Intelligent Conception and Development Path of "Education Meta Universe"

Yongliang Liu
Anhui Art College, hefei China;
Silpakorn University, Bangkok Thailand
115544646@qq.com

Abstract. "Education meta universe" is an intelligent education integrating multiple technologies and an upgrade of educational informatization. Through the "education meta universe" platform, we can achieve multi scene teaching, diverse interaction and 10000 people online at the same time, so as to achieve education fairness and knowledge sharing. "Education meta universe" can strengthen the construction of education and teaching resources and innovative application research through online and offline integrated teaching methods; Improve the construction and research of smart campus, smart classroom and smart classroom through the construction of new educational infrastructure; Through the joint construction between urban and rural areas and schools and the sharing of high-quality digital resources, we can cultivate and build a high-quality, professional and innovative teaching team. Through the design of the virtual scene of the education meta universe, the educational participants can construct virtual identities in the meta universe education, so as to realize the symbiosis of digital twins and virtual reality.

Keywords: Education meta universe; Intelligence; Virtual reality; Digital twin

Metaverse is a virtual world based on Internet technology. Human instinctively believe in virtual narration and story construction. The study of the meta universe includes all aspects of our lives, such as: the meta universe and video games, the meta universe and digital communities, the meta universe and post-human culture, the meta universe and science and technology ethics, the meta universe and science fiction, and so on. Naturally, it will also include the meta universe and modern education. In the research process of "education meta universe", some schools have carried out research on virtual laboratories and realized online virtual teaching. These include the digital transformation of teaching materials, the setting of teachers' virtual images, and the formation of virtual teaching classrooms. There has been a shift from big data to small data in the operation of data. At present, intelligent education has paid attention to the latest blockchain technology, relying on blockchain technology to record the whole learning process of students. Through the exploration and research of the "education meta universe", not only can the relationship among education, art, technology, life, aesthetics, thinking and other aspects be structured, but more importantly, the research of the "education meta universe" can provide various development paths and possibilities for the development of modern education, so as to improve the quality of teaching and students.

1. Understanding the "Educational Metaverse"

First of all, through the understanding of the concept of "meta universe", this paper expounds the understanding of "education meta universe". In the study of meta universe narrative, we should first understand the concepts of "meta", "universe" and "meta universe". "Yuan" means "beginning", which is the origin and essence of the world. Generally speaking, the universe is the sum of human cognition of the real world. It is a world with unique material structure and independent space-time structure. 1992 Neil Stephenson first mentioned the meta universe in his science fiction avalanche, which is a virtual cyberpunk world. Subsequently, with the development of digital technology, the concept of meta universe was applied to the electronic industry, game industry, social platform, virtual currency and virtual community. On October 28, 2021, Zach, founder of Facebook in the United States Berg changed the company's name to "meta" and took the meta universe as the core
of the company's future development. Metaverse has become a hot topic for people to talk about and the focus of commercial investment. "Since 2021, meta universe research has appeared again and is in a gushing state. There are 99 documents in total, including 17 core documents. In only half a month in 2022, there were 13 documents, including 11 core documents."[1] 2021 is called "the first year of the meta universe century". It is generally believed that "meta universe" refers to the parallel world coexisting with the real world, and "meta universe" is not another physical universe existing outside the real world. With the help of digital technology and artificial intelligence technology, "metauniverse" achieves the effect of virtual simulation through modern equipment such as intelligent headphones, VR eyes and brain computer interfaces. Our consciousness is transmitted to the "meta universe" world of a virtual world. Human beings can choose their own images in the metacosmic world, experience wonderful stories that can not happen in the real world, and obtain strange experiences that can not be obtained in the real world. "Education meta universe" is to understand the development of modern education from the perspective of "meta universe", which is actually the process of promoting the informatization and intelligence of modern education. "Edu metaverse can be understood as the educational application of the meta universe. It creates digital identities for teachers, students, managers and other stakeholders, develops formal and informal teaching places in the virtual world, and allows teachers and students to interact in virtual teaching places."[2]"Education meta universe" pays attention to the intelligent, virtual and digital development of education, which provides a brand-new way of thinking and development path for the development of modern basic education. On the one hand, it is necessary to strengthen the research on the basic thinking logic of "education meta universe" and study various possibilities of the development of "education meta universe". In the process of research, based on modern national education, and based on the phenomenon of digital virtual technology in modern development, we further explore the exploration of education mode in the perspective of meta universe. On the other hand, it studies a series of problems such as technology, interaction, communication, creation, cognition and labor creation in the education of the meta universe, and then completes the thinking logic and technical system of the education system of the "education meta universe".

Secondly, establish the consciousness of "educational metaverse", and then construct the teaching model and development path of "educational metaverse". In the development of the "educational meta-universe", it is necessary to construct the underlying logic of the meta-universe, so as to form new knowledge production, so as to change the idea, liberate the mind, and update the thinking. With the development of modern information technology and digital network technology, the concept of the metaverse has penetrated into all aspects of modern life, including e-commerce, digital labor, digital navigation, medical diagnosis and treatment, cloning technology, military technology and so on. The arrival of the metaverse world has changed the way of human thinking, behavior and aesthetics. The metaverse liberates our imagination of the future. Space and time become infinite, and the virtual and the real interact and merge. "The grafting function of the metaverse in the virtual world and the real world is the ultimate digital medium that integrates and merges all current and future digital technologies. It will realize the connection revolution between the real world and the virtual world, and then become a new world beyond the real world and a higher dimension."[3]

Through the research and exploration of the "educational metauniverse" to find a feasible development path, so as to promote the "educational metauniverse" can be smoothly launched. In the traditional teaching model, all the teachers or schools are thinking about achieving the teaching goals within the existing time and space. In the development of education, from word-of-mouth and hand-held professors to the later classroom teaching system in schools, the efficiency of learning has been greatly improved. How to develop the students' wisdom in the process of understanding the world and constructing the world, develop the students' concept world, and become the core accomplishment of the development of students' wisdom, which is the task of our modern education. In particular, the transmission of knowledge by people and electronic equipment and systems makes it more efficient. So that in the future -- the era of "educational metauniverse", can we imagine an
era where there will be more brain-computer interfaces to replace the transmission and learning of knowledge, so as to realize the construction of knowledge or the formation of ideas? "Educational metaverse" integrates virtual reality technology, artificial intelligence technology, blockchain technology, level 5 technology, cloud computing, etc., to provide a virtual and real learning environment for learners. People can learn about the world, improve their skills, connect their minds, and create new things through a high degree of engagement, rehearsal, imagination, and creativity in an immersive learning environment. "Educational metaverse" integrates a person's learning state, life state, entertainment state and creation state, so as to stimulate the infinite imagination and infinite creation of human beings in an omnipresent, ubiquitous and omnipotent parallel universe space.

Third, the "educational metaverse" should follow the goal of education. First of all, the "educational metaverse" can develop our educational system to construct a conceptual system and inherit the world of ideas. What can the "educational metaverse" do to help us understand the world? Secondly, it can help us to better master the skills system, so as to change the real world, especially in vocational education, labor ability and other aspects has its unique value. Through the practice of sharing high-quality digital resources, we can build high-quality, professional and innovative teachers. Thirdly, the application and promotion of "educational metaverse" can help our learners better cultivate their thinking system, including creative thinking, problem solving ability and critical thinking, so as to enable them to better create the unknown world.

2. The Intelligent Conception of "Educational Metaverse"

First, the media and intelligent development of the "educational metaverse". The metaverse is a combination built on the basis of digital interconnection, which fully integrates some relationships among people, people and society, people and nature, and people and technology. The medium property of the metaverse is a formalized expression of connectionism. Connectivism focuses on studying how the human brain works and applies it to the analysis of artificial intelligence. The relationship between various media, such as between man and the tools of labor, through which man strengthens his body and skills. Labor tools in different times have their own uniqueness. When human intelligence reaches a certain level, it may be possible to master certain technologies. At this time, a kind of availability is formed between human cognition and behavior through the connection of media. Gibson, an American eco-psychoologist, believes that the social environment, including the daily life influenced by technology/media, may affect the behavior of organisms. Human behavior interacts with technological media, that is, "the possibilities that technological objects can provide for action." [4] It can be seen that the "educational metaverse" should develop intelligently with the help of the continuous progress of science and technology, and carry out our brand-new educational process in the virtual metaverse world, so that educators can get the metaverse education brought by technological media.

The "educational metaverse" should develop intelligently in the integration of various technologies. Human intelligent behavior is gradually developed and perfected by the assumption of physical symbol system. "A.newell, H.A.Simon and others proposed the following symbolic model to simulate the human brain, that is, the physical symbolic system hypothesis." [5] In the development of artificial intelligence, it borrows knowledge driven, data driven and combines the integration and development of algorithms, computing power and other technologies to form a powerful artificial intelligence technology. The integration and development of these new technologies in the "educational metaverse" can expand our thinking and renew our concepts. For example, in the development of a course, we can borrow the network APP system, and teachers and students can log in through digital authentication, and make virtual roles and virtual classes for students to have online classes. At the same time, the use of modern scientific and technological equipment to restore the real scene, to form a simulation classroom. Such a teaching process requires the integration and connection of a variety of technologies to form. In teaching, we should
also use network technology to strengthen various connections in the network for innovative education. George Simons (Siemens) believes that "human learning activity is to create an external network of nodes, so as to form a source of information and knowledge." So connectionism aims to better connect people, society, technology and nature, which is to cultivate people's intelligent process in social practice. The purpose of education is to make people intelligent and intelligent, which is also the essence of education. Therefore, the metaverse of the fusion of reality and virtuality promotes the wider and three-dimensional connection of the whole world. The educational metaverse pursues the depth, breadth, and three-dimensional connection, which also conforms to the logic of human cognition of the world.

Second, "educational meta-universe" can construct the framework world of educational intelligentization. The metaverse transfers human social relations from offline to online and from real life to virtual life. The metaverse has its unique construction value, through which the concept world based on reality can be extended. The metaverse can help the educated construct the concept world and form new values and ideas at the same time. We can not only use the metaverse to strengthen the existing concept, but also can change the existing concept. Therefore, augmented reality, assisted concept construction, and improved cognitive efficiency have become the way of metaverse concept construction. In fact, the process of concept construction is a continuous way to correct the original concept, and the concept construction of the metaverse will have unique advantages over the real world. In modern education, students can use learning apps to check in, upload files, punch in homework, leave messages, evaluate, grade and make statistics. With the development of The Times, many of us have learned to learn in the virtual environment, this virtual learning environment breaks the traditional method of learning in the real environment, but also improves the efficiency of learning.

The construction of the framework world of "educational metauniverse" will further improve the education system with the progress of science and technology. In the process of improving the education system, we should first pay attention to the integration of various new technologies. On one hand, this convergence of new technologies is the mastery of new media products. In the past, we have gradually mastered the operation of computers and mobile phones, and then we may have to master VR technology, virtual screen, sound mixing and cutting, cloud technology, database technology and other technologies. It is necessary to master not only the hardware operation of these tools but also the application of auxiliary software of these tools. On the other hand, it is necessary to form the knowledge system and the world framework of the "educational meta-universe". In THE "EDUCATIONAL META-universe", the learning state, life state, entertainment state and creation state are integrated to construct a virtual "educational META-universe" world. This includes not only the teaching model, the learning method, the innovation method, but also the unknown field opened up by the metaverse. This unknown field may be coupled by a variety of technologies to generate new educational ideas and teaching methods, which also makes the original educational ideas updated in the knowledge framework of the "educational metaverse".

Third, immersive experience and intelligent development of "educational metaverse". Immersive experiences are essential for brain development. The traditional perception of education is that humans can learn more with their eyes, ears and hands. Immersion in the brain's cognition brings a unique experience. The metaverse's expansion of human sensory experience will greatly enhance human thinking. Immersion enhances the interest of learning by stimulating brain cells to bring about a unique cognitive experience. The immersive experience of "educational metaverse" is both interesting and meaningful. The experience of immersion is unique in enhancing students' enjoyment. In addition, "educational metaverse" can enrich the perceptual dimension of social life, thus increasing the extension of perception. "The body is the medium of existence in the world, and to have a body is for an organism to intervene in a confirmed environment, to participate in some plan or to remain in it." It is through the extension of human perception that human intelligence is expanded. The quality and structure derived from perception encourages people to connect more...
widely with external information. When the link is more extensive, such experience will have a broader and far-reaching impact on the development and development of wisdom. It will surpass the media experience brought to people by any previous media form, thus promoting the development and evolution of the brain. Immersive viewing changes the way learners observe themselves. In the process of immersive experience and interactive learning, learners complete their self-value judgment in social life, so as to realize the co-affective knowledge between educators and technical media, and also sew up the original goals set by educational administrators and teachers. The immersive experience in the "educational metaverse" needs to be studied and explored by brain scientists, neurophysiologists and technologists. It involves knowledge of the cognitive science of the brain. The use of educational equipment and educational environment can not only achieve immersive emotional identity, but also achieve the purpose of spiritual experience. "Spiritual experience is a kind of experience mode based on value inspiration, belief appeal and identity construction, [8]"we in yuan in the education of the universe by the spirit of the immersive experience in order to develop a variety of thematic education, let the educates to form a kind of spiritual beliefs, so as to truly implement the intelligent of the education, and this is also the purpose of modern education.

Fourth, the creation and development of the "educational metaverse" in space and time. The essence of education is not only an inherited concept world, but also a creative world. The meta-universe of the digital twin world is more like a piece of white paper, which can bring a vast and infinite world. It can nourish the creative impulse of human beings, enhance interactive experience and enhance operational skills. The boundless creative platform and practical experience can promote more imaginative innovative practice. Therefore, the creation of the world from the "educational metaverse" is of greater significance.

The concept of time and space in the metaverse includes: the world of creation, the world of cognition, the world of interaction, and the world of labor. The metaverse world is a world of creation. This virtual world parallel to the real world, it is heterogeneous and exists. In the virtual metaverse, the human body becomes the virtual body without the body, the media body, the information body. In the virtual world, the virtual food becomes more real. As Baudrillard said, "simulacra and simulation things have replaced the real and original things because of large-scale classification, and the world has become simulacra". [9]In the "Educational Metaverse", we should not only create virtual characters, but also create scenes, plots and teaching modes. At the same time, the world of the metaverse is a world of cognition. "Meta-universe" with the help of digital technology, artificial intelligence technology, smart headset, VR eyes, brain computer interface and other modern equipment, so that we can recognize the world with simulative simulation effect. These new technologies need our in-depth research. In the process of meta-universe teaching, there will be some new problems, which need to be solved gradually. The metaverse world creates an interaction between the virtual and the real. Human consciousness can be transmitted to the virtual "metaverse" world, where people can choose their own image, experience wonderful stories that are impossible in the real world, and gain knowledge and experience that are impossible in the real world. At the same time, education in the meta-universe is a world of labor and practice, which changes the means of production and the mode of production of workers. For educators, the manual labor in the past can be changed through intelligent information education with the help of new technology, and the productive forces can be liberated even by means such as virtual twin and intelligent learning partner.

3. Exploration of the Intelligent Path of "Education Meta Universe"

First, technology fusion promotes the fusion of virtual reality. "The meta universe of education can never be simply understood as the functional value of virtual reality interactive technology to education. It also exposes the limitations and the necessity of reform of the current mixed teaching mode based on the binary opposition between virtual and reality, online and offline." [10]Metaverse
especially needs the superposition of technologies, which must not be a single technology, including artificial intelligence technology, big data technology, cloud computing technology, 5g technology, and the combination of other technologies. The superposition of these technologies will promote the evolution of the meta universe, with 5g technology and cloud computing as the basis of computing power; Expand the brain computer interface of reality and robot as the basis of virtual real interface; As the authentication mechanism, blockchain also has other production mechanisms such as artificial intelligence and digital twinning, which constitute the technical foundation of the meta universe. The "education meta universe" relies on the meta universe itself, which is the embodiment of the meta universe in the education system. In the early "education meta universe", the basic construction of the meta universe is mainly taken as the starting point, such as the construction of virtual laboratories, virtual study and virtual offices. Including static presentation to dynamic expression. Improve the experience, presence and authenticity of the classroom through virtual classroom.

Second, intelligent transformation and allocation of resources and coordinated development. Application scenarios drive the digitalization and intelligent transformation of educational resources, and the focus of intelligent development is the empowerment of the meta universe. "Artificial intelligence technology is the fundamental technology of the wisdom of everything in the education meta universe, which enables teachers, students and objects in the education meta universe to have social communication, cooperative participation, adaptive learning and other functions."[11]In the process of intelligentizing modern teaching conditions, on the one hand, we should strengthen the improvement of intelligent language synthesis technology and recognition technology, and form technical support such as language family system, multilingual mutual translation, key information capture, and intelligent information filtering; On the other hand, improve the functions of the visual recognition intelligent system. Through image recognition and intelligent algorithms, the functions of target recognition, dynamic tracking and data statistics can be realized. If we help students to build a conceptual world or an ideological world, we must carry out necessary digital and intelligent transformation of traditional educational resources. Therefore, the subject knowledge atlas is timely transferred to the virtual meta universe world space. In this process, a static knowledge map can be transferred to the metacosmic world by formulating the knowledge map of the discipline. Based on the coordination between the teaching and research meta universe and the teaching meta universe, until the whole education system is transferred to the meta universe. With such resource transformation, it will be conducive to the next step of the study of "education meta universe". The intelligent transformation of traditional resources mainly includes moving traditional teaching and teaching materials to information-based teaching and further developing intelligent teaching. Intelligent teaching and education meta universe are further integrated, so that traditional education builds an accurate mapping in the meta universe, thus guiding students to have a twin object in the meta universe, and promoting large-scale teaching according to their aptitude. It is a great project to transfer human knowledge to the meta universe and then develop harmoniously. The learning of "education metauniverse" can be used to predict teaching effects, track teaching element research, and scientifically verify the brain mechanism of learning metauniverse to promote human cognitive development; moreover, cognitive nerve itself is an important physiological representation tool of virtual avatar, which can be used to study the process of promoting human development through technical means. "[12]

Third, focus on the scene creation and development of education. By building a knowledge navigation and learner model, we can make a navigator in the virtual meta universe to guide our learning. We call it an intelligent learning partner. Intelligent partners can act as students' navigators in various forms of avatars, intelligent people and robots. Intelligent partners can accurately understand students' information, master students' digital portraits, and accurately bring students to a virtual learning system, including learning objectives, learning processes and learning results. The construction of the dynamic meta universe and the creation scene of artificial intelligence are important contents of the development of the "educational meta universe", which requires a large
number of teachers and Internet companies to join the system of the educational meta universe. "The virtual and real integration of the education meta universe has unique advantages in creating teaching situations, enriching classroom interaction, innovating teaching resources, implementing accurate evaluation, and stimulating learning initiative. It has great potential in teaching scenarios such as situational teaching, personalized learning, game learning, and teacher training."[13] Through the construction of the virtual teacher and educator model, the intelligent learning system and the intelligent learning management system are completed, so as to realize the situational creation of the "education meta universe".

Digital twins and digital mapping construction. Teaching in the virtual world can be perceived in the real world, and learning in the virtual world and the real world are interrelated. This requires both blockchain technology and our management system in the real world. The real scene generates digital twins and mappings in the virtual world. "Digital twins also provide a resource pattern for the integration of virtual and real education, supporting the integration of twins in the cloud, remote and around."[14] Design a product in the meta universe, and you can get the product in real life, so as to achieve digital twins. The structural data of education is based on the authentication system in the blockchain, which can ensure that students' learning behavior and results are twinned in reality and virtual. In the metacosmic learning environment, learners can use their "virtual avatars" to form digital twins with themselves in the real world, and "digital identity" can participate in learning activities based on digital tokens. Teachers and students, digital resources and even academic qualifications in the real world and the virtual world can recognize each other. Students' learning in virtual reality integration is based on the teaching resources in the virtual network environment to meet everyone's self-study. "Education meta universe" provides learning materials and learning management system based on students' learning skills and learning plans, and becomes a place for students to learn, practice, communicate and communicate. Students' practice and homework can be improved in the evaluation of virtual teaching system, so as to improve their cognition and skills. It is the pursuit goal of all educators to share and build together. Virtual schools and physical schools are twins, which will become the development form of our schools in the future.

4. Conclusion

In the understanding of "education meta universe", the key is to change the traditional thinking and recognize the basic concept and connotation of "education meta universe" from the perspective of cognition and thinking logic. In the process of information and digital development of modern education, carry out intelligent transformation, configuration and collaborative development of resources, and explore the feasible path of modern education development. In the development of "education meta universe", attention should be paid to the integration of technology to promote the integration of virtual reality. Focus on the scene creation and development of education, digital twins and digital mapping construction. By strengthening the study of virtual reality images, digital simulation art, digital design display, digital communication and other educational phenomena, and applying them to practice. Through the teaching experiment of the meta universe, the high-quality sharing of teaching resources and the development of teaching models in the "education meta universe" are realized. Through the design of virtual scene, the educational participants can construct their identity in the meta universe education, so as to create a practical case of creating digital twins and virtual reality symbiosis.

In the process of intelligent development of education, "education meta universe" is a brand-new proposition. We should not only pay attention to the path exploration at the technical level, but also pay attention to improving the innovation mechanism of intelligent education and creating a good intelligent education ecology. At the same time, "education meta universe" has also brought factors that affect the development of education. First, in terms of educational resources, online education in the meta universe will not only bring democracy to education. At the same time, if certain hardware and software are needed to support an educational environment, it will also bring about
the problem of uneven distribution of educational resources; Second, when the technical ability of educational participants is not balanced, it may cause the problem of educational unfairness. In the process of teaching, it may cause differences in students' educational experience, which may lead to differences in learning experience. Third, the impact of the change in the path and mode of knowledge and experience dissemination on traditional education experience, and the demand for high-quality, professional and innovative teachers may all be factors affecting the development difference of the "education meta universe".

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