APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN INHERITANCE OF TRADITIONAL ETHNIC SPORTS CULTURE AND REFLECTIONS

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Abstract: With the coming of digital age, artificial intelligence (AI) is facilitating spreading of traditional ethnic sports culture through its unique technological advantages and it improves the spreading validity, intensity and breadth of traditional ethnic sports culture continuously. In this study, applications of virtual reality (VR), deep learning and accurate delivery to spreading of traditional ethnic sports culture were analyzed thoroughly. Moreover, reflections on application of AI to inheritance of traditional ethnic sports culture were proposed. Research conclusions provide some references to promote creative transformation and innovative development of traditional ethnic sports culture.

Keywords: Artificial intelligence, Inheritance, Traditional ethnic sports culture

1 INTRODUCTION

Culture is the soul of a country and a nation. Traditional ethnic sports culture is not only the continuity and storage of sports activities of each group, but also the rare sports cultural heritage that the history left for us. It reflects national psychology and national spirit thoroughly. Driven by new theories and new technologies, artificial intelligence (AI) technology is developing rapidly, which facilitated the innovative spreading of traditional ethnic sports culture. How to use AI to realize perfect integration of core value content and technological elements and promote inheritance and innovation of traditional ethnic sports culture as well as how to exhibit traditional Chinese culture and spreading the voice of China accurately to the whole world is a research topic that has to be solved urgently in the new era.

2 AI PROMOTES INNOVATIVE SPREADING OF TRADITIONAL ETHNIC SPORTS CULTURE

2.1 Enriching manifestations and improving spreading validity

AI technology integrates core value content and modern aesthetic elements and gives strong vitality of traditional ethnic sports culture. Image recognition, voice recognition and intelligent terminals APP in
the background of big data have been widely applied in various fields of social life. AI is conducive to realize extension and expansion of human intelligence through computer technologies. Digital and image recording assure continuity of traditional ethnic sports culture. Augmented reality (AR) technology and intelligent robot assure continuity of traditional ethnic sports culture elements which have great inheritance difficulty, endangering and complicated program. For instance, AR technology is used to restore the manufacturing scene of dragon boat and intelligent robot is used to dragon and lion dances. Traditional ethnic sports culture serves as the research carrier and material carrier. AI provides a new technological support to the great renaissance of Chinese culture. With the high-tech development, AI can integrate traditional ethnic sports culture unconsciously into education and life of people in abundant manifestation forms, thus improving the spreading validity of traditional ethnic sports culture.

2.2 Optimizing user experiences and increasing spreading intensity

Targeted at physical and psychological needs and emotional desire, traditional ethnic sports are flourishing based on traditional festivals and show unique regional cultural spirits. Traditional ethnic sports culture can create many virtual scenes by integrating modern high-tech interaction and perception demands of audiences can be satisfied and immersive cultural experience is beneficial to strengthen recognition and understanding of traditional ethnic sports culture. For example, scenes of traditional festivals including Dragon Boat Festival were displayed by virtual digital scenes, through which audiences could appreciate vivid art scenes of Dragon Boat Race by touching the screen. The strong immersive experiences help audience strolling in cultural scene of the history and feel the artistic charm of traditional ethnic sports culture truly, which improve spreading intensity of traditional ethnic sports culture.

2.3 Extending time space and expand spreading breadth

With the national economic development and progress in human civilization, the essence of local traditional ethnic sports cultures can be highlighted highly through AI technologies. AI can easily communicate with audiences who have different languages in different countries and dialects through translation technology and voice recognition technology, break trans-language, trans-regional and trans-cultural spreading barriers, and promote traditional ethnic sports culture to the world. Some traditional ethnic sports activities have aesthetics and super-technologies, such as national bodybuilding exercises, dragon and lion dance, sparkler-grabbing, pearl ball, etc. Tourism areas can be interpreted to tourists from different countries through communication in different languages by using AI technology. As a result, traditional ethnic sports culture is promoted to more people and spread to the whole world.

3 APPLICATIONS OF AI IN SPREADING OF TRADITIONAL ETHNIC SPORTS CULTURE

3.1 Virtual reality (VR) technology
Traditional ethnic sports culture has a profound foundation. It is mainly manifested in traditional Chinese festivals and involves extensive contents. With rapid technological development and increasing cultural demands of the public in recent years, AI technology which is represented by VR begins to be applied in restoration of traditional festival scenes and gives vitality of traditional festivals again. AI changes the traditional mode which is centered at exhibition and assisted by introduction, which is conducive to understand demands for profound connotations. A completely virtual traditional festival atmosphere can be created through VR technology. By wearing professional equipments, tourists can get virtual perceptions in various aspects, including, vision, hearing, touching, and so on. Such immersive experiences help tourists to get close to real traditional cultures, enhance interactive communication, and strengthen understanding on traditional culture.

Different from VR technology, AR technology is to integrate virtual information into the real world through a computer, bind projection devices, real environment and virtual world into a space or a scene, and strengthen visual effect through combination of reality and virtual scenes. The structure of AR system is shown in Fig.1. Take the waving dance which is a traditional ethnics sport of a minority in Enshizhou, Hubei Province for example. The real environment and virtual images are integrated into the same space-time by using AR technology during the dance. Tourists can intuitively appreciate the whole evolution process of folk custom of Tujia Nationality on site. Such AR technology can break space-time limitations and helps tourists to get a comprehensive understanding on changes of traditional ethnics sports history and culture and to strengthen large-scaled spreading and promotion of local cultures of traditional Chinese sports activities.

![Fig 1. structure of AR system](image)

3.2 Deep learning technology

Deep learning technology refers to self-learning of machines by using learning ability of AI and automatic recognition of texts, images and voice data. For example, neural network (NN) is a machine learning technology that can realize AI by simulating human brain (Fig.2). Mass media is a mean to spread ethnics culture and promote spirits of Chinese cultures extensively. The AI technologies represented by “deep learning technology” inject the elements of age to traditional culture continuously.
and interpret profound connotations of traditional ethnic sports culture through forms that the young group likes, including songs, dance, movie works, etc. How to learn traditional martial arts of China based on AI robot to give a coat of aging over the profound connotation of traditional culture not only can motivate interests of the contemporary youth in deep exploration of traditional culture and promote its integrated development with modern society, but also can realize inheritance and innovation of traditional culture.

Fig 2. Simulation diagram of neutral network (NN)

3.3 Accurate pushing technology

Accurate pushing technology is to recommend accurate and interested contents to audiences according to hobby analysis based on a new media platform. The structural model of an accurate pushing technology is shown in Fig.3. Firstly, the accurate pushing technology in new media APP can collect audience information using big data technology. Subsequently, it makes an accurate pre-judgment on the cultural interests of audiences by using AI technology to analyze using habits of audiences and formulate individualized spreading strategy. The accurate pushing technology achieves unification of pushing contents and demands of audiences, and increases accuracy and validity in spreading traditional cultures. By combining the big data algorithm and artificial independent selection technology, the accurate pushing technology can recommend traditional culture which is related with interested elements of audience in APP at the appropriate time, thus promoting spreading of traditional culture. For instance, users who browse contents of traditional sports shows for a long time have concentrated demands of traditional culture and APP can recommend contents about sports culture (e.g. martial arts, Taiji and traditional dance) to users, which improves influences of traditional culture unconsciously.
4 REFLECTION ON DEEP INTEGRATION OF AI AND TRADITIONAL ETHNICS CULTURE

4.1 Promoting inheritance and innovation of traditional ethnic sports culture by making full use of AI

Using AI does not mean to abandon traditional inheritance and innovative methods. Instead, integration of AI with traditional inheritance and innovative methods will broaden a space to explore and develop depth of Chinese cultures. AI can serve for inheritance and innovation of traditional ethnic sports culture better as long as mastering its dynamic development laws and finding the point for its integration with traditional culture. Inheritance of traditional ethnic sports culture becomes more systematic and innovative by updating of AI.

4.2 Exploring education mode of traditional ethnic sports culture based on reasonable using of AI

Talent competition and education competition are cores of international competition nowadays. Optimizing teaching content and teaching mode are prerequisites to realize high-quality development of traditional ethnics physical education (PE). AI application provides sufficient high-quality education resources for education classes of traditional ethnic sports culture in the new age and it can facilitate reform of cultural education mode through reasonable using of AI. Based on AI technology and data, teachers can understand characteristics and demands of students more meticulously and accurately and make real-time interaction with students. For example, the holographic imaging technology helps students to perceive virtual scenes of traditional ethnic sports through three-dimensional imaging. Assisted by the immersive teaching mode, AI is applied to education field and facilitates creative development of traditional cultural education effectively.
4.3 Realizing precise development of cultural inheritance based on AI

The public demands of culture are collected extensively and analyzed individually by using AI and big data technologies, which are conducive to inheritance of traditional ethnic sports culture. The cultural modules that people have browsed and concerned will be reported completely to the big database with traces. Based on intelligent algorithms like memory, storage, computing and analysis, data carriers are transmitted to the decision layer which will formulate relevant strategies to promote traditional ethnic sports in accordance to individual demands. The platform updates strategies everyday at appropriate time according to user demands. For instance, searching and pushing accurate information based on Baidu help more people with potential demands to understand and gain relevant cultural information.

4.4 Promoting interactive and integrated development of AI and traditional ethnic sports culture

Regular theoretical learning and skill training of AI for the public welfare to the group with high carrier frequency of AI shall be conducted to improve ability of citizens in using AI and realize harmonious man-machine interaction. According to data of traditional ethnic sports culture which is collected and stored by AI, it can not only adjust the relevant inheritance scheme, but also develop cultural industries appropriate for demands of different groups and form an industrial chain with high integration of AI and traditional ethnic sports culture based on strong cooperation of government and cultural institutions with AI enterprises. It is suggested to implant traditional ethnic sports culture into online games or develop tourism cultural products which integrate digital creativity and traditional ethnic sports culture. Moreover, it is recommended to create a new path of “AI+ traditional ethnic sports culture” and form a scaled cultural industry through different cultural forms.

4.5 Perfect the green supervision system of AI

Increasing professional quality of AI users is the ideological guarantee to make positive effect of AI. Together with reduction of technological bugs of AI and conforming of cultural products with AI embedding to the socialist core values, increasing professional quality of AI users assures the green ecological linking between AI and traditional ethnic sports culture. This is of important significance to realize sustainable inheritance of traditional ethnic sports culture.

5 CONCLUSIONS

Traditional ethnic sports culture is an organic combination of traditional Chinese cultures. Its unique manifestation forms, profound national spirits and souls form a treasury of traditional ethnics sports culture of China. Integration of AI and inheritance of traditional ethnic sports culture plays an important role in power construction based on socialism and sports and it lays a solid foundation to construct a country with a strong socialist culture.

REFERENCES


