation, cross boundary integration and joint creation and sharing. With the increasingly wide application of artificial intelligence in the field of education, artificial intelligence will lead to a series of changes and innovations in education mode, teaching methods, teaching content, teachers and so on.

2.1 Research on the Influence of Artificial Intelligence on Talent Training Objectives

In 2017, Du Zhanyuan, Vice Minister of the Ministry of education, said that it was necessary to transform from improving students' information technology application ability to improving their information technology literacy. Therefore, to change the training objectives, we needed to cultivate students' critical, creative and practical abilities. Liu Yachao, co-founder of Tal, said at the 2007 ASU-GSV US education and technology summit that in the era of artificial intelligence, we should shift from the training of knowledge workers as tools for the training of innovative talents based on national creativity and innovation. Xiang Xianming (2017) pointed out in the task of artificial intelligence and future education that "human nature is king" was an important feature of future education. Shen Wei (2019) pointed out the tension between humanism and instrumental rationality: the value orientation and policy practices of international organizations of global education governance that education based on "humanistic spirit" was the characteristic of education in the intelligent age]. This required us to integrate the relevant literature and clarify which characteristics should be paid more attention to in the field of artificial intelligence.

2.2 Research on the Influence of Artificial Intelligence on Educational Content

In 2016, the document "preparing for the future of artificial intelligence" issued by the national science and Technology Council of the United States calls for strengthening the research on the impact on artificial intelligence on education. Guan Guofeng et al. (2017) pointed out in the research on Cultivation Mechanism of the innovation ability of interdisciplinary graduate students that under the background of artificial intelligence, interdisciplinary should be promoted to build a pattern of "artificial intelligence+X". Huang Jiahua (2017) pointed out in "poetry and distance of education in the age of artificial intelligence" that in the age of artificial intelligence, the breadth and depth of learning would be improved. These results provide the basis of our further research, and tell us that under the perspective of artificial intelligence, students are no longer required to memorize knowledge, recite knowledge and investigate knowledge, but there is still room for discussion on how to cross to integrate the education content.

2.3 Research on the Influence of Artificial Intelligence on Teachers' Role

With the “human-computer co teaching” becoming an educational norm, the role of teachers will change greatly. In 2015, Wu Xiaoru, CEO of iFLYTEK, wrote in “how does artificial intelligence changes education?” AI technology could be a teacher’s 50 pairs of eyes and ears, focusing on 50 students in the class. Yan Zhiming (2017) proposed that the emergence of educational artificial intelligence must arouse the attention on every educator in the connotation, key technology and application trend of educational artificial intelligence EAI. Yu Shengquan (2019) pointed out in his article “teachers should have the intelligence of “human-computer co teaching”, that knowledge-based teaching was mostly undertaken by artificial intelligence, and teachers are more about learning design, supervision, motivation, companionship and emotional communication with students. Through the literature, we could see that there was still a deep discussion on how artificial intelligence robots can play a role in education.

2.4 Research on the Influence of Artificial Intelligence on Art Majors

Wang Ping (2018) pointed out in the analysis of the relationship between artificial intelligence and the cultivation of visual communication design talents that the concept of “intelligence + designs” should be integrated into the teaching of visual communication design to meet the needs of Visual Communication Talents in the intelligent era. Hu Xiaochen (2019) pointed out in his article “Human Brain vs computer brain: Exploration of art and design talent training mode under the background of” cloud intelligence “, that art and design talents cultivated under the background of cloud intelligence needed to master the methods of using artificial intelligence, big data, cloud computing and even any intelligent design tools for future development to assist design and improve design efficiency. Pu Beilei (2019) pointed out in “analysis of the transformation of 3D modeling course under the background of artificial intelligence” that under the influence of artificial intelligence technology, 3D modeling course should make corresponding changes in the course itself, course resources and course team in order to cope with the development of the times.

From the current literature research, the influence of artificial intelligence on art major, especially the research on how to carry out talent training, what kind of talent training objectives and what kind of subject system to implement in animation major were very few. Therefore, this paper studied the construction of animation Curriculum systems from the perspective of artificial intelligence, actively explores new forms of intelligent education, promotes classroom teaching reform, and improves the quality of personnel training.

3 The Necessity of Optimizing the Curriculum Systems of Animation Major in the Era of Artificial Intelligence

According to the social demand for animation professionals, combined with the prospect of industry development, targeted education and training can effectively improve students’ comprehensive ability and promote students’ better development in the field of

animation. As an important position to transport professional and technical talents to the society, colleges and universities are the key to improve the quality of animation personnel training. Colleges and universities should keep up with the development of the times, combine with the new technology of artificial intelligence, constantly improve the Curriculum systems, improve the professional level of animation talents, and undertake the responsibility for transporting talents for the society. In the new era of Internet, many excellent animation softwares and intelligent tools are constantly emerging. Students need to learn to use these technical tools in order to process and innovate animation materials on this basis. To optimize the Curriculum systems of animation major, we should not only enable students to learn animation professional knowledge, but also cultivate and develop their creativity, encourage students to dare to use all kinds of new technologies and new means for innovation, so that students can quickly adapt to the needs of work after going out of school, so as to adapt to the needs of the development of the times. Therefore, in the process of personnel training, colleges and universities must comprehensively analysis the social development situation, clarify the social needs, optimize the Curriculum systems, make overall plans, and carry out targeted education and teaching according to the social needs for animation professionals and the development prospect of animation industry, so as to promote the better development of students in the field of animation.

4 The Existing Problems of Animation Curriculum Systems

4.1 The Curriculum the Effectiveness of Curriculum Systems and Talent Training Mode is Limited

The innovation of Curriculum systems is to prepare for the cultivation of animation talents needed by society in the new era. We can't separate the connection between Curriculum systems and talent training mode, and talk about how to reform the Curriculum systems alone. At present, there are two different modes in the process of personnel training: one is the relatively conservative or even backward "theory flow", that is, the Curriculum systems take basic knowledge and theoretical concepts as the focus of teaching, neglects to exercise students' practical ability, and dares not break through, afraid of problems due to innovation, dare not take responsibility, and lacks the sense of innovation. The other is the "practice flow" in which the Curriculum systems overemphasize the absorption and utilization of new technologies, new software and new tools. From the source, we do not understand the application principle and knowledge system of new technology and new tools, but only mechanically and repeatedly use software and tools, which is also one of the status quo. For example, visual communication courses, animation software courses and design theory courses in the Curriculum systems basically focus on either theory or technology, and the Curriculum systems cannot be effectively combined with the talent training mode.

4.2 The Orientation of Animation Curriculum Systems is not Clear

The existing Curriculum systems did not have in-depth analysis of animation major, nor further analysis of the market demand of regional animation industry. It only referred to

the national outline requirements for professional curriculum, but does not highlight its characteristics and the cultivation of professional ability according to the particularity of animation specialty. When colleges and universities carried out animation teaching according to the existing Curriculum systems, teachers' understanding of some animation teaching courses is not deep enough, and their positioning is not accurate enough. Some teachers regarded animation teaching as an integration of Internet technology and art design, while others only focused on the practical teaching of new software and new technology, which was all incorrect understanding. These would cause teachers to make unscientific teaching plan on animation course of the course teaching. There was a certain deviation between the teaching goal set for students and the goal of the new curriculum reforms implemented in the whole country, and the effect was not ideal. If the positioning was not clear, it would lead to the lack of students' personalized training, extensive involvement but not continuous improvement.

4.3 The Curriculum Systems of Animation Specialty Do not Match the Needs of Society

On the one hand, the graduates trained by the existing Curriculum systems were not recognized by animation related enterprises; on the other hand, when they were really employed, they also needed to accept the re learning and re education of new technologies. The existing Curriculum systems and practice of animation major were not perfect, and the guidance ability of the curriculum was not enough to enable students to be qualified and able to engage in future work, so as to meet the needs of society. The result was that animation companies couldn't find the competent and skilled animation professionals they want, and animation graduates trained by the existing Curriculum systems couldn't find suitable and professional jobs.

4.4 Animation Curriculum Systems Does not Pay Much Attention to the Cultivation of Cooperation Ability

In the animation project designs work of enterprises and companies, animation design projects needed many employees from different departments and different professional fields to complete a huge workload. Only a lot of high-end technical personnel works together to participate in the animation project, could we guarantee to complete the task of animation designs project on schedule. However, in Colleges and universities, teachers often ignore the teaching activities of team cooperation when giving lectures to students, resulting in the lack of students' actual cooperation ability, and the ability of mutual cooperation needs to be improved.

5 Innovation Strategy of Animation Curriculum Systems

5.1 Combining Technology with Animation Major Represented by Artificial Intelligence to Improve Curriculum Systems

Facing the impact on new technologies such as artificial intelligence on the whole fields of animation in the new era, it is imperative to reform the Curriculum systems of animation

major in Colleges and universities. On the one hand, teachers should combine curriculum design practice with artificial intelligence and other new technologies, so that students can understand the application of artificial intelligence in the field of animation, and can look forward to the future development trend. On the other hand, teachers should avoid technology only, and avoid students that are trained by the curriculum systems to become software tool accessories to innovative consciousness. Colleges and universities and teachers should strive to establish a complete Curriculum systems to impart knowledge from shallow to deep, so that the concept of consciously using artificial intelligence technology in animation creation practice can be rooted in students' minds.

In order to teach the basic knowledge of new technology represented by artificial intelligence, teachers can construct the Curriculum systems from two aspects of theory teaching and practical operation. For example, the theoretical course, represented by an introduction to artificial intelligence, mainly teaches a brief history of the development of artificial intelligence, the concept of artificial intelligence, the latest technology of artificial intelligence, etc. Through the study of the theory course, students should have an overall understanding of artificial intelligence technology and its application for the field of animation.

As for the practical course, represented by the application of artificial intelligence design tools, teachers can teach some simple splicing, combination and application of artificial intelligence modules, so that students can understand the basic operation mode of artificial intelligence technology, so that students can easily deal with the technical problems of artificial intelligence in the process of creating animation works in their future posts. By studying the practical course, students can understand the general operation principle of artificial intelligence technology, and combine it with animation to create some simple artificial intelligence programs.

5.2 Curriculum Systems Design of Animation Major from the Perspective of Artificial Intelligence

We should promote the “curriculum+integration” plans, reorganize the curriculum resources, and realize the curriculum sharing among different majors. Add intelligent animation, human-computer interaction animation, VR/AR design, comprehensive literacy, “entrepreneurship and innovation” education, philosophy consciousness and other courses. Highlight the core skills training as animation major, strengthen the curriculum construction of “professional innovation integration” and “professional technology integration”, and improve the practice education system. We should encourage the development of teaching materials that is accompanied by new technologies and new rules. The “mind course” which couldn't be replaced by “machine replacement” was set up to cultivate students' imagination, judgment, understanding and values, as well as the thinking ability of planning and designing the future.

5.3 Constructing the Practical Teaching Mode of Online/Offline School Enterprise Resource Sharing

Create a practical education mode based on studio form of “enterprise curriculum - realistic training - Project Teaching”. Colleges and enterprises jointly develop enrollment programs, jointly improve personnel training programs, and jointly formulate professional teaching standards, curriculum standards, post standards, and quality control standards. Joint development of integrated curriculum based on post tasks and enterprise professional Curriculum systems based on project construction process.

The education industry chain of “teaching → students → enterprises” is closely linked together. Students can learn the course online and offline. At the same time, according to the industrialization process and product quality standards, under the guidance of both schools and enterprises, students carry out post practice, and realize the seamless connection between graduates’ professional ability and employment.

- (1) Online teaching. The artificial intelligence and other high and new technologies are applied to the animation hybrid teaching. On line, the augmented reality technology is used to integrate high-quality teachers, teaching, training course content and other resources to carry out online AR deep immersion teaching. Teachers can organize teaching by themselves. Students can also learn online 24 h a day through AI virtual teachers. These online teaching methods enable students to study with a stronger sense of immersion and reality. At the same time, this teaching method will break the traditional idea of content-based animation education, the application of augmented reality hardware and software environment, so that students can fully simulate and interact, increase the practicality of teaching.
- (2) Offline teaching and industrial practice. In addition to teaching related courses offline, they pay more attention to the in-depth docking of learning and production with industrial companies. Students enter the animation platform and industrial companies for project-based practice, forming a closed loop of mutual promotion of teaching, so as to achieve the goal of “promoting production by learning and experiencing learning by production”, and continuously improve students’ professional practices ability.

6 Conclusions

The optimization and innovation of animation Curriculum systems need to consider all aspects of factors, which is a process of constant weighing and adjustment. By studying the optimization and innovation of animation Curriculum systems based on artificial intelligence technology, this paper analysed some existing problems of animation Curriculum systems in Colleges and universities, and puts forward the corresponding optimization scheme. This makes us clear that only by actively adapting to the new situation brought about by technological change and constantly improving and adjusting the Curriculum systems design, can we play a positive role in the future employment of college students, the development of animation major in Colleges and universities and the development of national animation industry.

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