The Application of Artificial Intelligence in the Dissemination of Yellow River Culture: Taking the Research Project as an Example

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Abstract: This article aims to integrate artificial intelligence technology with Yellow River culture communication, facilitating the modernization transformation and widespread dissemination of Yellow River culture. With the rapid development of artificial intelligence technology, its combination with different fields has become a development trend, which provides new possibilities for the spread of Yellow River culture. By focusing on research projects, this study compares traditional research projects with AI-based research projects in the field of Yellow River culture through literature research and questionnaires. Traditional research projects primarily rely on field visits and historical-cultural lectures for knowledge transmission, but they lack interaction, interest, innovation, and personalization. In contrast, AI-driven Yellow River cultural research projects employ artificial intelligence technology along with diverse learning methods and realistic experiences to provide students with more profound, comprehensive, and effective research experiences. This innovative combination not only injects new vitality into the preservation and innovation of Yellow River culture, but also enhances its prominence in contemporary society. Through the exploration of artificial intelligence and research projects, this study offers novel ideas and directions for disseminating and innovating the research approach towards Yellow River culture.

Keywords: Yellow River Culture; Artificial Intelligence; Research Project; Dissemination and Inheritance

1. Introduction

The Yellow River, one of the mother rivers of China, has been bearing the development of civilization and the historical inheritance of the Chinese nation since ancient times. Its rich and diverse cultural heritage has had a profound impact on the thinking, behavior, and lifestyle of the Chinese people. The Yellow River Basin has nurtured many important ancient civilizations, such as Chinese civilization, Longmen culture, and Yangshao culture. These cultural heritages are not only an integral part of Chinese culture but also treasures in the world's cultural treasure house.In September 2019, General Secretary Xi JinPing delivered an important speech at the Forum on ecological protection and high-quality Development of the Yellow River Basin, emphasizing that "it is necessary to promote the systematic protection of the cultural heritage of the Yellow River and deeply explore the era value contained in the Yellow River culture".[1] In this context, the inheritance of the Yellow River culture is particularly important and urgent. As the cultural foundation and spiritual symbol of the Chinese nation, the protection and inheritance of the Yellow River culture is not only related to our respect and memory of history, but also to the construction of cultural self-confidence and the promotion of national spirit.

However, with the changing times and the development of society, the Yellow River culture is facing new challenges and opportunities [2]. The traditional method of cultural inheritance is confronted with problems such as the rapid dissemination of information and a decline in the audience for traditional culture. It is urgent to stimulate people's interest and love for traditional culture through innovative approaches. Fortunately, challenges often coexist with opportunities. In the context of globalization and cultural diversity, the Yellow River culture has also ushered in new opportunities for development.

On the one hand, with the country's high attention and strong support for cultural undertakings, the protection and inheritance of the Yellow River culture has received more policy support and capital investment. On the other hand, with the increasing understanding and respect for cultural diversity, the unique value and charm of the Yellow River culture have gradually been recognized and appreciated by more people. [3]

In order to seize these opportunities, we need to take a series of measures to promote the inheritance and innovation of the Yellow River culture. At present, there are many institutions and teams to explore the Yellow River culture research project. However, the existing research projects on the Yellow River culture have several shortcomings: lack of relevance, lack of in-depth exploration, lack of interaction, difficulty in evaluation, and lack of innovation [4], among others. Therefore, to achieve high-quality development of the Yellow River cultural research project, this project proposes a brand-new scheme - combining artificial intelligence to promote the development of Yellow River cultural research [5]. By utilizing advanced AI technology, adopting diverse learning methods, and creating immersive and realistic experiences, we aim to provide students with a more profound, comprehensive, and efficient research experience. This innovative combination not only injects new vitality into the inheritance of the Yellow River culture but also allows it to shine with dazzling brilliance on the modern stage of society and promote its continuous development.

2. The Necessity and Feasibility of Artificial Intelligence Application in Yellow River Culture

2.1 The Yellow River Cultural Research Project Needs New Vitality Injection and Inheritance

To gain a deep understanding of the specific situation of the Yellow River cultural research project, we have designed a questionnaire to collect participants' knowledge, opinions, and suggestions about this project. It was found that most participants mentioned the following issues with the existing Yellow River cultural research project, and we have conducted a detailed analysis of them.

(1) Lack of relevance: The content of the traditional Yellow River cultural research project is quite general, and there is no personalized design for students of different ages and interests. This causes many students to feel that the content is too broad during their participation, making it difficult for them to find the aspects that truly interest them, thus affecting their engagement and learning outcomes.

(2) Experience is not deep enough: due to the limited time and resources of research projects, many traditional research projects on the Yellow River culture can only stay on the surface, making it difficult for students to deeply understand and experience the profound connotation of the Yellow River culture. Students often only know a little about it, but can't really appreciate the charm and value of the Yellow River culture, which greatly reduces the significance of the research project.

(3) Lack of interaction: In the traditional Yellow River cultural research projects, teachers or tutors are usually the leading factors, and students are more in a passive position. This model limits the opportunities for students to explore independently, and lacks interactivity and sense of participation. It is difficult for students to give full play to their subjective initiative and form effective cooperation and discussion, which affects their learning effect and research experience.

(4) The evaluation is difficult: for the evaluation of students' learning effectiveness and the value of research projects, traditional Yellow River cultural research projects often lack effective evaluation mechanisms and standards. This makes it difficult to objectively and comprehensively evaluate students' learning achievements and accurately measure the actual effect of research projects. This not only affects students' learning motivation, but also limits the further development and improvement of research projects.

To sum up, the Yellow River cultural research project does face many challenges in the process of inheritance and development. The lack of pertinence, the lack of in-depth experience, the lack of interaction, and the difficulty of evaluation restrict the effect and influence of the project. In order to inject new vitality and promote the effective inheritance of the Yellow River culture, we urgently need

to improve and innovate on these issues.

2.2 Development of Existing Artificial Intelligence Technology

The existing artificial intelligence technology has made remarkable progress and has gradually become an important trend of global scientific and technological development [6]. Through deep learning, machine learning and other algorithms, artificial intelligence system can process and analyze massive data, simulate human thinking and decision-making process, and realize automatic and intelligent task execution. In the fields of finance, medical care and transportation, the application of artificial intelligence technology has made a series of breakthroughs, such as intelligent customer service, intelligent investment, intelligent diagnosis and treatment, and automatic driving [7]. These applications not only improve work efficiency, but also bring people a more convenient and efficient life experience. At the same time, artificial intelligence technology continues to innovate and progress, and more fields will benefit from the development of artificial intelligence technology in the future. It can be said that artificial intelligence has become an indispensable part of modern society, and its development prospect is broad, which will create a better future for mankind. Therefore, it has become a development trend to combine artificial intelligence to expand the spread of the Yellow River culture.

2.3 The Combination of the Two Complements Each Other

Firstly, the dissemination and preservation of the Yellow River culture should be expanded and deepened due to its significant historical background and extensive cultural significance for the Chinese nation. The emergence of artificial intelligence technology offers new opportunities and methods for promoting this communication and inheritance process. By utilizing artificial intelligence technology, we can conduct thorough exploration and precise analysis of the cultural resources associated with the Yellow River. This will enable us to present the essence of Yellow River culture in a more vivid manner, thereby enhancing public awareness and interest in this rich heritage.

Secondly, artificial intelligence technology has the potential to enhance both the quality and effectiveness of educational initiatives focused on studying Yellow River culture. [8] Through its application, personalized learning paths can be created along with customized teaching programs that cater to individual students' unique needs and characteristics. Consequently, students will gain a deeper understanding of Yellow River culture through these tailored approaches. Additionally, real-time monitoring facilitated by artificial intelligence allows teachers to promptly identify any issues during research processes or adjust their teaching strategies accordingly, ultimately improving overall educational outcomes. Such intelligent improvement not only makes up for the lack of relevance of traditional research projects, but also greatly improves students' learning experience and effectiveness, making the research project on Yellow River culture more in line with the development trend of modern education.

Furthermore, artificial intelligence technology can significantly enrich interaction experiences within projects centered around researching Yellow River culture. Utilizing virtual reality (VR), augmented reality (AR), as well as other technical advancements enables us to create immersive research environments where students can fully immerse themselves in exploring the captivating aspects of Yellow River culture firsthand. Moreover, intelligent interactions provided by AI systems offer real-time question-and-answer sessions along with feedback mechanisms that further enhance students' learning experience and interest.

This research method, combined with artificial intelligence technology, not only addresses the shortcomings of traditional research projects in terms of real experience but also enables students to gain a deep understanding of the essence of the Yellow River culture through interactive and exploratory teaching methods.

Furthermore, artificial intelligence technology can improve the efficiency and accuracy of evaluating the Yellow River cultural research project. By analyzing and mining big data, we can scientifically evaluate and provide feedback on the implementation of research projects, as well as provide data support for project improvement and optimization. This advantage effectively compensates for the lack of a scientific evaluation mechanism in traditional research projects, ensuring that the

Yellow River cultural research projects can continuously adapt to the needs of the times and achieve high-quality development.

3. Exploration of Promoting AI Yellow River Cultural Research Project

3.1 Changing the Thinking Mode of Traditional Research Projects

Currently, most of the available research projects on the traditional Yellow River culture in the market focus mainly on field trips and lectures about its history and culture. However, these projects tend to prioritize one-way knowledge transfer and overlook interactivity, interest, innovation, and personalized experiences.

Our newly launched small program platform revolutionizes the conventional approach to research projects by transforming it from a simple output mode into a highly interactive learning experience. This innovative platform not only offers intelligent learning recommendations but also enables real-time tracking and in-depth analysis of students' learning progress and difficulties. It accurately provides personalized learning resources and suggestions based on individual needs. Moreover, with the assistance of advanced AI technology, students can engage in real-time interactive Q&A sessions through the small program platform to simulate actual teaching scenarios for better understanding and mastery of knowledge.

3.2 Adjusting the Learning Methods of Traditional Research Projects

The content covered in traditional Yellow River cultural research projects is often too extensive for students to find aspects that genuinely pique their interest. Consequently, this affects their overall learning effectiveness and experience negatively. To address this issue comprehensively, our project takes into account diverse learning styles and interests through our small program platform. By utilizing virtual reality technology, students can immerse themselves in the breathtaking scenery of the Yellow River while experiencing its unique cultural charm firsthand. Additionally, we have incorporated game-based learning methods that allow students to acquire knowledge about Yellow River culture within a relaxed yet engaging atmosphere through well-designed tasks and challenges.

Simultaneously considering each student's individuality and needs allows for personalized study plans tailored specifically for them. By empowering students to choose their own learning path based on their interests, pace, and progress levels ensures maximum learning effectiveness. This student-centered approach not only boosts engagement and interactivity during learning but also enables each student to discover personal interests throughout their research journey while exploring further depths within Yellow River culture.

3.3 Enhance the Real Experience of Traditional Research Projects

Due to time and resource constraints, traditional research projects on the Yellow River culture often only scratch the surface, making it challenging for students to fully grasp the profound meaning of this cultural heritage. Students typically acquire superficial knowledge without truly experiencing the unique allure and value of the Yellow River culture, thereby diminishing the practical significance of these research endeavors. However, by leveraging advanced virtual reality technology, this project offers students an immersive journey into the world of Yellow River culture. Through 3D printing technology, precious cultural artifacts from this era are presented in a three-dimensional format, allowing students to gain a more intuitive understanding of their structure and design.[9] Additionally, with VR technology, students can seemingly transcend time and space as they actively participate in historical events and deeply appreciate the distinctive charm of Yellow River culture.[10]

This highly realistic experience not only significantly enhances students' retention of information about Yellow River culture but also fosters a deeper comprehension and emotional connection with it. The objective of this project is to overcome the limitations associated with traditional research projects by enabling students to genuinely delve into the essence of Yellow River culture and appreciate its profound allure.

4. Conclusion

With the rapid development of artificial

intelligence technology, the dissemination of the Yellow River culture has embraced unprecedented new opportunities. This study, in line with contemporary trends, focuses on research projects as a starting point and leverages the robust support of AI technology to forge an innovative platform for the dissemination and learning of the Yellow River culture. We have moved beyond the constraints of traditional research projects' one-way output, embracing a more dynamic and interactive communication style, thus rendering learning more vivid and engaging. Simultaneously, we have adapted the learning methods of traditional research projects, introducing diversified and personalized learning programs tailored to meet the needs of diverse learners. Notably, the utilization of cutting-edge technologies like 3D and VR has significantly enhanced the immersive experience of the research project, enabling learners to intimately encounter the singular charm of the Yellow River culture. This groundbreaking approach not only breathes new life into the inheritance of the Yellow River culture but also offers learners an unparalleled learning experience.

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