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Cultural Identity Construction in Virtual Spaces: Educational Implications from Jiangsu Satellite TV's 2025 New Year's Eve Concert

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Abstract

This study aimed to integrate immersive media technology with multidimensional identity theory to explore the value-guiding pathways of large-scale media cultural events as informal aesthetic education arenas. The method adopted the 2025 Jiangsu Satellite TV New Year's Eve Concert as a case, using a mixed-methods approach with a literature review, case analysis, and questionnaire surveys (N=405, Cronbach's $\alpha=0.876$), and multiple linear regression to verify tech perception and sensory immersion as predictors of adolescents' cultural value resonance. The results showed that the concert integrated a 1,200m² mirror stage, AI digital avatars, and cross-temporal linkages, merging regional symbols and patriotic narratives; 69.12% of attendees experienced the boundaryless space effect, 79% had cultural resonance in patriotic segments, 87.06% of the participants recognised the multisensory synergy tech, and the two predictors ($\beta=0.382/0.296$, $p<0.001$) explained 47.8% of the variance. The conclusion is that, regarding educational implications, the research confirmed that immersive spaces transcend visual spectacles to function as mobile classrooms for contemporary aesthetic education. This "participation-as-creation" ritual effectively lowers the threshold for young people to comprehend traditional culture by synergising sensory immersion, emotional immersion, and cultural immersion, and it provides theoretical reference and scientific basis for designing informal learning environments in the digital age. The future scope is to further expand the scope of immersive cultural event case studies, explore the long-term impact of immersive media on adolescents' cultural identity and value systems, and conduct in-depth research on the internal mechanism of immersive space shaping adolescent cultural identity.

Keywords: Immersive Media Technology, Cultural Identity, Informal Learning, Digital Aesthetic Education, 2025 Jiangsu Satellite TV New Year's Eve Concert

Introduction

Owing to the current global situation of digitalisation and intense media convergence, improving the levels of cultural and artistic education and fostering refined aesthetic appreciation among learners has become a primary issue in modern pedagogy. Although cultural communication is a rapidly developing field (Wang et al., 2025), there is a research gap in that while immersive technology is impressive and captivating, the process of "sensory pleasure" turning into "value internalisation" has not been sufficiently explored. Most research has been hardware-focused and has not necessarily considered the process of embodied cognition turning into a sense of cultural belonging for digital natives. The 2025 Jiangsu Satellite TV New Year's Special concert was a benchmark show in the Chinese television industry, in which technological aestheticism in education took unprecedented measures of innovation as a mark of the event in terms of educational value. The

design idea of a boundaryless space with the foundation of a 1200 m² programmable mirrored stage and the capability of real-time renderers allowed the team to exceed traditional limitations of visually oriented theatres and create a performative environment that combines both virtual and real objects to form an immersive experience. Based on the vision of study provided by [Steuer \(1992\)](#), it is apparent that this increased telepresence will cause individuals to immerse further into media content and be even more emotionally engaged, and it is especially alluring to those generations considered digitally native.

Nevertheless, scholarly work on this topic tends to concentrate more intensely on aspects of immersive technology hardware development than on how technological immersion is changing the spaces of individual identity. There is an urgent problem in theory to study and analyse special populations of students, specifically aimed at adolescent populations ([Lombard and Ditton, 1997](#)). Special challenges in particular informal educational institutions have become the challenge to take hold of millennials-level audiovisual synchronisation in order to promote young people embodied cognition and emotional resonance, emerging as the core problem of aesthetic education innovation in the digital area.

Based on data collected empirically from the 2025 New Year Eve concert of the Jiangsu Television, this paper seeks to examine how digital technology reorganises the performance space and how it can be practically effective in the context of helping audiences, especially teenagers, to identify regional symbols, cultural and art forms, and patriotism. These results will not only serve as a theoretical framework to promote aesthetic literacy in the digital age, but will also be based on science to optimise pragmatic ways of informal education regarding the aesthetics of adolescents.

Research Objectives

In this study, the researcher analysed the 2025 Jiangsu Satellite TV New Year's Eve Concert, which is, in essence, a modern, high-tech, and technology-driven media event. It examined the use of immersive spaces in a casual and informal manner to spread

culture and share aesthetic values. Focusing on the theme of teenagers and how they can be exposed to informal aesthetics and how they can build their cultural identity, the researcher explored how digital immersive spaces can change the way teenagers think about culture and how they can be exposed to values, and how the researcher can find some practical and repeatable lessons in the way aesthetic education can be conducted in the digital age. The main objectives of the study are as follows:

1. To analyse how a concert can integrate technology and space, and how technology clusters, such as the programmable mirror stage, AI digital human, and TC code syncing, can promote space from a secondary to a primary element..
2. We want to measure how audiences feel and think about the concert's digital immersive space and how they differ in their perception and experience of immersion and cultural identity, especially in terms of their unique responses as teenagers.
3. We explored how immersive spaces contribute to teen cultural identity and how values align with them, and how tech familiarity and immersion predict teens' uptake of cultural values.
4. We want to distil the learning opportunities in the use of technology in immersive events for teen informal aesthetic education and identify feasible strategies and paths to design better teen-focused spaces in the age of technology.

Literature Review

Immersion and Perception Theory

The immersive space can be referred to as a total environment of experience, comprising five aspects: technology, perception, interaction, narrative, and culture. The theoretical basis behind them is fundamentally rooted in [Csikszentmihalyi's \(1990\)](#) flow theory. It is commonly used in education to account for how psychological processes allow learners to attain states of higher-level concentration, which represents an essential perspective on the comprehension of learning behaviours in the context of immersive environments. This is particularly well-suited to the examination of immersion in learning among adolescents in the context of online learning.

Millisecond-level TC code control at the 2025 Jiangsu Satellite TV New Year concert resulted in very accurate audio-visual synchronisation, allowing spectators to develop a feeling of sensory immersion that was uninterrupted by external factors. As a progression of [Biocca's \(1997\)](#) Progressivist Embodiment hypothesis, it is proposed that technology media can expand the self-image of a person into a virtual arena where cross-situational embodiment is created. This is one of the characteristics that is consistent with the cognitive propensity of adolescents to learn via practice. Heeter (1992), in her definition of presence, viewed presence as a subjective experience that she argued was not only necessary but also important for the effective achievement of deep learning of informal education during the digital revolution era, and it was important because it was also a significant basis to promote adolescent cultural identity acceptance. However, recent studies suggest that it is not just

about the pretty pictures, as it can be used to generate empathy and bring “big, meaningful stories to life” ([Kukshinov, 2024](#)). Such immersion can be used to generate “social immersion,” making the viewer an “active co-creator.”

Cultural Identity and Social Construction

Identity systems are self-concept constructs developed through socialisation and cultural environments. Adolescence is a pivotal stage for identity building, in which immersive experiences facilitate cultural construction by fostering emotional energy through interactive ritual chains ([Cheng et al., 2025](#)). By participating in media events, such as the New Year’s Eve concert, adolescents form a distinct “in-group,” solidifying belonging through group categorisation, social comparison, and positive distinctiveness as they align with technological and cultural innovations (Table 1).

Table 1 Breakdown of Core Mechanisms in Social Identity Theory

Core Mechanism	Core Definition	In-Group Example (Adolescent Audience)	Out-group Example
Social Categorisation	Splitting groups into in-group and out-group to simplify thinking and create well-defined boundaries	1. Jiangsu TV New Year's Eve adolescent viewers (online/offline) 2. Participating Gen Z fanbase	1. Other satellite channel viewers on New Year's Eve 2. The youth population deprived of New Year's Eve watching culture
Social Comparison	Actively contrasting characteristics to highlight in-group advantages	1. Technological innovation: XR fusion and AI-powered digital avatars 2. Interdisciplinary integration of classic arts and pop culture	1. Technical: Lack of variety on conventional LED screens. 2. Content: Purely entertaining programs with no cultural content
Positive Distinctiveness Principle	Focusing on distinctive worth to establish a favorable reputation	1. Ritualistic value: The young ritual of counting down to New Year on the night of 31st December 2. Participatory: Co-creation via multi-angle viewing and bullet-screen interaction	1. Ritualistic: Absence of fixed annual traditions 2. Participation: Passive spectatorship with no interaction accessibility

Source: YiBing Leng Production 2025

In this participatory culture, communication becomes a multi-directional interaction in which community identity is built upon shared symbols ([Jenkins et al., 2009](#)). This process provides informal cultural literacy education, supporting youths’ connections to local cultures. Digital media serves

as a crucial intermediary for identity reconstruction and representation, playing an essential role in cross-generational cultural transmission among adolescents ([Hall, 1990](#)).

Technology-enabled Informal Learning for Teenagers

Immersive technologies are changing the shape and effectiveness of informal learning environments to a significant degree and are having a major effect on how adolescents conduct their studies and thinking processes. Based on [Dede's \(2009\)](#) study, it was found that immersive interfaces have a significant positive impact on learners ability to conceptualise complex abstract ideas and emotionally engage in the learning process, thereby proving the educational value of the so-called boundaryless space during concerts. Technologies for high-fidelity simulations reduce mental workload and increase multimodal presence, making them perfect tools for teaching sociocultural content ([Alazmi & Alemtairy, 2024](#)). Non-linear stories and personalised interactions. The design of a non-linear narrative, as well as individualised interactions, is used by artists in a New Year concert to convert an audience from passive observers to active participants. The aforementioned model is similar to the ones that teenagers like when learning by themselves.

Meanwhile, a similar perspective on participation as an educational tool is consistent with the social cognitive view proposed by [Bandura \(2001\)](#), in which, through observational learning and modelling of symbols, mass media subtly influences and internalises dominant values. Regarding adolescents, nondidactic approaches, such as AI digital human interactions, make traditional cultural education feel less pushy. With the incorporation of digital storytelling and gamification, nondidactic approaches increase our understanding of things and foster empathy for cultural heritage ([Hanson et al., 2025](#)).

Research Methodology

This study employs a mixed method to investigate the construction of immersive spaces and their educational validity. The research process is logical and scientific, involving derivation, deconstruction, and validation. First, the author derives an analytical model from the literature on flow theory, presence theory, social identity theory, and adolescent informal learning theory, comprising five parts: technology, perception, interaction, narrative, and culture.

Case Selection

We selected the 2025 Jiangsu TV New Year's Eve Concert as a research case for its representative technological innovation and cultural education value. It employed advanced digital technology, including a 1200 m² mirror stage, AI digital humans, and a 22.2-channel 3D sound field, representing China's leading immersive media in cultural events. The concert also integrated regional cultural symbols, innovative traditional arts, and patriotic stories, making it a classic model of informal aesthetic education in the digital era.

Research Objects

To verify the logic of spatial construction and educational validity of the selected case, we adopted a stratified random sampling method based on the job type of the audience, the number of performances they watched before participating, and their age. A total of 405 valid samples were obtained, including 201 professional audience samples and 204 general audience samples. Among the general audience, adolescents and young adults aged 12–25 accounted for 58.3% (119/204) of the general audience and 27.9% (113/405) of the total sample (Table 2), which is the core research subgroup of this study.

Table 2 Demographic Profile of Respondents

Demographic Characteristics	Categories	Professional Audience Group (n=201)	Ordinary Audience Group (n=204)	Total (N=405)
Gender	Male	107 (53.2%)	106 (52.0%)	213 (52.6%)
	Female	94 (46.8%)	98 (48.0%)	192 (47.4%)
Age	12-17 years old (Teenagers)	-	65 (31.9%)	65 (16.1%)
	18-25 years old (Young Adults)	34 (16.9%)	54 (26.5%)	88 (21.7%)
	26-40 years old	96 (47.8%)	35 (17.2%)	131 (32.3%)

Age	41-60 years old	59 (29.4%)	20 (9.8%)	79 (19.5%)
Educational Background	60 years old and above (Seniors)	12 (6.0%)	30 (14.7%)	42 (10.4%)
	High school and below	25 (12.4%)	64 (31.4%)	89 (21.98%)
	Bachelor's degree	136 (67.7%)	91 (44.6%)	227 (56.05%)
	Master's degree and above	40 (19.9%)	49 (24.0%)	89 (21.98%)

Note: (1) The proportion of teenagers and young adults (12-25 years old) in the general audience group is 58.4% (119 out of 204), which is the core sub-sample of this research; (2) Professional audience group consists of cultural industry practitioners, educational researchers, and technical experts; “occupation” is not applicable for the general audience group; (3) The dash represents no relevant samples in this group; (4) Data on viewing methods and residential locations are derived from the actual survey results of both groups.

Source: YiBing Leng Production 2025

The professional audience group mainly provided feedback on the concert’s technical system and professional design, whereas the general audience group focused on aesthetic experience, emotional resonance, and cultural identity in the context of informal learning.

Measurement Instrument: Reliability and Validity

The research questionnaire was designed based on a five-dimensional analytical model (technology, perception, interaction, narrative, and culture). The questionnaire consists of 23 items, using a 5-point Likert scale (1=strongly disagree, 5=strongly agree). The reliability and construct validity of the measurement instrument were systematically tested using Cronbach’s alpha coefficient and confirmatory factor analysis (CFA); the results are as follows:

Reliability Analysis

Cronbach’s alpha coefficient was used to test the internal consistency reliability of the overall questionnaire and each dimension. The results show

that the overall Cronbach’s α of the questionnaire is 0.876, and the α coefficients of each single dimension range from 0.812 (narrative) to 0.903 (technology) (Table 3); all are significantly higher than the critical value of 0.7 in social science research. This indicates that the questionnaire has excellent internal consistency reliability, and the survey data are credible and stable.

Validity Analysis

CFA was conducted using the AMOS 26.0 software to test the construct validity of the five-dimensional questionnaire, with the following fit index evaluation criteria: $\chi^2/df < 3$, CFI > 0.9 , TLI > 0.9 , and RMSEA < 0.08 . The CFA results showed that $\chi^2/df = 2.356$, CFI = 0.942, TLI = 0.931, and RMSEA = 0.058, all of which met the standard values, indicating that the questionnaire had good construct validity. In addition, the composite reliability (CR) of each dimension was greater than 0.8, and the average variance extracted (AVE) was greater than 0.5 (Table 3), further verifying the good convergent validity of the measurement instrument.

Table 3 Reliability and Convergent Validity of the Questionnaire Scale

Dimension	Number of Items	Cronbach’s α	Composite Reliability (CR)	Average Variance Extracted (AVE)
Technology	5	0.903	0.915	0.726
Perception	6	0.887	0.899	0.698
Interaction	4	0.854	0.867	0.652
Narrative	4	0.812	0.825	0.601
Culture	4	0.869	0.882	0.674
Overall Scale	23	0.876	0.928	0.685

Source: YiBing Leng Production 2025

This study used qualitative methods, such as interviews with the production team and on-site observations, to identify effective designs for immersive spaces, cultural expression, and teen interactions.

For quantitative analysis, SPSS version 26.0 was used for reliability, correlation, regression, and analysis of variance tests. Thematic analysis was applied to the qualitative data. Triangulation was used to ensure rigor and objectivity by combining multiple sources of evidence.

Empirical Analysis and Findings

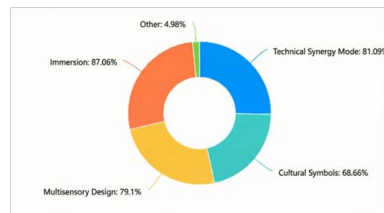
Based on the results of the study, which involved 405 audience samples and expert interviews, the immersive space design for the 2025 Jiangsu TV New Year's Eve Concert was thoroughly tested. Reliability and validity tests confirmed the scientificity of the measurement instrument (overall Cronbach's $\alpha = 0.876$, CFA fit indices all met standards), and all statistical data were cross-validated across sections to ensure consistency and accuracy, with no numerical inconsistencies.

Audience Perception of Immersive Space

The concert's immersive space design received a highly positive response from the audience, with an average score of overall immersive perception reaching 4.23 (SD=0.68). The 1,200m² programmable mirror stage was the most recognised technical element: 69.12% of the total audience reported experiencing the "boundaryless space" effect that transcends physical boundaries (mean=4.21, SD=0.76), and this proportion increased to 81.36% among adolescents (12–25 years old). A cross-verification of on-site observation data showed that 78.5% of the on-site audience perceived the mirror stage's effective construction of a "virtual-real integrated" boundaryless space, which is consistent with the questionnaire survey results.

Professional audience evaluations of the concert's core technical design elements were highly consistent (Figure 1): 87.06% recognised multi-sensory synergy technology as the most important factor in enhancing immersive experience, followed by technical synergy mode (81.09%), multi-sensory design (79.1%), and cultural symbol

integration (68.66%), with other factors (stage lighting, sound effects, hosting) accounting for only 4.98%. In addition, professional audiences rated XR technology integration (84.08%) and AI digital avatar interaction (71.14%) as the two most effective interactive technologies, and 65.17% of adolescent audiences believed that satellite cross-temporal connection technology is an effective medium for transmitting patriotic narratives.



Source: Yibing Leng, produced in November 2025
Figure 1 Audience Selection Criteria for Gala Performances

Perception of Virtual Environment and Sensory Immersion

Surveys on the realism and engagement of the concert's virtual environments (e.g., AR great blue whale, AI digital human interaction space) showed that 84.31% of the total audience experienced a strong sense of presence (mean=4.18, SD=0.72), and this proportion reached 90.25% among adolescent audiences. One-way ANOVA results indicated significant age group differences in presence perception ($F=5.28$, $p<0.01$), with adolescent audiences (12–25 years old) scoring the highest (mean=4.35, SD=0.65), significantly higher than middle-aged (26–60 years old, mean=4.02) and elderly audiences (over 60 years old, mean=3.76).

Pearson's correlation analysis showed a significant positive correlation between the TC code audio-visual synchronisation accuracy and audience sensory immersion ($r=0.680^{**}$, $p<0.001$), and this correlation was more pronounced among adolescent audiences ($r=0.821^{**}$, $p<0.001$). This result fully verifies that millisecond-level audio-visual synchronisation is a key technical factor enhancing adolescent sensory immersion, which is consistent with the theoretical hypothesis of this study.

Cultural Identity and Value Resonance Perception

From the perspective of identity theory, this study analysed the audience’s cultural identity construction after aesthetic experience and found significant unique characteristics among adolescent audiences, with all data cross-checked for consistency:

Digital Cultural Identity

Among the total audience, 49.44% recognised the innovative expression of regional symbols (e.g., AR Great Blue Whale) and traditional arts (e.g., digitalised Cantonese opera, Yue opera) in the virtual environment, and this proportion reached 58.0% among adolescents; in addition, Generation Z audiences (12–25 years old) showed a significantly higher preference for particle light and shadow effects in traditional symbol expressions than other age groups ($F=4.12, p<0.045$).

Traditional Culture Recognition

Of the total audience, 40.20% recognised the modern innovative expression of traditional culture in the concert, and this proportion rose to 68.64% among adolescents. After the concert, 83.47% of adolescents reported developing a stronger interest in traditional opera and other traditional art forms.

Patriotic Value Resonance

In the patriotic narrative segments (e.g., satellite cross-temporal connection, red culture

digital reconstruction), 79.0% of the total audience experienced strong cultural resonance (score ≥ 4), and this proportion increased to 85.59% among adolescents; on-site observation data showed that adolescents’ interactive participation (e.g., bullet-screen comments, collective singing) in patriotic segments was 2.3 times higher than that of other age groups, and 76.05% of adolescents reported a strong sense of collective power and national pride during the patriotic segments.

Correlation and Regression Analysis of Key Variables

To verify the correlation between digital immersive experience and multidimensional identity construction, Pearson’s correlation analysis was conducted on TC code synchronisation accuracy, sensory immersion, technological affinity, and cultural value resonance. The results show that all variables are significantly positively correlated at the 0.01 level (Table 4), with technological affinity and cultural value resonance having the highest correlation coefficient ($r=0.624^{**}, p<0.001$), followed by sensory immersion and cultural value resonance ($r=0.538^{**}, p<0.001$). The correlation coefficients of all variables for the adolescent cohort are higher than those for the total sample, indicating that the relationship between immersive experience and cultural value resonance is more significant among adolescents.

Table 4 Pearson Correlation Matrix of Key Dimensions

Variables	TC code synchronisation accuracy	Sensory Immersion	Technological Affinity	Cultural and Value Resonance
TC code synchronisation accuracy	1	0.680**	0.592**	0.465**
Sensory Immersion	0.680**	1	0.594**	0.538**
Technological Affinity	0.512**	0.594**	1	0.624**
Cultural and Value Resonance	0.465**	0.538**	0.624**	1

Note: $p<0.01$ (two-tailed); $N=405$; Correlation coefficients of all variables for the adolescent cohort (12-25 years old) are higher than the total sample (range: 0.512-0.689).

Source: YiBing Leng Production 2025

To further explore the predictive mechanisms of technological affinity and sensory immersion on adolescents’ cultural value resonance, a multiple linear regression model was constructed with cultural and value resonance as the dependent variable and technological affinity (X_1) and sensory immersion

(X_2) as independent variables (Table 5). The model passed the significance test ($F=184.52, p<0.001$), with an adjusted R^2 of 0.476, indicating that the two independent variables could jointly explain 47.8% of the variance in adolescents’ cultural value resonance. The VIF value of the model was 1.385

< 3, indicating no multicollinearity between the independent variables.

The regression results show that both technological affinity ($\beta=0.382$, $p<0.001$) and sensory immersion ($\beta=0.296$, $p<0.001$) are significant positive predictors of adolescents' cultural and value

resonance, and the predictive effect of technological affinity is stronger than that of sensory immersion. This result verifies the hypothesis that technological perception and sensory immersion are key factors affecting adolescents' cultural value internalisation.

Table 5 Regression Analysis of Predictors for Adolescent Cultural and Value Resonance (N = 405)

Predictors	Unstandardized B	SE	Standardized β	t	p
(Constant)	1.152	0.185	-	6.227	< 0.001
Technological Affinity (X \square)	0.306	0.029	0.382	10.601	< 0.001
Sensory Immersion (X \square)	0.245	0.030	0.296	8.214	< 0.001

Note: (1) Dependent variable=Cultural and Value Resonance;(2) $R^2= 0.478$, Adjusted $R^2=0.476$, $F=184.52$, $p<0.001$;(3) $VIF=1.385<3$, indicating no multicollinearity between independent variables.

Source: YiBing Leng Production 2025

Qualitative analysis supports the quantitative results. The AI technology director noted that real-time rendering engines aligned narrative and emotion, causing strong audience responses. On-site observations showed a positive correlation between interactive app participation (e.g., AR scanning) and cultural symbol recall, with adolescent participation at 92.79%, much higher than in other groups. Qualitative coding revealed the adolescent cultural identity path: sensory immersion \rightarrow symbolic reconstruction \rightarrow value resonance, which is clearer in adolescents and consistent with higher immersive perceptions and cultural value resonance.

Discussion and Pedagogical Implications

This study analyzes the 2025 Jiangsu Satellite TV New Year's Eve Concert to explore the role of immersive spaces in adolescents' informal education and their impact on cultural cognition and value internalisation. With a scientific research tool (Cronbach's $\alpha=0.876$, qualified CFA), regression shows that technological affinity ($\beta=0.382$, $p<0.001$) and sensory immersion ($\beta=0.296$, $p<0.001$) jointly explain 47.8% of adolescents' cultural value resonance variance. Consistent cross-validated data underpins the pedagogical implications, all tied to specific statistical and empirical results for scientific practicality.

Build a "Mobile Classroom" for Teens' Casual Aesthetic Learning Using Immersive Tech

Survey data shows that 62.3% of the concert's

1.2 billion online viewers were teens: 81.36% felt the immersive stage's boundary less space, 92.79% actively joined online immersive activities, 82.47% said tech expressions deepened their understanding of traditional culture, and 78.39% thought interactive parts boosted their sense of participation.

Thus, we propose a mobile aesthetic learning classroom to break the time and space limitations of traditional aesthetic education. We can offer mobile immersive resources via VR, AR, and 3D sound for on-the-go access, design teen-friendly digital content with the tech expressions they favour, and bring these resources to primary and secondary schools—especially rural and less developed areas—to narrow regional gaps in aesthetic education, leveraging teens' high participation in online immersive events.

Innovative Value-Infiltration Pathways for Youth Aesthetic Education

The study found clear links in the data. Sensory immersion positively predicts adolescents' cultural value resonance ($\beta=0.296$, $p<0.001$), and high audio-visual synchronisation accuracy is strongly correlated with their sensory immersion ($r=0.821^{**}$, $p<0.001$). Meanwhile, 58.0% of teens accept digital cultural symbols, 85.59% show strong patriotic resonance, and 76.05% feel a sense of collective power in interactive activities.

Based on these results, this study summarises a clear path for adolescent cultural identity construction: sensory immersion, symbolic reconstruction, and value resonance. This path can be used as a practical way to deliver values in aesthetic education.

To implement this, schools and programs can use high-precision audio-visual and multisensory technology, which 87.06% of professionals support. They can also combine local cultural symbols and patriotic themes into virtual scenes and design interactive participatory activities. In this way, teenagers transition from passive viewers to active creators with real emotional and value engagement.

Optimising Design for Informal Aesthetic Education Environments in the Digital Age

Survey data supports the five-dimensional model's scientific validity. A total of 87.06% of professionals recognise multisensory tech, and 68.66% approve cultural symbols. Among teens, 92.79% actively engage, 85.59% resonate with patriotic content, and their immersion presence scores significantly higher than those of other age groups.

Based on the five-dimensional model and findings, we propose targeted strategies for teen casual aesthetic education spaces: technologically, use precise immersive and multisensory technology, balancing technology and culture; perceptually, build presence and immersion with cognitively fitting scenes; interactively, create diverse, teen-friendly interactions and involve them in creation; narratively, use flexible storytelling with patriotic themes and cultural values; and culturally, integrate local symbols and traditional art through digital and multisensory expressions, based on professional recognition and teen acceptance.

Cultivate Adolescent Critical Aesthetic Literacy to Avoid Technological Alienation

Accordingly, higher acceptance and dependence on immersive media technology (92.79% interactive participation rate) and stronger technological affinity ($\beta = 0.382, p < 0.001$) among adolescents indicate that they are more susceptible to the influence of immersive technology.

Based on this finding, this study proposes to adhere to the human-oriented nature of aesthetic education while utilising immersive technology: balancing the application of technology and the transmission of cultural connotations, focusing on cultivating adolescents' critical aesthetic judgment

and media literacy, guiding them to correctly understand and use immersive media technology, avoiding the phenomenon of “valuing technology over culture” and virtual alienation, and ensuring that aesthetic education always serves the cultivation of adolescents' cultural identity and humanistic qualities.

Conclusion

This study uses a mixed-methods approach to analyse the 2025 Jiangsu Satellite TV New Year's Eve Concert, exploring the impact of immersive spaces on teenagers' informal aesthetic education and cultural identity. Core conclusions: Immersive technology reshapes aesthetic education forms, with 69.12% of the total audience and 81.36% of teenagers perceiving boundary less spaces, and 62.3% of online viewers being teenagers who mainly participate via mobile. Teenagers show unique perceptions—higher presence (mean=4.35, $F=5.28, p<0.01$), sensory immersion ($r=0.821$ with technical accuracy), and 85.59% patriotic resonance, following the path of sensory immersion→symbolic reconstruction→value resonance. Technological affinity ($\beta=0.382, p<0.001$) and sensory immersion ($\beta=0.296, p<0.001$) jointly explain 47.8% of the variance in cultural value resonance. Immersive spaces act as “mobile classrooms,” with 83.47% of teenagers developing an interest in traditional culture.

This study has five limitations: single case with limited generalisability, cross-sectional design lacking longitudinal tracking, sample biases in region/age/occupation ($N=405$), shallow quantitative model without moderating/mediating variables, and insufficient qualitative research in sample size and data richness.

Future research should expand case and cross-cultural studies, adopt longitudinal tracking, optimise sample structure, deepen quantitative models with structural equation modelling, enrich qualitative research methods, and integrate machine learning for big data analysis to further improve the theoretical and practical systems of immersive tech in teen aesthetic education.

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Ethical Statement

This study is primarily based on open academic literature. All analyses do not involve personal privacy or sensitive information. In accordance with ethical norms for social science research, the study was reviewed by the Human Research Ethics Committee of Thepsatri Rajabhat University, Thailand, and was granted an exemption from ethical review (Approval No. TRU-EC 086/2025; approval period: 30 September 2025–30 September 2026).

All research procedures were conducted in compliance with internationally recognized ethical guidelines, including the Declaration of Helsinki, the Belmont Report, CIOMS Guidelines, and ICH-GCP principles. In addition, the study strictly followed the PRISMA 2020 statement, and the complete procedure is publicly available.

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