

Reform of Sports Health Supermarket Based on AR Technology

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ABSTRACT. *With the progress of virtual reality technology and the advancement of teaching information, the application of virtual reality technology in college physical education is bound to become a trend. At present, AR technology is the most advanced technology in virtual reality imaging, and its application in education is no longer fresh. Due to the strong theoretical nature and special teaching methods, the “immersion” virtual classroom and AR teaching material form under the application of virtual reality technology will break the existing college physical education teaching form, teaching material system and classroom teaching mode, and also affect the traditional physical education teaching inheritance mode. virtual reality + teaching mode gradually changes the education system. The change of virtual reality, a new medium of educational technology, it will bring new mode to the teaching form of sports health supermarket*

KEYWORDS: *Sports health supermarket, AR technology*

1. Introduction

With the model reform of Physical Education -- the first product of the integration and information in class in China -- the birth of sports health supermarket, virtual reality technology and augmented reality technology came into being. In the sports health supermarket, VR and AR technology are causing the upsurge in the field of education. In addition to VR technology and AR technology, MR technology is also gradually valued. In fact, no matter VR technology, AR technology or MR technology, they all experience the virtual world in a transcendent way. At present, although MR technology is still in the initial stage of technology research and development, it is not very mature, but it is considered to be a more powerful frontier technology to realize virtual world than VR and AR technology, because the essence of this technology is based on the next generation transport platform and mobile terminal equipment. Obviously, the development of VR, AR and MR technology will affect the application of virtual technology in various fields. The future application model will not only be as simple as virtual Glasses + virtual environment.

2. Augmented Reality Technology

Augmented reality (AR) is the abbreviation of augmented reality, which is a new technology developed on the basis of VR. It is a technology to enhance the perception of the real world through the computer system. It is a technology to add the virtual object, scene or system prompt information constructed by computer to the real scene, so as to realize the enhancement of reality. AR system structure is mainly composed of virtual scene generating unit, head display tracking device and interactive device. Virtual scene modeling and rendering constitute the part of virtual scene generation unit: the integration of virtual scene and real world mainly depends on the tracking and display of the head: interactive devices complete the information transfer and operation of augmented reality effect. It is understood that the most popular application of augmented reality is the Japanese Nintendo game “pokemongo”. People can find virtual objects in real world pictures, and realize the strange experience of combining virtual and real. The technology is also used in smartphone applications. The GPS of smart phone plays an important role in position tracking, accelerometer and angle sensor. With the function of camera, the augmented reality function of smart phone is realized. Mobile phone mobile phone can also run augmented reality on ordinary smart phones, such as Alipay's AR live action and advanced mobile phone game with advanced technology. It requires real-time and virtual two environment objects to be stacked in the same space by using cameras and sensors. So far, the application of AR technology has become a part of the daily mobile device application to help the management of physical education in and out of class, especially in the teaching fields of traditional sports such as Taiji, swimming, campus dance, etc[1].

3. Application of AR Fusion in Sports Health Supermarket

3.1 Virtual Reality Immersed in Physical Health Course

With the development of immersive virtual reality technology, with the help of audio-visual equipment, learners can achieve and approach the effect of real learning in the virtual learning environment. The application of immersive virtual reality technology in the field of education and teaching can not only achieve the fantasy learning experience of “walking in the stars”, but also To experience the learning pleasure of “swimming in the deep sea”, China is the first country to invest virtual reality in the classroom, and is awarded the title of China's VR education. The teaching of high-precision technology such as medicine, aerospace and so on has been integrated with immersive virtual reality technology to form a complete application system, while the teaching of sports leading city competitive sports training is different from other disciplines, and the integration mode with immersive virtual reality technology is also different from other disciplines. Physical training is a comprehensive medicine, physics, psychology, management and other disciplines [2]. Whether training or teaching content, methods and means must follow five factors of competitive ability: physical ability, skills, tactical ability, psychological ability and intellectual ability. In order to realize immersive virtual reality technology teaching in the field of physical education, the training teaching must take five factors that affect the competitive ability as the core, integrate the terminal, application system and operation platform, build a near real learning environment, create a one-to-one teaching mode for learners who can actively accept and focus their attention, and obtain a one-to-one teaching mode. At present, virtual environment construction of virtual reality technology can not only realize simple 3D simulation or real simulation scene, but also realize “virtual reality”, “3D reality” and “360 degree”, “720 degree” panoramic environment. The particularity of sports virtual environment determines the particularity of its construction. Different movements need different virtual scenes and effects [3]. The realization of virtual reality immersion course in physical education needs to improve the “immersion” classroom form according to the characteristics of physical education, and combine AR and MR technology to make the teaching classroom form more colorful. In the future, virtual reality technology will popularize all college students' classes [4].

3.2 Application of Teaching Material System: AR Teaching Material

All the things carried by virtual reality technology are virtual, and AR technology can stack virtual things and real things together. With the realization of AR technology, various ar reading materials and carriers continue to appear, which makes the “book” carrier add a new definition, and the realization of air reading is not far away. Through AR technology, 3D, video and other multimedia forms are presented on various media books, pictures and mobile terminals. Great changes have taken place in the traditional form of reading. The original fixed words and pictures become “alive” and more vividly show the “dynamic” content. The college physical education textbook is a combination of theory and practice, describing the practice methods and training plans to help readers master various technologies [5]. In the traditional teaching materials, the description of technical action usually uses words and pictures. However, no matter how vivid pictures are used, they can not show all-round technical action, which is only limited to the form of decomposition action. With the help of AR technology, 2D or 3D animation video and other multimedia forms, complete technical actions are displayed on the corresponding teaching knowledge points, The original boring theoretical knowledge points and plane picture teaching materials are transformed into intelligent and advanced three-dimensional teaching scenes to make the display of technical points more vivid and intuitive, which is conducive to stimulating students' enthusiasm and initiative in learning, effectively remembering and understanding key and difficult points, and improving teaching efficiency and quality. Ar teaching materials for sports are composed of mobile phones, plane teaching materials and other camera terminal equipment, which carry the teaching content of video, 2D and 3D animation production [6].

3.3 Change the Form of Extracurricular Teaching of Physical Health

In the era of more and more developed information technology, the traditional learning mode of theoretical knowledge of physical education classroom teaching can not meet the needs of physical education, especially the introduction of AR, VR, Mr and other virtual reality technology, with the advantages of simulation, openness, beyond time and space, operability and so on, has opened up a new “virtual teaching” city for digital information teaching mode, using “virtual” Teaching can not only save the tense situation on the spot, but also make the boring classroom teaching lively and interesting, so as to avoid the influence of the weather on the teaching, especially those courses that need a strong sense of space and a specific environment, such as swimming courses,

are the basic theoretical knowledge of teaching, which can also become more clear and concise^[7]. And those mobile terminal devices will not hinder teaching, but become auxiliary teaching equipment, play its due role. Virtual teaching course environment strengthens the interaction between teachers and students, even if the distance can be successfully completed, it is not affected by space and time. The construction of virtual teaching mode is not only the improvement of virtual equipment, but also the refinement of teaching content. No matter in the production of video or animation multimedia materials, educational content is different from entertainment items, and the description of details is particularly important. The production process is also very complex, it needs to write a large number of materials according to the link of teaching design, and make excellent multimedia software to connect with the virtual environment. The theoretical knowledge and practical application of technology and tactics in physical education courses, especially in special sports, are the same. Using virtual reality to present the theory and application of technology and tactics can help teachers to complete teaching, not limited by space and time, and get better results in the display of technical details [8].

4. Conclusion

In the future, the application of virtual reality technology in sports health supermarket will be more extensive in different project teaching, and the application threshold will be lower. At present, the production cost of vr virtual reality is still high, mainly reflected in the production cost of VR glasses and virtual environment. With more and more people using virtual reality products, its cost and price will be more and more accepted by the public. At the same time, the construction and development of Education Virtual Platform has led to the new application development trend in the field of virtual reality and multimedia. In recent years, the impact of the blowout development of virtual reality technology on the physical extracurricular exercise education city is far greater than that of the MOOCS in that year. Its impact is not only the change of teaching form, but also the change of the whole education system, especially the change of education resources. It is not difficult to introduce virtual reality technology into education. However, in this trend, Sports health manager need to think about which can be used and which can not be used. In the future, more and more virtual reality education products will be produced. This new means of educational technology is the future development trend of educational technology. Not only will it stagnate in the theoretical stage. virtual reality education is not a dream, the form of virtual reality of Sports health supermarket+ will surely present a more wonderful page.

Acknowledgement

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