

Integrating Digitalization of Cultural Heritage into Ideological and Political Education Classes for College Students: current status, logic, and approach

Nan Li^{1,2}, Xiaofen Ji²

¹ Zhejiang University of Science and Technology, Hangzhou 310023, Zhejiang, China

² Zhejiang Sci-Tech University, Hangzhou 310018, Zhejiang, China

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract

Under the dual background of vigorously promoting the digitization of cultural heritage and deepening the ideological and political construction of courses in colleges and universities, the ideological and political elements contained in China's rich cultural heritage provide important resources for ideological and political education of college students. This paper takes 305 undergraduates from 5 universities in Zhejiang Province as the research object, and empirically analyzes the cognition and attention degree of current college students to digital intangible cultural heritage through questionnaire survey. The survey results show that there are some problems such as imperfect construction of resource base, digital teaching mode has not been established, teachers' relevant ability is lacking and practice platform is lacking. Therefore, this paper puts forward some suggestions from four aspects: constructing resource library, innovating teaching mode, improving teachers' ability and expanding practice platform, so as to promote the deep integration of cultural heritage and ideological and political education and enhance the effectiveness of ideological and political education.

Keywords

digitalization of cultural heritage;
college students; ideological and
political education; practice platform

Online publication: July 26, 2025

1. Introduction

In recent years, cultural heritage preservation and inheritance have become a vital component of China's national cultural strategy. In 2021, the "14th Five-Year Plan for Cultural Development" proposed the "Digital Heritage Protection Project to facilitate the digital transformation of cultural resources^[1]." In 2023, the National Cultural Heritage Administration released the

"Special Plan for Cultural Relics Digital Protection and Utilization during the 14th Five-Year Plan Period," which refined the goal framework and focused on establishing a nationwide digital resource system covering key cultural relics. This initiative aims to integrate digital cultural heritage into public cultural service systems.

Meanwhile, the digital revolution is fundamentally reshaping education. The Ministry of Education's

“Guidelines for Ideological and Political Education in Higher Education Courses” emphasizes systematically integrating ideological resources across all curricula and teaching methods with professional education, providing policy guidance for innovative approaches to ideological education. China currently boasts over 760,000 immovable cultural relics and 1,557 national-level intangible cultural heritage items, which embody profound patriotic values, craftsmanship spirit, and ethnic wisdom^[2-3].

With the rapid development of cutting-edge technologies like 5G, virtual reality (VR), and artificial intelligence, cultural heritage preservation has gradually broken through traditional limitations, evolving towards digital presentation and networked dissemination^[4]. New practices such as “digital cultural repositories” and “digital patrons” vividly demonstrate the social benefits and public engagement value of cultural heritage digitization. How to leverage digital means to better serve college students’ ideological and political education through cultural heritage resources has become a pressing issue of common concern in both educational and cultural circles^[5]. Currently, higher education institutions have established certain application foundations for utilizing digital cultural heritage resources, primarily through classroom teaching scenarios. Static digital resources account for 65% of these resources, including high-definition artifact images and historical scene reconstructions. Dynamic resources mainly consist of 5-10 minute short videos about cultural heritage, mostly used for knowledge point introductions or case supplements. Immersive digital resources like VR/AR are less widely applied, being mainly conducted in comprehensive universities or art colleges

equipped with VR/AR devices, primarily as ideological and political practice courses or specialized lectures, rather than integrated into regular ideological and political education curricula^[6].

The digitization of cultural heritage provides a new resource carrier and practical path for college students ‘ideological and political education’^[7-8]. The goal is to guide students to strengthen national pride, cultural self-confidence and deepen their identification with socialist core values through knowledge and skills of cultural heritage and project research. Specifically, it includes the following three aspects: one is to carry forward the national spirit, help students recognize the excellent tradition of national culture through systematic study of intangible cultural heritage, establish national self-esteem and self-confidence, and strengthen national cohesion; The second is to enhance the sense of national identity and social responsibility, strengthen students ‘understanding of intangible cultural heritage social value with the help of intangible cultural heritage knowledge education, promote the inheritance of cultural diversity, and further enhance the sense of national identity and social responsibility; Third, shape mainstream values, guide students to establish correct world outlook and outlook on life with the help of cultural connotation of intangible cultural heritage, and firmly practice socialist core values^[9]. This study intends to systematically analyze the current development status of intangible cultural heritage digitization in colleges and universities from four aspects: resource base and content evaluation, teaching mode and teacher ability, practice platform and participation experience, ideological and political connotation and cultural identity, and put forward countermeasures and suggestions to help cultural heritage spread more digitally in colleges and universities, so as to make college students form firm ideals and beliefs^[10].



Figure 1. Digital Display of Cultural Relics

2. Research technique

2.1. Subject investigated

The research subjects of this paper are undergraduate students from five universities in Zhejiang Province, China (2022 cohort to 2024 cohort). The five universities are: Zhejiang Sci-Tech University, Zhejiang University of Science and Technology, Zhejiang University of Media and Communications, and Ningbo Vocational & Technical University. Randomized questionnaires were conducted

among the university students.

A total of 358 questionnaires were collected. After excluding 22 duplicate responses from the same IP address and 31 incomplete questionnaires, 305 valid responses were obtained, representing an 85.2% response rate. Among the valid responses, 171 respondents (56.1%) were male and 134 (43.9%) were female, indicating a slight male predominance in the sample. By academic year distribution: Junior students accounted for the largest group at 134 (43.9%), followed by freshmen (95,31.1%), while sophomores formed the smallest cohort at 76 (24.9%).

2.2. Research tools

Questionnaire: This survey primarily employs a five-point Likert scale (1=strongly disagree, 5=strongly agree)^[11]. Higher scores indicate stronger agreement, with options positioned further back on the scale corresponding to greater consensus. A mean score above 3 indicates that the majority of respondents lean toward agreement. The questionnaire covers four aspects: digital resource library and content evaluation of cultural heritage, teaching mode and teacher competency, practice platform and participation experience, ideological connotation and cultural identity, with a total of 12 questions^[12].

Analysis method: SPSS 21.0 was used to describe and calculate the data of valid questionnaires, correlation analysis and regression analysis^[13].

3. Results

3.1. Descriptive statistical analysis

According to the survey results, the average values for resource repository and content evaluation were 2.698 (standard deviation =1.095), teaching model and teacher competency were 2.680 (standard deviation =0.974), practical platform and participation experience were 2.795 (standard deviation =1.054), while ideological connotation and cultural identity averaged were 2.717 (standard deviation =0.991). Detailed data are presented in **Table 1**.

3.2. Correlation analysis

As shown in **Table 2** below, the pairwise correlations between variables are statistically significant ($p < 0.05$), marked with asterisks to indicate significant relationships. All variables demonstrate positive correlations with coefficients greater than 0. Specifically, the resource repository and content evaluation showed significant positive correlations with teaching models and teacher competencies ($r = 0.324$), the practical platform and participation experience ($r = 0.334$), as well as ideological connotation and cultural identity ($r = 0.453$). Teaching models, teacher competencies, and practical platform-participation experience also exhibited significant positive correlations ($r = 0.279$), while ideological connotation and cultural identity maintained significant positive

Table 1. Descriptive statistics

	average value	standard error	Number of cases
Resource library and content evaluation	2.698	1.0950	305
Teaching mode and teacher ability	2.680	0.9736	305
Practice platform and participation experience	2.795	1.0543	305
Ideological Connotation and Cultural Identity	2.717	0.9912	305

Table 2. Correlation analysis results among dimensions (N=305)

variable	1	2	3	4
1. Resource base and content evaluation	1			
2. Teaching mode and teacher ability	0.324**	1		
3. Practice platform and participation experience	0.334**	0.279**	1	
4. Ideological connotation and cultural identity	0.453**	0.384**	0.346**	1

Note:** $p < 0.01$

correlations ($r=0.384$). Furthermore, practical platform-participation experience and ideological connotation and cultural identity demonstrated consistent significant positive correlations ($r=0.346$).

3.3. Regression analysis

The beta coefficient represents the regression parameter, with the significance P-value serving as the benchmark for statistical significance. When the independent variable's P-value is below 0.05 (indicating statistical significance at the 5% level), it demonstrates valid statistical validity. Furthermore, the beta coefficient value (positive values indicate positive effects while negative values indicate negative effects) reveals the directional influence of the

independent variable on the dependent variable.

The R square value of model 3 in the table below is 0.294, which means that the three independent variables of “resource bank and content evaluation”, “teaching mode and teacher ability” and “practice platform and participation experience” can jointly explain 29.4% of the change of the dependent variable “ideological connotation and cultural identity”.

Based on the F-test results in Tables 4 and 5, the model demonstrates significant overall fit ($F=41.870$, $p=0.000 < 0.001$), confirming the validity of the regression model. Additionally, multicollinearity tests revealed that the Variance Inflation Factor (VIF) values for the three independent variables were 1.203, 1.160,

Table 3. Model Summary

model	R	R square	Adjusted R square	Error in standard estimate
1	0.543a	0.294	0.287	0.8367

a. Predictive variables: (constant), practice platform and participation experience, teaching model and teacher competence, resource bank and content evaluation

Table 4. ANOVA

model		quadratic sum	free degree	mean square	F	conspicuousness
1	regression	87.941	3	29.314	41.870	0.000b
	residual	210.731	301	0.700		
	amount to	298.672	304			

a. Dependent variable: ideological connotation and cultural identity

b. Predictive variables: (constant), practice platform and participation experience, teaching model and teacher competence, resource bank and content evaluation

Table 5. Coefficient

model	Uncorrelation coefficient		Standardization factor	t	conspicuousness	Correlation statistics	
	B	standard error	Beta			tolerance	VIF
(constant)	0.845	0.178		4.736	0.000		
1 Resource library and content evaluation	0.290	0.048	0.320	6.027	0.000	0.831	1.203
Teaching mode and teacher ability	0.235	0.053	0.231	4.434	0.000	0.862	1.160
Practice platform and participation experience	0.165	0.049	0.175	3.345	0.001	0.856	1.168

a. Dependent variable: ideological connotation and cultural identity

and 1.168 respectively, all well below the 5% threshold. With all VIF values exceeding 0.8, this indicates no multicollinearity issues in the model.

4. Discussion

4.1. Analysis of the development status of cultural heritage in colleges and universities

As shown in **Table 1**, the mean values of all variables are below the theoretical median by 3 points with large standard deviations. This indicates that participants generally show low agreement with these metrics, with evaluations tending between “somewhat inconsistent” and “average”. These findings reflect the low overall acceptance of cultural heritage digitization in higher education institutions, highlighting issues such as incomplete digital repositories, lack of established digital teaching models, insufficient teacher competencies, and inadequate practical platforms.

4.2. Analysis of factors affecting the digital development of cultural heritage in colleges and universities

The regression coefficient β value of “Resource Repository and Content Evaluation” is 0.320 ($t=6.027$, $p=0.000<0.001$), indicating its significant positive impact on ideological connotation and cultural identity. Expanding the Digital Resource Library of Cultural Heritage is helpful for colleges and universities to improve the educational effect. Currently, most cultural heritage digitization resources used by universities rely on external public platforms rather than establishing dedicated ideological and political education resource repositories. Resource supply remains fragmented: existing public platform resources predominantly focus on artifact displays and historical background introductions, lacking operations for knowledge point filtering and recombination in ideological courses. They also fail to accurately align with core ideological education components such as moral cultivation, patriotism, and socialist core values. In terms of resource types, over 80% of available materials consist of static images, text, and short videos, while innovative digital resources like VR immersive experiences, interactive digital stories, and virtual simulation practices remain scarce.

The regression coefficient β value of “teaching model and teacher competence” is 0.231 ($t=4.434$, $p=0.000<0.001$), indicating a significant positive impact on ideological connotation and cultural identity. Improving teachers’ digital teaching ability of cultural heritage is helpful for colleges and universities to improve their educational effect. Currently, the digital literacy and teaching capabilities of ideological and political education teachers in universities fail to meet the demands of deep application of cultural heritage digital resources. From a technical perspective, most teachers only possess basic skills in resource playback and simple editing operations, lacking familiarity with more complex technical skills such as VR equipment debugging and interactive digital resource manipulation. Some older teachers abandon using digital panoramic views and virtual simulations of cultural heritage due to cumbersome operational procedures; while younger teachers, though technically proficient, lack the ability to integrate technology with ideological and political education design.

The regression coefficient β value of “practical platforms and participatory experiences” is 0.175 ($t=3.345$, $p=0.001<0.01$), demonstrating a significant positive impact on ideological connotation and cultural identity. Increasing the investment in the digital platform of cultural heritage will help colleges and universities to improve the educational effect. Currently, universities lack sufficient digital platforms for ideological education in cultural heritage studies, with limited functionality that fails to meet students’ practical needs. Most existing platforms are resource display systems offering only browsing of digital cultural heritage materials, preventing students from conducting substantive practical activities. Regarding practical functions, students cannot effectively integrate digital cultural resources with ideological education through these platforms, as there’s inadequate connection between online and offline practices. Many institutions have not established digital platforms for showcasing and evaluating practical achievements. After participating in offline cultural heritage field trips, students struggle to organize their experiences and share ideological insights through digital platforms, resulting in a disconnect between digital practice and ideological education, thus failing to form a complete educational practice chain.

5. Discussion

5.1. Building a digital ideological and political resource bank for cultural heritage

Colleges and universities should take the lead in establishing a tripartite cooperation mechanism between universities and local enterprises, and jointly build an exclusive ideological and political resource library with local cultural and tourism departments, museums and digital technology enterprises. Organize ideological and political teachers to screen basic resources from digital Forbidden City, digital Dunhuang and other platforms according to ideological and moral cultivation, patriotism education, socialist core values and other modules according to the curriculum outline, and then combine museum researchers to carry out ideological and political processing on resources. Develop new digital resources suitable for classroom, edit VR exhibition of more than 30 minutes in museum into teaching video of about 15 minutes, set pause node at key scene, and think about how to reflect the dedication spirit of revolutionary ancestors in combination with this scene. At the same time, a quarterly update mechanism shall be established. A group shall be set up by ideological and political teachers and cultural heritage research experts to update the contents of the resource base quarterly according to the changes in the syllabus and the new achievements of red culture research, so as to ensure that the resources meet the teaching needs at any time.

5.2. Building a new model of digital teaching

Starting from optimizing the teaching process, we promote the deep integration of digital resources with classroom activities. When preparing lessons, teachers need to design a complete process of resource introduction, inquiry discussion, and summary deepening. In terms of teaching organization, we shift towards student-led interactions. The online ideological and political education platform for universities should arrange tiered tasks based on digital resources: basic-level tasks can require students to watch digital resources on cultural heritage digitization techniques and write reflections; advanced-level tasks can require students to create 5-minute ideological and political themed PPTs based on digital resources. An online discussion section should be established where teachers weekly post topics like

“Understanding Chinese Traditional Cultural Confidence Through Ancient Architecture Digital Resources” in group chats, encouraging students to upload screenshots of resources and share their perspectives. A cross-course collaboration mechanism should be established, with instructors of courses such as China’s Modern History Outline and Ideological and Moral Education organizing 2-3 collective lesson planning sessions each semester. These sessions should focus on common themes like Silk Road culture and the spirit of the Red Base Areas, where teachers design teaching content from their own perspectives. By integrating resources and tasks through online platforms, a complete chain is formed to facilitate students’ interconnected understanding of ideological and political education in cultural heritage.

5.3. Improve teachers’ digital literacy and teaching ability

To address the shortage of teachers’ capabilities in interpreting cultural resources and designing teaching materials, an interdisciplinary advisory team has been established. Comprising leaders in ideological and political education, cultural heritage research experts, and digital education specialists, this team conducts monthly thematic seminars focusing on extracting ideological-political value from digital cultural resources and transforming them into teaching materials. The team guides educators in identifying educational dimensions such as moral cultivation and patriotism from digital cultural resources, designing teaching processes that include resource introduction, problem exploration, and summary reinforcement. A “one-to-one” mentoring system has also been implemented, pairing young teachers with strong digital teaching skills to experienced educators in weaker areas for regular exchanges on resource selection methods and classroom interaction design techniques. Furthermore, digital teaching competence is incorporated into annual performance evaluations, requiring teachers to utilize at least three different types of digital cultural resources in their teaching each semester, submitting lesson plans and classroom implementation records. This initiative aims to motivate teachers to proactively enhance their digital teaching capabilities.

5.4. Expand the practice platform of digital ideological and political education

Collaborating with local cultural tourism authorities and red culture heritage sites, universities have developed a multifunctional digital practice platform. The platform comprises three core modules: resource integration, practical implementation, and achievement showcase. The resource integration module systematically aggregates digital assets including: digital exhibition halls from revolutionary memorial museums, instructional videos by cultural heritage inheritors, 3D models of historical sites, and digital archives of historical events. These materials are categorized under themes such as red culture research and the digital preservation of cultural heritage, enabling students to access resources tailored to their specific needs. After participating in cultural heritage field trips, students can upload their field records, photos, and reflections through the platform, forming a seamless closed-loop practice that integrates digital engagement with real-world experiences.

6. Conclusion

Excavating, sorting out and refining the ideological and political education resources contained in cultural heritage and giving full play to its educational function are the inevitable choice for colleges and universities to implement “cultural people” with high quality. Digitalization provides a new resource carrier and practice path. From the perspective of “thinking politics”, facing the current development dilemma, enriching the actual effect of ideological and political teaching in colleges and universities has become the direction of education and teaching reform in colleges and universities. Improving teachers’ digital literacy and teaching ability is the key support for effective application of resources; expanding multifunctional digital practice platform can realize online and offline practice coordination, perfect education chain, make the ideological and political connotation such as family feelings and craftsman spirit contained in cultural heritage more efficiently transmitted to students, and help college students form firm ideal belief and correct value concept.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Svensson M, 2011, “Cultural heritage protection in the people’s republic of China.” *Making law work: Chinese laws in context*, 225.
- [2] Khan N A, Shafi S M, Humma A, 2018, “Digitization of cultural heritage: Global initiatives, opportunities and challenges.” *Journal of Cases on Information Technology (JCIT)* 20(4): 1-16.
- [3] Pavlidis G, 2007, “Methods for 3D digitization of cultural heritage.” *Journal of cultural heritage* 8(1): 93-98.
- [4] Sotirova K, 2012, “Digitization of cultural heritage—standards, institutions, initiatives.” *Access to digital cultural heritage: Innovative applications of automated metadata generation*, 23-68.
- [5] Khan N A, Shafi S M, Humma A, 2018, “Digitization of cultural heritage: Global initiatives, opportunities and challenges.” *Journal of Cases on Information Technology (JCIT)* 20 (4): 1-16.
- [6] Guidi G, Bernard D, 2020, Frischer. “3D digitization of cultural heritage.” *3D imaging, analysis and applications*. Cham: Springer International Publishing. 631-697.
- [7] Redweik P, 2017, “Digital preservation of cultural and scientific heritage: involving university students to raise awareness of its importance.” *Virtual Archaeology Review* 8 (16): 22-34.
- [8] Shimray S R, Chennupati K R, 2019, “Cultural heritage awareness among students of Pondicherry University: A study.” *Library Philosophy and Practice*, 0: 1-10.
- [9] Çağırkan B, Günal B, Hale T, 2021, “The perception of leisure time and concrete historical and cultural heritage awareness among university students.” *Gümüşhane Üniversitesi Sosyal Bilimler Dergisi* 12 (3): 914-922.

- [10] Kafadar T, 2021, "Cultural Heritage in Social Studies Curriculum and Cultural Heritage Awareness of Middle School Students." *International Journal of Progressive Education* 17 (2): 260-274.
- [11] Pace C R, 1984, "Measuring the quality of college student experiences. An account of the development and use of the college student experiences questionnaire."
- [12] Gonyea R M, 2003, "College Student Experiences Questionnaire: Norms for the Fourth Edition." College Student Experiences Questionnaire Assessment Program (NJ1).
- [13] DeCoster J, Heather C, 2004, "Data analysis in SPSS."

Publisher's note

Whioce Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.