

Research on the construction and reform of art design education from the perspective of the metaverse

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Abstract: The advent of the Internet era has led to the emergence of new science and technology and new cyberspace, and the metaverse, as a new cybervirtual space that is currently heating up rapidly, has received the attention and love of the general public. The emergence of the meta-universe has made new developments in related industries but also brought new challenges to them, the art design industry has a close relationship with the meta-universe, and the construction of virtual scenes and virtual characters in the meta-universe is inseparable from art design. Therefore, this paper will carry out relevant research on the construction and reform of art design education from the perspective of the metaverse.

1. Introduction

As the mobile Internet reaches its limit in the dimension of user use time, the metaverse, a new place with infinite space, appears in people's field of vision, and the metaverse expands the spatial dimension of the mobile Internet to make it more infinite, which can better meet the dimensional needs of users' use time. As the digital living soil of future human beings, the metaverse is quietly reshaping the economic system, social system and identity system of contemporary human beings, and under the diversified value system reconstructed by the metaverse, new consumption, new scenarios and new ecology have had a considerable impact on the current individual value and identity, causing people to think deeply.

2. Metaverse

The metaverse is a new virtual space based on Blockchain, Interactivity, Artificial Intelligence (AI), Computer Network Computing, Internet of Things and so on (as shown in Figure 1). Metaverse is a new concept with a strong sense of science and technology, a strong sense of the future, the characteristics of the metaverse cater to the current people's scientific and technological fantasy. In 1992 the concept of the metaverse (Metaverse) first appeared in the scene of Stephenson's science fiction novel "Snow Crash", with the virtual world built in the network to express its form, and then with the continuous launch of related movies, people have more imagination and application needs for the metaverse. Metaverse is a concept that represents diversity, multi-element, comprehensiveness,

and infinity. With the widespread appearance of the meta-universe in people's field of vision, the art design in the meta-universe has also become the focus of people's attention, through the design of virtual images, virtual scenes, etc. based on the meta-universe, to meet certain needs in human reality, from a psychological point of view to improve various human behaviors. So, for art design, the meta-universe provides more theoretical basis and power for art designers to develop [1].

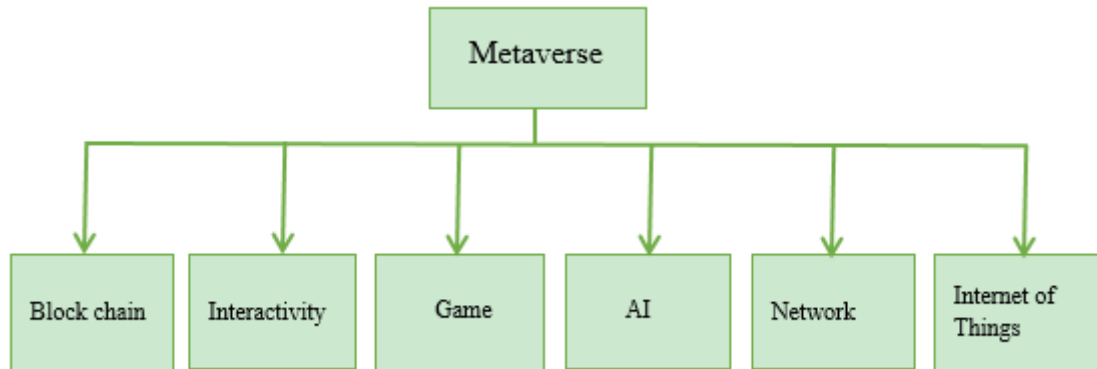


Figure 1: The main technical components of the metaverse

3. The New Development of Art Design from the Perspective of the Metaverse

In recent years, the emergence of new needs such as remote work, online education, and digital forums has brought new opportunities for the development of virtual reality technology. The continuous breakthroughs of key technologies such as 5G, AR, and VR also provide important technical support for the practical application of virtual reality technology. Virtual platforms such as Decentraland are also gradually emerging, and people can start real life in the metaverse world by planning and building relevant projects in the metaverse world. In addition to various virtual character forms in the meta-universe, architectural forms that imitate the real world are also endless, including meta-universe-style museums, virtual amusement parks, virtual exhibition centers, etc., so the related design demand continues to surge, providing space designers with new creative space and development prospects.

Design is one of the earliest practical activities of human beings, is a kind of completion process of creation activities, design can create material wealth and spiritual wealth, in the meta-universe perspective, art design is no longer traditional picture design, but based on, "brain-machine", "somatosensory sense", "sound", etc. to achieve interactive effect design, its design goal is also converted into the individual attention completely invested in a certain activity, through human biofeedback data, motion capture data, etc. to transmit people's spiritual consciousness and senses to the meta-space, Let people experience a different world of technology, the use of visual and auditory devices and gesture exploration devices in the meta-universe can enable people to effectively build the deep space scene of the "brain universe", and the VR interactive device developed based on motion capture will also become an important channel for people to enter the meta-universe. In the meta-universe era people from controlling the body to controlling the avatar, by constantly acquiring new virtual items to measure their own value, so as to rebuild their identity[2].

Virtual scenes are one of the important core contents of the metaverse, so many brands have purchased "virtual real estate" in the metaverse and designed and customized brand digital spaces. Whether in real life or in the world view of the meta-universe, people, money and scenes are the three elements that define the meta-universe. It is necessary to establish digital humans, universal digital currency, and buildings and spaces suitable for the meta-universe imagination space[3]. Therefore, the meta-universe will give future expectations, and people are beginning to look for professional

designers to personalize their meta-universe.

At present, most of the meta-universe design works contain multiple types, games, videos, paintings, music, etc., and even its forms of expression are more and more diverse, which can be "all-encompassing" through a work, allowing the designer's creativity to be displayed freely. The meta-universe brings a new stage for designers, so that designers no longer have design constraints and create freely, so the art design from the perspective of the meta-universe has diversified characteristics. At the same time, art design in the meta-universe has the characteristics of decentralization and non-fungification, and the art design in the meta-universe no longer allows art design to be fixed at a certain central point, but provides more design services, so that art design is scattered and it is constantly explored in all directions. In the characteristics of non-homogenization, diversified content and multi-angle and multi-dimensional art design direction make art design have more room for innovation, which can effectively reduce the occurrence of art design homogenization and make art design achieve higher quality development.

4. The Specific Path of Art Design Education Construction and Reform from the Perspective of the Metaverse

4.1. Change Teaching Ideas

First of all, update the teaching thinking. In the meta-universe perspective, the traditional teaching ideas can no longer well adapt to the current needs of art design education, and cannot effectively meet the talent training needs of related enterprises in the meta-universe perspective. Teachers need to be able to update their own teaching ideas, understand the relevant theoretical and practical design needs of the meta-universe in detail, and carry out relevant teaching reforms based on the needs of enterprises, so that art design education can be more contemporary and effective, so that students can better improve the employment rate in the future and have ability to design metaverse virtual scenes.

Second, change the design thinking. Traditional art design is a limited space design, will be affected by paper, smart device size, etc. have certain inherent requirements, designers need to be able to "converge" when unfolding the design. In the meta-universe, designers have unlimited design space, and related designs can be more multi-dimensional, multi-space, so in the meta-universe design, designers no longer need to "converge", but to be able to "expand", to be able to design more based on needs and spatial forms. To this end, teachers need to be able to change their own design education ideas in teaching, so that students' design ideas are no longer limited to the traditional design framework, so that they can have design ideas that are more suitable for the meta-universe, so that they can better design based on the relevant needs of the meta-universe, and further promote the continuous improvement of students' art design ability and design thinking.

Finally, if the traditional art design is only understood as a creation, compared with the current meta-universe design, it may be relatively simpler, such as graphic design, product design, etc. are the design of figurative objects. But for the meta-universe design, it emphasizes the overall design, the top-level design, the art design in the meta-universe can no longer be a single element design, but a comprehensive design, is the multiple design of the entire space[4]. To this end, teachers must be able to change teaching ideas so that students can have the awareness and ability of overall design and top-level design, so that they can obtain better design results.

4.2. Change the Teaching Mode

From the perspective of the meta-universe, the traditional teaching mode must be able to be reformed, and the use of new science and technology to better promote the good development of meta-universe art design, so that the teaching mode can be more in line with the current development

situation of the times and the needs of enterprise talents. Students can truly carry out good learning through art design teaching in the new era and improve the probability of employment. First of all, relevant art design colleges should be able to update their own hardware facilities, purchase relevant virtual interactive devices, such as VR equipment, and establish virtual teaching classrooms and virtual teaching platforms, so that students can personally experience the meta-universe and develop art design that meets the characteristics of the meta-universe.

Second, change the traditional teaching mode. From the perspective of enterprise needs, art design in the metaverse perspective should have a stronger sense of immersion, and can even reach the point of being false and real, so colleges should change the traditional teaching mode, and be able to educate with experiential, practical, project-driven, cooperative and other teaching modes as the core, so that students can not only become designers, but also become the experiencers of their own art design works, let them accurately judge the immersion of the works they design through their own experience, so as to ensure that the art design can meet the needs of relevant enterprises.

In addition, the active use of advanced technology should be carried out in teaching, art design in the meta-universe should be able to quickly provide a large number of high-quality digital content, the rapid change of the market makes related enterprises pay more attention to efficiency in art design, so when teaching art design, relevant colleges need to pay attention to cultivating students' active use of new technology, so that students can complete art design works more efficiently in the development of related designs, to meet the needs of enterprise creation efficiency. Such as the use of AIGC for text creation, graphic design, Audio production and other generation aids are available to effectively help students complete such work more efficiently and improve the effect of design works, as shown in Figure 2.

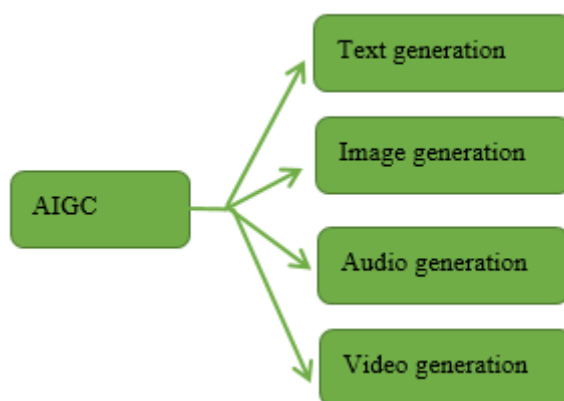


Figure 2: AIGC generation function

4.3. Carry Out Comprehensive Teaching

Art design in the metaverse is a way of presenting beyond the visual, including user experience, psychology, branding, marketing, physical and virtual interaction, etc., there is no obvious boundary between art design majors and other majors. Colleges should be employment-oriented, motivate students to form interdisciplinary design thinking, and grow into designers who connect the metaverse across borders. In the specific construction and reform of art design education, colleges should break the barriers between majors, carry out integrated art design education, organize multi-professional and multidisciplinary teachers to discuss art design education from the perspective of the metaverse, formulate corresponding integrated education plans, and can carry out targeted auxiliary subject settings for students' different design directions, so that art design education in the metaverse perspective is no longer an independent major, but a comprehensive major, which can be

interdisciplinary. Finally, students can get comprehensive development, so that they can better meet the needs of talents related to art design from the perspective of the metaverse.

Secondly, colleges should be able to establish a communication platform for students, which can allow relevant enterprises, institutions, students and other parties to carry out active communication and exchanges, expand scientific research, employment and other channels. In this way, innovation and breakthroughs in cutting-edge technologies can be achieved in the research and development of key core technologies, and advanced awareness can be achieved in the education of art and design talents, the integration innovation and application practice of metaverse-related scenarios can be accelerated, and art and design education in colleges and universities can be more forward-looking and effective. In the virtual metaverse, there is no so-called boundary in the world, so relevant institutions need to cultivate hybrid talents with cross-cultural literacy and interdisciplinary thinking, so that students can focus on cultivating core competitiveness, not be influenced by technology, proficient in the use and mastery of digital technology, and have a new understanding and learning of digital technology from a new perspective.

4.4. Cultivate a Sense of Innovation

Design is a basic force of people, the design unfolded through imagination is the core of design, the basis of imagination has an important impact on design, traditional design is from the perspective and concept of real space to expand the imagination, its design imagination will be limited due to the design screen actual display equipment and technology, but in the meta-universe, design is no longer limited to the shape and size of the solid-state, so imagination needs to be upgraded [5]. Students can expand new imagination, continuous innovation. Innovation is the most essential feature of design, so from the perspective of the metaverse, colleges should pay attention to the cultivation of students' innovation awareness, and better improve students' innovation ability through classroom teaching and project practice, so that they can effectively meet the relevant art design talent training requirements.

First of all, teachers can better cultivate students' sense of innovation through relevant innovative competitions, such as product design competitions, game design competitions, etc., which can stipulate that their designs can be diversified designs as long as they are not separated from the theme, and do not require design forms, design sizes, design dimensions, etc., so that students can have greater space for innovation, so that they can better diverge their thinking and expand their imagination. In addition, it can also be combined with psychology, branding, marketing, user experience and other contents to carry out comprehensive competitions, through the complete project to enable students to continuously learn and improve, so that they can have more innovative directions, cultivate innovative awareness, and can let them develop the overall design to become excellent comprehensive talents.

Secondly, teachers can use classroom teaching to let students carry out the cultivation of innovative awareness, in teaching teachers should not only be able to improve students' design ability, but also guide students to carry out multi-party thinking, to start from the behavior and needs of the audience to carry out the creation of digital goods, to participate in the construction of the virtual world. At the same time, teachers should innovate possible application scenarios, so that innovation not only occurs in the present, but also in the future, through their own innovative design so that digital goods have new development prospects and application space. Thus, inspiring the infinite possibilities of digital design in the metaverse.

4.5. Rely on Cultural Advantages

Metaverse design and construction require good content design, Chinese history and culture are broad and profound, how to combine its own Eastern culture, excavating content and elements related

to the metaverse is particularly important. The meta-universe provides new energy for art design, so that art design has a new development scene, relying on high-quality content can make the art design in the meta-universe have its nutrients, in order to develop a good overall design, so in addition to the scientific field, high-quality design content based on cultural literacy is the perspective of art design education from the perspective of the meta-universe needs to focus on.

In the actual education, relevant colleges need to make a connection between China's culture and the metaverse, which is to combine China's excellent traditional oriental culture with the innovative design of the virtual world, forming a new four-in-one system of metaverse knowledge, theory, practice and evaluation in education, and carry out modern art design education with Chinese characteristics, so that the art design from the perspective of the metaverse can have more connotation and nourishment through the good application of Chinese culture. In addition, while promoting art design with the help of Chinese culture, it is also necessary to have critical thinking from the perspective of the metaverse, reflect on the art design education from the perspective of the metaverse, and continuously promote the reform and further improvement of art design education and teaching, so that art design education can summarize educational experience and promote the long-term development of design education and the art design industry.

5. Conclusions

Overall, from the perspective of the metaverse, art design education needs to be able to carry out effective reforms, so that its own education models, methods, ideas, etc. can be updated, which can meet the employment needs of students and the needs of enterprise talent training, so that students can have a good sense of innovation and continuously improve the quality of their art design works, so that they can get better development.

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