

# The Construction of Digital Aesthetic Education Curriculum Resources of Intangible Cultural Heritage in Western Hunan

Xiaoyu Zhang<sup>\*1</sup>, Zurong Song<sup>2</sup>, Guoyong Wang<sup>3</sup>

email address<sup>\*1</sup>: 23883774@qq.com, email address<sup>2</sup>: 2478745932@qq.com  
email address<sup>3</sup>: wangguoyong9293@dingtalk.com

Huaihua Normal College, Huaihua City, Hunan Province, China

**Abstract.** The advent of the era of big data provides new possibilities for the digital protection, inheritance and utilization of intangible cultural heritage. As a multi-ethnic inhabited area, western Hunan has rich intangible cultural heritage resources, such as Tujia brocade, Miao silver ornaments, Miao songs and dances, etc. However, with the acceleration of the modernization process, these precious intangible cultural heritages are faced with difficulties such as weak inheritance and audience loss. Smart digitization provides a new model for the protection and inheritance of intangible cultural heritage, becoming an important part of current cultural construction<sup>1</sup>. Therefore, this study aims to explore the development and inheritance path of digital aesthetic education curriculum of western Hunan heritage under the background of big data, in order to promote the inheritance and innovation of intangible cultural heritage in western Hunan.

**Keywords:** Smart digitization, Digital Aesthetic Education Curriculum Resources, Inheritance and protection of Xiangxi intangible cultural heritage

## 1 Introduction

Intangible cultural heritage is a precious traditional cultural resource, and the western Hunan region is extremely rich. According to statistics, 16 categories of national intangible cultural heritage are distributed in western Hunan, involving more than 3200 items of heritage list. However, western Hunan has been lagging behind in terms of inheritance and development, and even at the risk of being lost. A good cultural atmosphere can provide fertile soil for the inheritance of intangible cultural heritage. People recognize this culture, understand its cultural value and connotation, and realize the importance of protecting intangible cultural heritage, so as to build a good atmosphere for intangible cultural heritage protection<sup>1</sup>.

How to inherit and protect it is imminent. As early as in 1992, the United Nations education, scientific and cultural organizations to start the "world memory" (Memory of the World) project, early mainly in literature, music, images and other digital acquisition worldwide important cultural heritage (including a large number of intangible cultural heritage content), established for online retrieval website and database, and in text, pictures, recording, publications and other form of diversified display and spread<sup>[1]</sup>. Intangible cultural heritage also carries Chinese traditional cultural beliefs and inherits historical culture in a variety of ways, carries the historical culture with diversity and flexible development as a long-term

development system of Chinese civilization. "It can reflect the value of national tradition, cultural value and aesthetic value. The protection and inheritance of intangible cultural heritage are inherent spiritual needs of human beings." [2]Based on the background of big data, the paper thinks about how to establish a digital aesthetic education curriculum resource platform, so as to satisfy students to learn intangible cultural heritage in western Hunan online, help teachers better use big data resources and modern technology to expand the knowledge of aesthetic education, so as to deepen the protection of intangible cultural heritage in western Hunan.

## **2 Concept definition of intangible cultural heritage digital aesthetic education curriculum**

### **2.1 Digitalization of cultural heritage**

In the national cultural heritage of digital "digital cultural heritage" is defined as "the digital collection, digital storage, digital processing, digital display, digital transmission of digital technology to cultural heritage transformation, reproduction, recovery can be Shared, renewable digital form, and read with a new perspective, preserved in a new way, to take advantage of new needs" [3]In the future, the domestic digitalization problem of intangible cultural heritage was expanded and extended on this basis. The digitalization of cultural heritage is the protection of the important national cultural resources by means of modern information technology. It appears with the rapid development of big data and the Internet in contemporary society. It can not only record and protect the important culture on the verge of being lost, but also spread to all corners of the world through the Internet.

### **2.2 Digital aesthetic education courses of intangible Cultural Heritage**

The development and design of digital curriculum belongs to one of the important categories of educational technology, which is to better disseminate teaching content through modern teaching means. "Samuel Bowers (Samuel Bowles) and Herbert Matisse (Herbert Gintis) believe that "curriculum is cultural reproduction", and digital curriculum is also a cultural product in digital form" [4]. As a complex knowledge system of aesthetics, pedagogy (psychology), art and other interdisciplinary disciplines, aesthetic education can directly hit people's hearts, thus shaping good moral character. It cannot be simply divided into artistic skills and beauty, but aesthetic education is mainly implemented at the school level. Intangible culture contains the height of aesthetic culture, aesthetic education is the implementation of renewable cultural resources, intangible culture should not only stay in the museum, art and library, etc., should be to the public life and psychology, intangible digital aesthetic education course using digital technology development of intangible online aesthetic education courses, such as using all kinds of digital technology to build online aesthetic education courses, guide students to learn, on the one hand, inheritance and protection of local culture, enrich the connotation of aesthetic education on the other hand.

### **3 Methodology**

#### **3.1 Relevant theoretical basis and technical basis**

Intangible cultural heritage is the precious wealth of mankind. When China established the National Intangible Cultural Heritage Online Museum, the intangible cultural heritage projects were divided into folk literature, traditional music, traditional dance, traditional drama, folk art, traditional sports, entertainment and acrobatics, traditional art, traditional skills, traditional medicine, folk customs and other projects. In the context of big data, the technical support for digital course development includes but is not limited to the digital course resource platform, big data technology is applied in the data collection, processing and analysis. In terms of data collection, through the use of network crawlers, application programming (Application Programming Interface, API) interface and other technical means, can automatically grab data from all kinds of educational resources, to realize the rapid accumulation of large-scale data. Secondly, in terms of virtual reality technology (virtual reality, VR), “it can rebuild a multi-dimensional cultural space, provide the possibility of immersion in the digital world, and increasingly become an important tool for the research, protection and dissemination of cultural heritage”<sup>[5]</sup>. At present, the exploration of virtual reality related to intangible cultural heritage mainly focuses on research fields. For example, “the design and development of a VR application named "Celestial Breeze" is based on multimedia learning theory”<sup>[6]</sup>, Provide the cultural knowledge of different European countries to maximize the learning effect of users. Above related research on intangible digital protection plays a vital role, but the intangible cultural heritage in addition to related images, images and text, audio and video records, sorting and display, should also inherit the inherent emotion, humanistic spirit and spirit, aesthetic education is direct spiritual education, developed digital intangible aesthetic education courses, into online learning resources can promote intangible culture and emotion into the depths of students' heart, better inheritance and protection of intangible heritage inheritance and innovation of new development.

#### **3.2 Key technologies for the development of intangible cultural heritage digital aesthetic education curriculum resources**

The development of intangible cultural heritage digital aesthetic education curriculum resources mainly refers to the establishment of digital teaching courses of intangible cultural heritage aesthetic education curriculum dissemination with multimedia courseware as the technical means. Multimedia courseware is an important part of digital education resources, and also a common information teaching tool used by the front-line teachers. This paper mainly studies the digital aesthetic education course resources of intangible cultural heritage designed by Articulate Storyline (see Fig.1) network interactive multimedia development tools, so as to facilitate students to integrate into the intangible cultural heritage and have intuitive feelings for it.

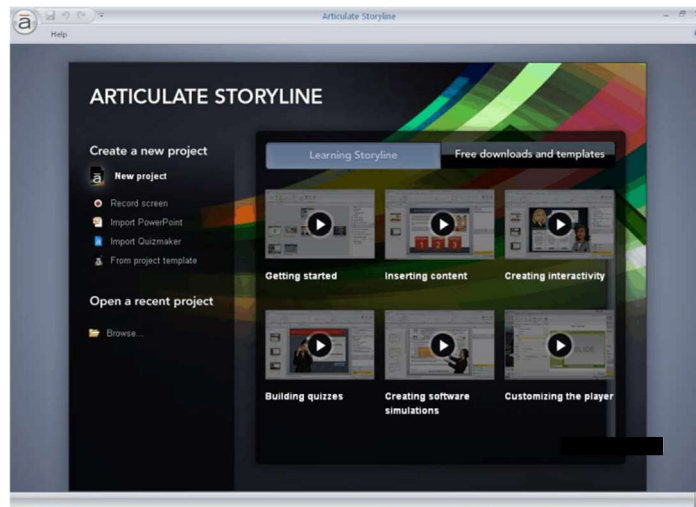


Fig.1. Articulate Storyline working interface diagram

### 3.3 Articulate Storyline working legend

Articulate Storyline Is a courseware making tool software developed by Articulate company to create interactive E-Learning courses. In September 2014, Articulate released an upgraded version of Storyline2 with a Chinese version. The software can create a variety of interactive effects simply and conveniently without writing code. The courseware can be published in Flash, HTML 5, SCROM format. The published courseware can not only be viewed on PC, directly connected with LMS system, but also be accessed on iPad and Android system. Please see how it works(see Fig.2)。

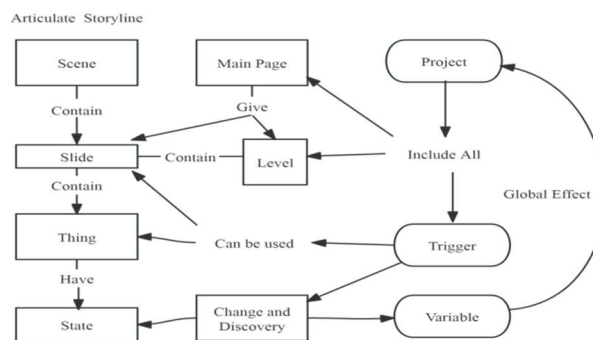


Fig.2. Articulate Storyline working legend

### 3.4 Based on Articulate Storyline Xiangxi intangible cultural heritage aesthetic education curriculum development and design

Basic process of developing and producing Storyline network interactive intangible cultural heritage aesthetic education curriculum resources:

- (1) Learning situation analysis: teaching objectives, teaching objects, teaching material analysis, teaching methods and teaching evaluation methods.
- (2) Collect the intangible cultural heritage resources of western Hunan. See Fig.3 for excavating the intangible cultural heritage aesthetic education elements (representative catalogue of national intangible cultural heritage).
- (3) Determine the theme of Xiangxi intangible cultural heritage aesthetic education, design courseware, mainly considering logical combing, material design, interface design, script design, color collocation.
- (4) Courseware design and production of interactive aesthetic education course cases based on Storyline: technical tools, intangible cultural heritage material processing, main body production, interactive setting, strengthening characterization.
- (5) Comprehensive evaluation, commissioning and release.

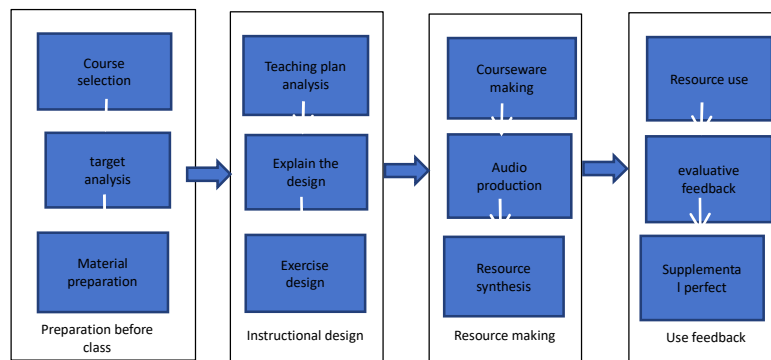


Fig.3.Flow chart of Story Development resources

### 3.5 Development Plan of Xiangxi Intangible Cultural Heritage Digital Aesthetic Education Curriculum (see Fig. 4)

As a technological network, on the one hand, it expands teaching and learning methods, leading to the emergence of a "classroom" with no time difference and no distance. "The path and methods of dissemination, communication, viewing, and display formed by relying on online media and platforms have maximized their reach to the public, providing greater possibilities for the dissemination of contemporary social aesthetic education"<sup>[7]</sup>. On the other hand, the reconstruction of images, text, sound, and images through hardware and software is a redefinition of art output forms by new technologies. But this is complementary rather than subversive, and the temperament and literacy condensed by art education will not be transferred due to changes in form; On the contrary, it places "beauty" within it, "holding onto the path of the past to preserve the present."<sup>[8]</sup>. Xiangxi intangible digital aesthetic education curriculum development whole is divided into three links, the first link for Xiangxi intangible resources collection and arrangement, according to the digital teaching theory, aesthetic education theory, curriculum development theory, intangible cultural heritage theory, the development of intangible online aesthetic education course resources, mainly including multimedia courseware, micro video, inheritance video, online interaction way four aspects of

course resources. “The second link is the basic condition of the digital curriculum development integration, including course development environment, host hardware equipment, storage equipment, network system, related software support to collect and organize, on the basis of multimedia courseware, mainly rely on Articulate Storyline network interactive platform software, integrate HTML 5, STORM, Flash, micro video and other media technology, build different intangible types of aesthetic courseware resources”<sup>[9]</sup>. The third link is to build a learning platform. According to the age of the audience students and the existing resources and technical equipment of the existing management department, build a learning platform to divide functional modules and guide learners to participate in learning.

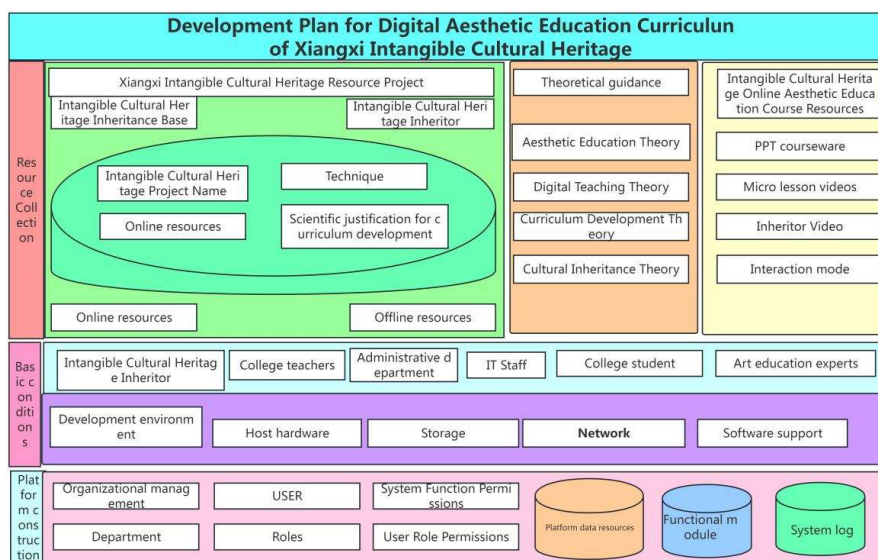


Fig.4. Development plan of digital aesthetic education curriculum of Xiangxi Intangible Cultural Heritage

### 3.6 The digital aesthetic education curriculum resources of West Hunan Intangible Cultural Heritage are integrated into the school teaching method

Education big data, AI technology of artificial intelligence education application and mobile phones, the popularity of intelligent terminal such as iPad, for digital curriculum development, interactive multimedia courseware production and practical application provides unlimited innovative platform and technology, Xiangxi intangible digital aesthetic education curriculum resources construction and use of relying on the rapid development of new media technology, at the same time also face the big challenges. Based on the view of cultural protection by using digital technology and inheritance, this research further considers the teaching thinking of integrating the digital aesthetic education curriculum resources of western Hunan intangible cultural Heritage into schools, which is mainly completed through the online interaction between students and teachers.(See Fig.5)

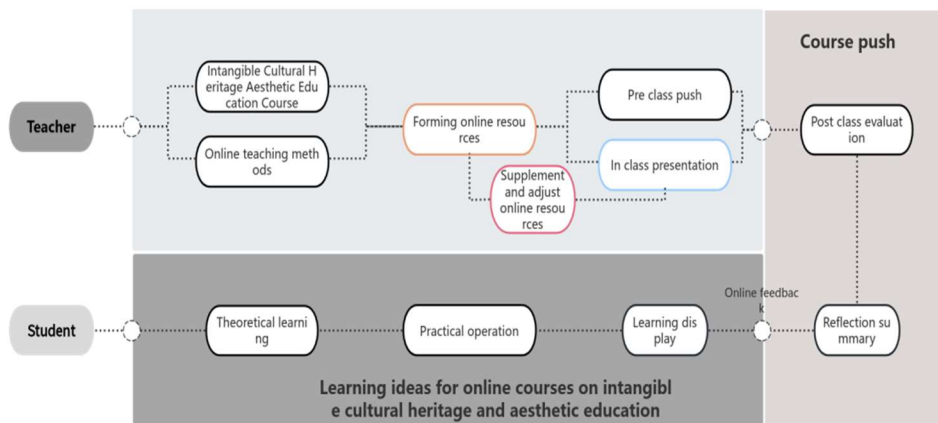


Fig.5. Learning ideas of the online course of intangible Cultural Heritage aesthetic education

#### 4 Result Analysis and Discussion

Through the comparative study before and after the experiment, it is shown that the Storyline courseware, with the rich aesthetic education of intangible cultural heritage, greatly promotes the protection and communication effectiveness of the intangible cultural heritage, and enhances the students' interest in learning. SPSS was used to analyze the difference between the pre-test and post-test learning effect of the control class A and the experimental class B, indicating that the learning effect and feedback of the experimental class were better than that of the control class.(See Table.1-2.)

Table 1. Test scores of classes A and B before the trial

Class	≥60	61-79	80-90	90-100 (Excellent)	Average	Pass rate	Number of people
A	2	7	26	16	81	31%	51
B	3	13	24	12	78	23%	52

Table 2. Test scores of classes A and B after the test

Class	≥60	61-79	80-90	90-100 (Excellent)	Average	Pass rate	Number of people
A	1	8	28	14	83	27%	51
B	0	6	21	24	91	46%	52

In short, under the background of big data, the curriculum development and inheritance path of Xiangxi intangible cultural heritage has important practical significance and theoretical value. The above tests show that, Promoting the inheritance and innovation of the intangible cultural heritage through digital means can not only enrich the content and form of the aesthetic education courses, but also improve the social awareness and influence of the

intangible cultural heritage, The most important thing is to improve the students' learning results, and inject new vitality into the sustainable development of the intangible cultural heritage in Western Hunan.

## 5 Conclusions

With the continuous development of information technology, the use of digital means to implement the protection and inheritance of intangible cultural heritage has gradually become a global consensus. The results indicate that the development and establishment of digital aesthetic education courses for intangible cultural heritage in western Hunan can not only protect and actively inherit the culture of intangible cultural heritage in western Hunan, but also have a positive impact on education. Under the background of big data, the development and inheritance path of intangible cultural heritage in western Hunan has important practical significance and theoretical value. Aesthetic education is also a form of cultural inheritance, conveying China's unique artistic and cultural aesthetics, promoting the humanistic spirit of the Chinese nation, and enhancing the literacy and aesthetic sentiment of the entire population. "Teachers should also pay high attention to the diverse values of art, folk customs, culture, and other aspects contained in intangible cultural heritage art in curriculum development and implementation"<sup>[10]</sup>. "The diverse disciplinary backgrounds of the curriculum development team, as well as the accessibility of course content and related resources, should also be emphasized"<sup>[11]</sup>. The limitation of this study lies in the insufficient understanding of big data and advanced multimedia technology, which is mainly reflected in two aspects: first, the development of intangible aesthetic education based on Articulate Storyline multimedia interactive software is not skilled enough to make full use of the interactive platform to carry out daily teaching and curriculum development; the method of creative transformation of intangible cultural heritage using multimedia technology needs to be further studied. The influence of digital courses is enormous, becoming a high-quality carrier for cultural knowledge dissemination, especially in areas with relatively scarce educational resources. Digital courses can expand the cultural perspective of educators and learners. In the near future, the use of digital technology to inherit the excellent intangible cultural heritage and the development of digital intangible cultural heritage aesthetic education courses will get better development.

**Acknowledgements.** This study was supported by the 2023 project "Research on the Development and Implementation of Aesthetic Education Curriculum in Compulsory Schools in Xiangxi Region from the Perspective of People's Livelihood Care" (Approval No. XSP24YBC286) by the Hunan Provincial Philosophy and Social Science Achievement Committee.

## References

- [1] Mao Jinjin, Zhang Hongmei. Current Situation and Strategy Analysis of Digital Application of Intangible Cultural Heritage in Ningxia [J]. *Heritage and Protection Research*, 2018,3 (01): 49-52. DOI: 10.19490/j.cnki. issn2096-0913.2018.01.009.



- [2] A. Aw, B. Tc, and C. VI, "Assessing the impact of vehicular particulate matter on cultural heritage by magnetic bio-monitoring at Villa Farnesina in Rome, Italy," *Science of the Total Environment*, vol. 823, pp. 153729–169482, 2022.
- [3] Zhuoma, Hou Zhixiang, Ren Jinglong. Analysis of Intangible Cultural Heritage Inheritance and Smart Digitization Construction in Qinghai Province under the Background of Artificial Intelligence [J]. *Journal of Nanchang Normal University*, 2023,44 (05): 124-129
- [4] Sun Chengcheng. Research on the construction of core higher vocational professional courses based on digital resources —— Take the ship construction course of ship engineering technology major as an example [J]. *Liaoning Higher Vocational College*, 2023,25 (09): 47-51 + 62.
- [5] Pappa G, Ioannou N, Christofi M, et al. Preparing student mobility through a VR application for cultural education. In: *Advances in Digital Cultural Heritage*. Berlin: Springer, 2018. 218-227
- [6] Wang Y X. *The Digitization of National Cultural Heritage*. Beijing: People Press, 2009. 8
- [7] Liu Quanwei, Li Liping, Liao Jing. Research on the development of digital curriculum in primary and secondary schools based on knowledge graph [J]. *Journal of Guangxi Radio and Television University*, 2023,34 (02): 46-53.
- [8] Zeng Xiaoyu. What is Online Art Education - A Preliminary Review of Teaching Reform and Curriculum Construction in Online Art Education Studios [J]. *Art Education Research*, 2022 (03): 128-129
- [9] Mei Fen, Chen Mingbin. The Inner Mechanism and Path of Integrating Aesthetic Education into Rural Revitalization: A Discussion on "Rural Beauty" under the Integration of Culture and Tourism. *Social Scientist*, 2022 (06): 45-52
- [10] Shively K, Palilonis J. Curriculum Development: Preservice Teachers' Perceptions of Design Thinking for Understanding Digital Literacy as a Curricular Framework [J]. *Journal of Education*, 2018,198(3):202-214.
- [11] Zhang Manxue, Tang Jinyu. New Reflections on Rural Aesthetic Education: A Leading Review of the Development and Implementation of Digital Curriculum in Rural Aesthetic Education [J]. *Calligraphy and Painting World*, 2023, (04): 89-90