



RESEARCH ARTICLE

Study of China Opera Intangible Cultural Heritage for Online Learning Center

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ABSTRACT

Intangible cultural heritage is an important symbol of national culture, and its protection and inheritance have received widespread attention. In 2003, UNESCO introduced the Convention for the Safeguarding of the Intangible Cultural Heritage, promoting countries to strengthen the protection and documentation of intangible cultural heritage. Subsequently, China introduced relevant policies to clearly adopt various forms of recording and preserving intangible cultural heritage resources. At the same time, the proposal of the concept of lifelong education provides an important way for cultural inheritance, integrating the concept of lifelong education into excellent traditional culture, and assisting in knowledge dissemination and cultural protection. Hunan local operas Jinghe Opera, Xiang Opera, and Baling Opera, as national intangible cultural heritage, demonstrate unique historical value. However, their educational inheritance faces problems such as scattered resources and insufficient curriculum design. Therefore, this study intends to establish an online course center to explore a lifelong education model, in order to promote the inheritance and promotion of traditional Chinese opera culture, and further enhance social attention. Research objective: (1) To explore the content of an online learning center for intangible cultural heritage of Hunan opera (Baling opera, Jinghe opera, Xiang opera), and (2) to design an online learning center for intangible cultural heritage opera to enable people to achieve lifelong learning.

(1) Literature research method; (2) Field investigation method: on-site observation and participation; (3) System validation method; (4) Questionnaire survey method; (5) Interview method: Semi structured interview method. Through the above research methods, explore the content of the online learning center for Hunan opera intangible cultural heritage (Baling opera, Jinghe opera, Xiang opera), and ultimately design an online learning center for intangible cultural heritage opera.

The Hunan Opera Intangible Cultural Heritage Online Learning Center designed in this study is based on the principle of lifelong education, focusing on learners, covering a highly interactive and content rich curriculum system and personalized learning plans. Enhance learning experience and effectiveness through modular courses, real-time feedback, and diverse interactive tools. After expert evaluation, it is recommended to clarify the advantages of incorporating learning activities, evaluation mechanisms, and cultural elements. It is suggested to strengthen the attractiveness of the interface and copyright management, and further optimize the platform's functions and user experience.

This study designed an online learning center for lifelong learners of Hunan opera (Baling opera, Jinghe opera, Hunan opera) intangible cultural heritage, covering teaching objects, modes, and system structures, aiming to promote the inheritance and learning of intangible cultural heritage. The learning center is centered around learners and includes six elements: educators, learners, managers, communication technology, learning resources, and learning activities.

INTRODUCTION

Material cultural heritage is an important symbol of a country's and a nation's historical and cultural heritage, an important component of traditional culture, and a valuable social and cultural asset. In October 2003, the 32nd session of the UNESCO General Conference introduced the Convention for the Safeguarding of the Intangible Cultural Heritage, which was an important milestone in the protection of intangible cultural heritage in human history (Lazaro Ortiz&Jimenez de Madariaga, 2022). China has reached a consensus with the international community on the protection of intangible cultural heritage. In 2005, it issued the "Opinions on Strengthening the Protection of China's Intangible Cultural Heritage", which clearly proposed the use of text, audio, digital and multimedia means to truly, systematically and comprehensively record intangible cultural heritage, establish archives and databases, and take rescue measures for projects on the brink of disappearance (Xie et al., 2022). In 2011, the "Law of the People's Republic of China on Intangible Cultural Heritage" was promulgated and implemented, which stipulates that the competent authorities and other departments should not only study, research and explore intangible cultural heritage, but also fully understand it, and then identify, record, establish archives and databases of it (Kang, 2012).

Since Par Lengrand, then Director of the Adult Education Bureau of UNESCO, formally proposed the concept of "lifelong education" during the International Conference on the Promotion of Adult Education supported by UNESCO in 1965, the idea of lifelong education has been widely disseminated in countries around the world. Lifelong learning refers to the process of continuous learning throughout an individual's life cycle, aimed at adapting to the development of lifelong education and achieving personal development goals (Cai, 2024). It is the sum of the types of education carried out throughout a person's life, characterized by lifelong, democratic, comprehensive, flexible, practical, and extensive (Thwe&Kalman, 2024). However, the current situation of building a lifelong learning system in China is worrying. The construction of China's lifelong learning mechanism and development model lags behind developed countries and cannot meet the needs of people at present. In China, the lifelong learning system is still in its infancy and there is a gap compared to developed countries, lacking comprehensive guarantee mechanisms and distinctive learning models. Despite the rapid development of vocational colleges and open universities, traditional educational resources are limited and unable to meet the needs of society, and the problem of illiteracy rate remains prominent. In addition, uneven regional development leads to significant differences in learning facilities and conditions, with significant differences between the eastern and western regions as well as between urban and rural areas. Li Shuting (2024) pointed out that China's past lifelong learning system mechanism and model construction have the following three characteristics:(1) the lag of lifelong learning practice; 2) The limitations of traditional educational resources; (3) The imbalance of regional development.

As a place for the inheritance of human culture, lifelong education introduces traditional excellent culture into the teaching of lifelong education, which not only promotes the diversified development of culture and reflects the cultural value of local art, but also has practical significance for the inheritance and protection of excellent culture (Wang, 2024, Cai et al., 2024). Hunan local opera, including Jinghe opera, Xiang opera, Baling opera, etc., is an important part of Chinese opera culture,

with a profound historical and cultural foundation and unique local characteristics. These three types of opera are national intangible cultural heritage of China. The official recognition of these three types of opera as cultural heritage by the state has established their status in traditional Chinese culture, while also marking the recognition of their importance in inheritance and protection at the national level. At present, although intangible culture has received sufficient attention, there are still serious problems in the inheritance of education. School education is currently a major means, but its scope is not wide and there are limitations to its widespread dissemination. The presentation of Baling Opera in Chinese education is generally in the form of lectures, without specialized curriculum design, while materials on theoretical research, performance research, and other aspects of Jinghe Opera and Xiang Opera are relatively scattered. Therefore, based on the above research background, this study sets up a relatively complete online course center for Baling Opera, Jinghe Opera, and Xiang Opera, constructs a lifelong education online learning platform, explores the lifelong education model of opera, enables people to achieve lifelong learning, and further promotes and inherits Hunan opera culture.

Objectives

1. Explore the content of the online learning center for Hunan opera intangible cultural heritage (Baling opera, Jinghe opera, Xiang opera).
2. Design an online learning center for intangible cultural heritage opera, enabling people to achieve lifelong learning goals.

LITERATURE REVIEW

Relevant literature on intangible cultural heritage of Hunan opera

Baling Opera, also known as "Baxiang Opera", is a representative of traditional Chinese opera in the eastern Hunan region. It is mainly spread in Yueyang City and surrounding areas of Hunan Province, China, and holds an important position among the major local theatrical genres in Hunan Province and even throughout the country. Baling Opera originated from Baling Mountain and is located in the center of Yueyang City. Therefore, Baling Opera is often referred to as "Yueyang Baling Opera" or "Yueyang Opera" (Jin, 1990). This opera is a "living fossil" for studying the history, culture, and folk customs of Yueyang, as well as a valuable material for studying the evolution of Chinese opera and the formation and development of local opera genres. In 2006, the State Council included it in the first batch of national representative protection projects for intangible cultural heritage, with project number IV-34.

Jinghe Opera is one of the local operas in Hunan Province, China. It is mainly popular in Jingmen City and its surrounding areas, including counties and cities such as Zhongxiang, Jingshan, and Shayang. It is named after the Jinghe section of the Yangtze River. The name Jinghe Opera comes from the Jingjiang River that flows through Jingmen City, with a long history of development spanning several centuries. The singing style of Jinghe Opera has the characteristics of high pitched, loud, and grand momentum, originating in the Ming Dynasty. Its initial form may have been similar to that of Han Opera and other theatrical genres, in a state of mutual exchange and reference. In the Qing Dynasty, especially during the reigns of Qianlong and Jiaqing, Jinghe Opera began to form its own characteristics (Liu, 2008). Artists have absorbed the characteristics of various regional operas such as Pihuang and Kunqu, gradually evolving into distinct local opera genres (Yi, 2015). In 2006, the State Council included it in the first batch of national representative protection projects for intangible cultural heritage, with project number IV-35.

Hunan Opera, also known as Hunan Opera, is one of the traditional theatrical genres in Hunan. The origin of Hunan Opera can be traced back to the late Ming and early Qing dynasties, when traditional Chinese operas such as chicken catching opera and lotus flower drop began to emerge. After long-

term development and artistic integration, a relatively fixed artistic style and performance system gradually formed from the late 19th century to the early 20th century, becoming the main form of Hunan opera. The performance mainly uses Hunan dialect, especially the dialect based on Changsha dialect, combined with its unique pronunciation and percussion accompaniment, making Hunan opera have a distinct local color (Chen, 2003). Its performing arts are known for their sincerity and naturalness, and the actors' performances focus on the true expression and experience of their inner emotions. It has unique performance styles in singing, recitation, acting, and fighting (singing, recitation, performance, martial arts), making Hunan Opera occupy a place in the opera family. In 2006, the State Council included it in the first batch of national representative protection projects for intangible cultural heritage, with project number IV-13.

The Current Research Status of Online Learning Centers

The term 'Learning Centre' is used to describe a learner centered educational environment where resources, facilities, and support are integrated to promote spontaneous learning among students. The concept of learning centers originated in the educational revolution of the 20th century, when educators and researchers began to focus on how to better promote knowledge absorption and meet diverse learning needs (Hou&Wang, 2023). The concept of a learning center emphasizes the importance of personalized learning experiences, learner autonomy, and self-seeking knowledge and skill development (Hu et al., 2013). It is a physical or virtual space where learners can learn through various forms of teaching materials, techniques, activities, and professional guidance (Pan et al., 2010). With the development of learning theories, especially the promotion of constructivist theory, learning centers have emerged.

With the development of the times, the shortcomings of traditional teaching methods have become increasingly apparent, and online education can precisely make up for these shortcomings. It has timeliness, interactivity, and collaboration, and can better meet the various needs of learners in the information age (Sadeghi, 2019). Online education strengthens the educational function, breaks through the limitations of time and space, and meets the personalized needs of learners. Many countries have paid great attention to online teaching since the 1990s. The countries that first started online and distance learning include the United States, Australia, Canada, etc., which to some extent promoted the development of various online learning platforms (Singh et al., 2021). The online learning center is an Internet based education platform, which combines a variety of digital resources and learning tools to support and enhance the distance education experience (Siemens et al, 2015). Unlike traditional face-to-face learning environments, online learning centers provide students with a flexible and accessible way of learning. Network technology brings innovation to education, with characteristics such as flexibility, diversity, and interactivity. It has high adaptability in higher education, continuing education, and vocational training. The emergence of MOOCs in 2010 greatly promoted the development and reform of online education in China (Gai&Huang, 2022). Although there is a wide range of literature on the construction of online learning platforms in China, research related to traditional Chinese opera is not in-depth. At present, most research focuses on the development and application of general online education platforms, with less in-depth exploration of specific fields such as opera.

The concept of lifelong learning

The idea of lifelong education began in the 1920s, first proposed by Paul Langlong in "Introduction to Lifelong Education". After the publication of "Learning to Survive - Today and Tomorrow in the World of Education" and "Education - The Wealth Within", it became the guiding ideology for future education. The Action Plan for Revitalizing Education in the 21st Century, approved by the State Council of the People's Republic of China in 1988, mentioned the goal and task of establishing a lifelong learning system nationwide by 2010 (Chen, 2007); The strategic goal set in the "National Medium - and Long Term Education Reform and Development Plan Outline (2010-2020)" issued in

2010 is to "achieve basic modernization of education, form a learning oriented society, and enter the ranks of a strong human resources country by 2020". It requires "extensive development of urban and rural community education, acceleration of the construction of various learning-oriented organizations, and the basic formation of a learning-oriented society with nationwide learning and lifelong learning" (Chen et al., 2012). Article 11 of the 1995 Education Law stipulates that the establishment and improvement of a lifelong education system has become a basic national policy protected by law (Han, 2002). With the gradual deepening of the concept of lifelong learning in China and the widespread development of lifelong learning activities, building a lifelong learning system has also become an important task for the Chinese government.

The theory of lifelong learning advocates that education is a continuous, life cycle development process aimed at cultivating individuals' ability to adapt to constantly changing environments. This theory breaks through the traditional scope of education and emphasizes that learning occurs at multiple stages and in numerous environments throughout an individual's life, such as traditional classrooms, workplaces, and digital platforms (Peters&Romero, 2019). The open curriculum model is an educational model that allows anyone to access educational resources and course content without barriers at any time and any place. The main characteristics of this model are the accessibility, flexibility, and inclusiveness of the curriculum (Li&Wang, 2012). The open curriculum model is often closely related to online education and distance learning, and uses many information technology means, including but not limited to the Internet, multimedia resources and various learning management systems (LMS) (Lu, 2014). The core concept of the open curriculum model is educational equity and lifelong learning, with the aim of eliminating limitations on accessing high-quality educational resources caused by factors such as geography, economy, time, and social background.

Conceptual Framework

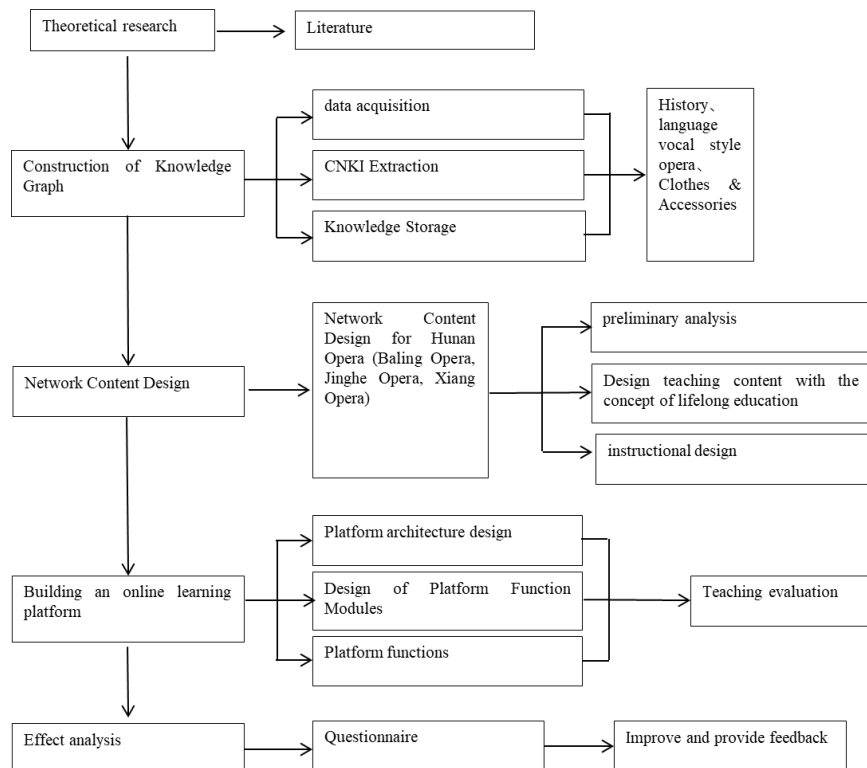


Figure 1. The research framework illustrates the construction process of the Hunan Opera Intangible Cultural Heritage Online Learning Center under the concept of lifelong education

METHODOLOGY

Literature research

By systematically reviewing academic papers, monographs, and research reports in relevant fields, we can comprehensively grasp the characteristics and educational inheritance models of the intangible cultural heritage of Baling Opera, Jinghe Opera, and Xiang Opera, and summarize the historical background, theoretical basis, and latest progress of the research themes.

Field investigation

Through on-site observation and participation, first-hand information can be obtained, enhancing the authenticity and depth of research. In order to obtain first-hand information on traditional Chinese opera music, researchers conducted field research on performance groups and research institutes related to Hunan opera. They visited group art museums, cultural bureaus, and city museums to conduct comprehensive and systematic investigations. Through field research and investigation, they understood the objective reality of Hunan opera music resources and comprehensively collected pictures and information on these three types of opera music.

System validation

By constructing mathematical models and logical reasoning, ensure the correctness and reliability of system design. For example, in software development, formal verification techniques can detect potential errors and vulnerabilities in advance, thereby improving software quality and reducing maintenance costs in the later stages. The main purpose of this study is to establish an online learning platform for Hunan opera intangible cultural heritage that conforms to the principle of lifelong education, and to conduct repeated experiments, corrections, and debugging of the platform to ensure its normal operation and complete teaching functions.

Questionnaire

Questionnaire survey is a widely used tool in social science research, market analysis, and public policy evaluation. Through carefully designed questions, researchers are able to collect a large amount of standardized data that can be used for statistical analysis to draw universal conclusions. This study used a survey questionnaire method to understand learners' feelings and experiences when using online learning platforms for traditional Chinese opera such as Baling Opera, Xiang Opera, and Jinghe Opera. The aim was to explore whether the platforms have a positive effect on learning motivation and emotional cultivation. Feedback from the questionnaire was used to understand the advantages and disadvantages of the platforms, and to help improve the functionality and structural design of the online learning platform for Chinese opera intangible cultural heritage in the future.

Interview

Interview method is a qualitative research approach that delves into specific topics or issues. By communicating face-to-face or remotely with the respondents, researchers can obtain richer and more detailed information. This study used a semi-structured interview method, which allows researchers to adjust the direction of questions based on the interviewee's answers in real time, thereby delving into multiple levels of the question.

Through the above research methods, explore the content of the online learning center for Hunan opera intangible cultural heritage (Baling opera, Jinghe opera, Xiang opera), and ultimately design an online learning center for intangible cultural heritage opera.

RESULTS

Summary of questionnaire survey.

According to a questionnaire survey conducted among college students, graduated students, and the general public, people hope that the Hunan Intangible Cultural Heritage Opera Online Learning Center can have a highly interactive, personalized, and flexible learning environment, with an intuitive and easy-to-use interface design. The communication area can provide multiple communication methods, and the homework submission area can provide clear homework requirements and guidance, as well as a simple and fast submission process, especially through mobile devices. Moreover, the center should provide diverse learning materials such as video lectures, e-books, and articles, and ensure that these materials are constantly updated to meet the expectations of respondents for high-definition videos and interactive multimedia content. In addition, these three groups of people hope that online learning centers can regularly hold a variety of teaching activities to maintain learning motivation and participation, and provide personalized learning plans and achievement certifications.

Interview summary.

According to interviews with inheritors of intangible cultural heritage and university teachers, online education and inheritance of intangible cultural heritage of Hunan opera is gradually becoming a key way to protect and promote this traditional art. This mode uses digital platform and Internet technology not only to broaden the dissemination scope of Baling Opera, Hunan Opera, Jinghe Opera and other Hunan operas, but also to provide new possibilities for the preservation, inheritance and development of opera art. The establishment of online learning centers is aimed at different groups, including opera enthusiasts, professional actors, students, researchers, and many other lifelong education learners. In terms of platform design, rich learning content should be provided, including classic singing passages, opera makeup, costumes, and historical and cultural elements. Special emphasis should be placed on teaching the "inner and outer eight skills" of Baling opera, the use of eye contact and singing style in Hunan opera, and the percussion techniques and instrument skills of Jinghe opera. Through high-definition video display and commentary, innovative teaching methods are used to provide modular opera teaching videos, lectures, and workshops, enriching the learning experience. At the same time, experts emphasize the establishment of a comprehensive and professional online teaching platform to provide basic, professional, and distinctive courses, and to help students master performance skills and music culture knowledge through the combination of theory and practice, video tutorials, and thematic discussions.

Comparison and summary of 5 major learning platforms.

Compare the five mainstream online learning platforms in China based on the principle of lifelong education. The content planning of Hunan Opera Intangible Cultural Heritage Online Learning Center draws on mature online learning platforms in China, such as NetEase Open Course MOOC, Love courses and collaborate with local cultural institutions and opera groups to jointly develop specialized course resources. The online learning center has initially established a curriculum system from beginner to advanced, to meet the needs of learners at different levels and ensure the timeliness and applicability of course content. Content adjustments are made through regular updates and efficient user feedback mechanisms. In addition, the online learning center will provide diverse course options, achieve personalized education, and enhance the academic recognition and attractiveness of the courses. At the same time, develop various interactive tools such as forums, live discussions, online Q&A, etc. to promote communication and interaction among learners, create a positive learning atmosphere, and enhance learners' participation and interactivity. By setting up these contents, the Hunan Opera Intangible Cultural Heritage Online Learning Center will provide effective reference for the development of future online learning centers.

Summary of the draft of Hunan Opera Intangible Cultural Heritage Online Learning Center

The design draft of Hunan Opera Intangible Cultural Heritage Online Learning Center emphasizes the central position of learners under the principle of lifelong education, and promotes their growth through a systematic operation process (including preparation, learning, and evaluation). In the preparation stage, learners learn basic information through course introductions and choose learning content based on their interests and needs, while conducting pre class tests to assess their basic knowledge and skill levels. The learning stage starts with the basic knowledge of traditional Chinese opera, gradually transitioning to the study of vocal music, vocal techniques, body movements, and facial expressions, and consolidating through repeated practice. The evaluation and feedback stage evaluates learning outcomes and course quality through post class tests, course evaluations, discussion summaries, and learning reflections. This platform provides personalized learning paths and real-time feedback, supporting learners to select and segment learning resources from a resource library, and communicate with other learners or teachers by activating the discussion function to obtain immediate feedback and in-depth guidance. The platform also provides multiple real-time discussion methods, including video, text, and voice communication, to promote mutual inspiration and creative exchange among learners. After completing the viewing and discussion of the learning content, the learner enters the homework submission stage, records and submits the homework in real-time, and the teacher or system evaluates and provides feedback on the homework. According to feedback, learners may need to improve their assignments and resubmit them until they meet the expected standards. Overall, the online learning center aims to drive its continuous improvement and development through a systematic learning process and real-time feedback, while emphasizing the important role of communication technology and learning resources in supporting the learning process.

Expert evaluation summary of Hunan Opera Intangible Cultural Heritage Online Learning Center

According to the evaluation results of experts from Thailand and China, the Hunan Opera Intangible Cultural Heritage Online Learning Center designed in this study performs well in multiple key dimensions, especially in the organization of learning activities, learning process framework diagram, evaluation and feedback mechanism, presentation of learning content, and homework submission and feedback. Experts emphasized the importance of promoting learner interaction and integration into the classroom, as well as the crucial role of Chinese cultural elements in enhancing platform attractiveness and increasing user loyalty. The open and transparent course information and copyright statement on the platform help to build authority and trust, while the exquisite matching of opera costumes and makeup enriches the learning experience, enhances learning interest and effectiveness. Based on the suggestions of these experts, the webpage display end of this platform will be comprehensively improved to enhance its attractiveness and competitiveness. Through the unique charm and rich connotation of Chinese culture, the platform can not only enhance users' sense of belonging and loyalty, but also allow users to feel the charm of culture.

DISCUSSION

Discussion on the Content of Hunan Opera (Baling Opera, Jinghe Opera, Xiang Opera) Online Learning Center

The content design of the learning center is aimed at the lifelong education group, covering teaching objects, modes, and system structures. Firstly, the correctness of the teaching content was emphasized. In the context of lifelong education, ensuring the accuracy of learning materials is crucial for maintaining the authenticity and integrity of cultural heritage (Zhao, 2024). Baling Opera, Jinghe Opera, and Xiang Opera, as unique forms of traditional Chinese opera in Hunan Province, require strict adherence to traditional norms in terms of their historical origins, language characteristics,

costume styles, makeup techniques, and accompanying instruments. Therefore, in the content design of this learning center, special attention is paid to hiring experts in the field of opera for review and guidance to ensure the authority and accuracy of the teaching content. This point refers to (Li, 2020) "Design and Application of Translation Teaching Practice Platform Based on Crowdsourcing Mode" and (Yin&Sang, 2024) "Research on Modular Setting of Education Major+" Micro Major "Courses". Through these measures, not only has the professionalism of the learning content been ensured, but also the inheritance and development of Hunan opera culture have been promoted.

In addition, the online learning platform content of this study coincides with the insights of Wang Lin (2023). In the journey of learning traditional Chinese opera, there are no students who cannot learn, only mentors who have not been properly guided. This concept emphasizes that teachers must continuously improve their teaching ability in traditional Chinese opera skills, conduct in-depth research on teaching strategies, explore innovative teaching models, and improve the teaching system, committed to cultivating generation after generation of opera inheritors. Zhou Gucheng (2021) believes that the traditional education method, which mainly relies on mentorship, has effectively cultivated generations of inheritors and even famous masters of traditional Chinese opera culture. However, its drawback is that it cannot be popularized and fully covered nationwide; The compilation of textbooks not only requires scientific thinking, but also needs to meet the needs of teaching. This not only relates to good teaching effectiveness and talent cultivation quality, but also affects the mutual growth of teaching and learning. By exploring the content of online learning centers, not only is it guiding opera reform and organizing drama creation, but it is also ensuring the authority and inheritance of opera education content. Through this study, it is of great significance for the inheritance and development of Hunan opera, and provides reference for the design of subsequent learning platforms.

Design and Discussion of Hunan Opera (Baling Opera, Jinghe Opera, Xiang Opera) Intangible Cultural Heritage Online Learning Center

According to the survey conducted in this study, the majority of respondents consider themselves lifelong learners, indicating a widespread demand for online learning platforms. This is consistent with Tolochko et al.'s (2021) study, which emphasizes the importance of lifelong learning. Therefore, it is crucial to integrate the concept of lifelong learning into courses and vocational training. Traditional Chinese opera intangible cultural heritage inheritors and teachers have pointed out the urgency of establishing online learning centers in the face of a decrease in inheritors and a lack of interest among young learners (Ma et al., 2019). Although the curriculum for intangible cultural heritage of traditional Chinese opera is complex, interactive courses and multimedia content can stimulate learners' interest and promote cultural inheritance. Due to limited public understanding of Hunan intangible cultural heritage opera, it is necessary to first establish an online learning center, and then improve awareness through a combination of online and offline methods, providing interactive videos and live courses (Glance et al., 2013), organizing opera performances and workshops, allowing enthusiasts to learn and experience opera, and deepen their understanding and love for Hunan opera culture.

This study focuses on the design of a learning platform for intangible cultural heritage (ICH) of Hunan opera, which integrates four core elements: people (including educators, learners, and managers), communication technology, learning resources, and learning activities. Huang et al. (2024) proposed in their study that in the context of the intelligent age, the shift in learning attitudes emphasizes the central position of learners in a smart and interconnected learning environment. This environment is composed of the Internet of Things, smart devices, etc. Learners acquire knowledge, skills, and attitudes through collaborative interaction with peers, teachers, and network agents. In this process, learners focus on building a humanized learning environment, while the participation of managers further emphasizes the learner centered educational philosophy and promotes the formation of

personalized learning paths. Managers can provide customized learning resources and guidance based on learners' needs and progress, thereby improving learning efficiency and effectiveness. The application of communication technology in the field of teaching greatly enriches the diversity of knowledge presentation and promotes the digital storage of knowledge. Currently, the digital transformation of education is gathering numerous technological innovations such as open educational resources (OER), social networks, the Internet of Things, artificial intelligence, virtual reality and augmented reality, big data, programming, etc., to jointly promote this transformation (Tian et al., 2023). When exploring diverse educational models and broad educational concepts, we find that the two permeate each other, cross boundaries, and constantly expand (Liu et al., 2023). Under the comprehensive development mode of distance education, "Internet plus education" is particularly important. How to achieve refined, standardized, and collaborative teaching management, efficient allocation of teaching resources, adjustment of teaching services, monitoring of teaching processes, and precise teaching evaluation in the intersection and integration of different educational models and disciplines, as well as the interaction between online and offline teaching processes, are all issues that must be faced to maximize educational benefits. How to meet the diverse learning needs of different groups of people is exactly what the comprehensive development of distance education in the era of intelligent education must face. Learning activities, as one of the core elements, are the most important part of the entire development process. It emphasizes the function of discussion, and fundamentally, the key to lifelong learning lies in continuously learning scientific concepts. Online mobile learning can bring more help and inspiration to the construction of a lifelong learning system (Liang, 2024).

In this study, we delved into how the design and implementation of online learning platforms can promote the protection and inheritance of intangible cultural heritage in Hunan opera. As Ni Hong (2022) proposed, innovative communication methods are not only an inherent demand for the inheritance and development of traditional opera art, but also a practical necessity in the era of new media. By constructing a learner centered educational environment, it is possible to effectively enhance learners' participation and satisfaction, while promoting the dissemination of knowledge and the inheritance of culture. The integrated application of communication technology not only enriches teaching methods, but also provides possibilities for personalized learning. In addition, the integration of lifelong learning concepts provides learners with a platform for continuous learning and self-improvement.

CONCLUSION

1. This study explores the content of online learning centers for Hunan opera (Baling opera, Jinghe opera, Xiang opera). The content design of this learning center is aimed at the lifelong education group, covering teaching objects, modes, and system structures. The design of online learning content focuses on the correctness of teaching content, chapter division, and teaching efficiency, covering various aspects such as history, language, clothing, makeup, accompaniment instruments, and classic vocal learning, aiming to create a comprehensive online learning platform for learners.

2. This study designed an online learning center for intangible cultural heritage of Hunan opera (Baling opera, Jinghe opera, Xiang opera), which includes four important elements: people (educators, learners, managers), communication technology, learning resources, and learning activities. With learners at the core, teachers play the roles of knowledge transmitters and learning guides, while managers are committed to maintaining the learning environment and technical support. Communication technology plays the role of a teaching medium here, not only promoting the flow of information and the rational allocation of resources, but also inspiring learners to explore and interact spontaneously. The design philosophy of the platform focuses on learners' autonomous choices and lifelong learning, providing content that aligns with personal learning goals, and emphasizing online interaction to enhance the learning experience. In addition, the platform also

pays special attention to the submission and feedback process of assignments to ensure that learning objectives are effectively achieved.

RECOMMENDATIONS

Practicality.

In order to better enable learners of Hunan opera intangible cultural heritage to adapt to the online learning mode, teachers must improve or adjust the learning mode to adapt to the subject content and background. Teachers need to create learner centered teaching activities based on the platform, which must adapt to the learning pace and convey clear learning goals and gains to learners according to the principle of lifelong education. This not only helps learners to learn effectively, but also facilitates teaching improvement and reflection.

Basic skills.

The Hunan Opera Intangible Cultural Heritage Learning Platform built according to the principle of lifelong education is developed and designed based on computer systems and Internet information technology. Learners and teachers must have certain basic skills to use. If students do not have basic skills or knowledge to use the Internet, they need guidance, which will delay the progress of learning or bring bad learning experience to some learners.

Learning tools.

The Hunan opera intangible cultural heritage learning platform built according to the principle of lifelong education must have learning tools, such as computers, tablets, or some multimedia devices that can display. Without relevant tools, the efficient learning system of this learning platform cannot operate. Only with the support of these devices can learners successfully learn.

Research limitations and recommendations

1. The learning platform designed in this study belongs to academic research and has certain limitations in practical applications. In the future, it is recommended to build a formal learning platform based on this research for practical operation, and continuously revise and improve the platform on the basis of obtaining user learning experience; It is also possible to consider adjusting the teaching mode of Hunan Opera online learning platform to make it more in line with the concept of lifelong education.
2. This study has certain limitations in the selection of Hunan opera. It is recommended to conduct more social research in the future and select user preferred operas for platform design. This will not only facilitate the entry of the learning group, but also provide teaching points and elements related to Hunan opera learning from learners' practical experiences.
3. During the investigation and sampling process, due to limitations in manpower and material resources, the data sample of this study was not comprehensive enough. Suggest that researchers conduct surveys and sampling among more schools and social populations in Hunan region. In terms of interviewing experts, due to the limited number of experts who agreed to conduct interviews this time, it is recommended that future researchers seek more experts to obtain more comprehensive suggestions and guidance on the design of the Chinese opera intangible cultural heritage learning platform
4. In terms of evaluating the effectiveness of platform design (draft), this study was limited and restricted by its own resources, and did not obtain further evaluation and review from platform design experts. In practical operation, it is recommended that researchers obtain more suggestions from platform design experts and use them in the research process.

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