

Development and Implementation of Educational Programs Based on Local Cultural Resources

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Abstract

Against the dual strategic backdrop of comprehensive rural revitalization and cultural heritage preservation, the creative transformation and innovative development of local cultural resources have become a pivotal issue in educational research and practice. Building upon Kolb's experiential learning theory, constructivist learning theory, and place-based educational theory, this study integrates the analysis, design, development, implementation, evaluation (ADDIE) model framework to develop a systematic curriculum design approach. It establishes a "four-stage cyclical model" for creating educational programs based on local cultural resources. The model comprises four interconnected, iterative phases: resource identification and assessment; curriculum objectives and content design; teaching methodologies and activity planning; implementation and evaluation. Using the "Red Footprints" educational program in Shangwang Village, Shaoxing City, Zhejiang Province as a case study, the research demonstrates the model's effectiveness through multi-source data collection and mixed-method analysis. Findings indicate that systematically designed curricula can transform local cultural resources into high-quality educational programs, significantly enhancing students' cultural awareness and sense of local identity. The "pre-trip - during-trip - post-trip" three-phase implementation framework proves effective for ensuring comprehensive engagement with the Kolb Learning Cycle. This study provides a replicable curriculum development paradigm and actionable guidelines for similar rural initiatives.

Keywords

Experiential learning, Local cultural resources, Rural revitalization, Study tour programs

Introduction

Under the dual strategic context of comprehensively advancing rural revitalization and cultural heritage protection, the creative transformation and innovative development of local cultural resources have become a significant topic. This is especially so in educational research and practice. Within the policy framework of China, the "Opinions on Promoting the Empowerment of Rural Revitalization through the Cultural Industry" explicitly incorporates this initiative into the overall strategy for comprehensive rural revitalization. This document encourages regions to explore effective pathways for synergistic development between the cultural industry and distinctive rural industries based on their unique cultural resources. As a vital bridge connecting school education and extracurricular learning, study tours are endowed with the dual mission of preserving cultural heritage and fostering rural

revitalization. Their curriculum-based development has become a key approach to implementing the educational principle of "integration of five types of education".

However, existing research exhibits significant gaps both theoretically and practically. At the theoretical level, experiential learning theory, constructivist learning theory, and place-based education theory form a theoretical triad for developing educational tourism programs. However, there remains a lack of systematic integration framework among them. The ADDIE model, as a classic tool for curriculum development, excels in systematic process management but fails to adequately address the intrinsic psychological mechanisms underlying learning. Kolb's experiential learning cycle outlines the learning progression of "concrete experience → reflective observation → abstract conceptualization → active experimentation", yet lacks actionable steps for

curriculum design. How to organically integrate systematic curriculum development processes with the inherent mechanisms of experiential learning? How to establish an operational model that combines “engineering rigor” with “learning science”? These questions remain a critical theoretical challenge.

Practically, current educational tourism programs that utilize red cultural heritage primarily focus on institutional settings such as museums and memorial halls. However, systematic research on curriculum development by rural stakeholders leveraging local red resources remains insufficient. Moreover, red-themed educational programs suffer from severe homogenization, with standardized formats like “listening to lectures, viewing exhibits, and taking group photos” leading to a prevalence of “revisiting sites without deep learning”. A complete operational chain - from resource assessment and curriculum design to outcome evaluation - still lacks implementation. As a unique local cultural resource carrying distinct historical narratives and political-cultural significance, the pathways for developing educational tourism programs centered around red cultural heritage remain inadequately explored, with the crucial bridge between abstract theories and replicable practical approaches yet to be bridged [1].

The dual theoretical and practical challenges outlined above urgently require resolution through in-depth case studies. Theoretically, this study aims to contribute at the intersection of heritage education, experiential learning, and curriculum development theory. By integrating the systematic framework of the ADDIE model with Kolb’s experiential learning cycle, it establishes a “four-stage cyclical model” for developing educational programs based on local cultural resources. This provides a verifiable framework for operationalizing experiential learning theory while enriching the localized theoretical framework of heritage education in rural contexts. Practically, using Shiwang Village’s “Red Footprints” educational program as a case study, the research explores a comprehensive pathway from resource analysis to curriculum design and implementation evaluation. It offers a replicable paradigm and actionable guide for similar rural initiatives to address the dual challenges of underutilized red cultural resources and homogenized educational programs [2].

Literature review

Research on local cultural resources

(1) Concept definition

Local cultural resources refer to the collection of tangible and intangible cultural heritage elements developed within a specific area, possessing both cultural and educational value. United Nations Educational, Scientific and Cultural Organization (UNESCO) defines cultural heritage as “sites, architectural complexes, and monuments with historical, artistic, scientific, social, or cultural significance”. It also includes “various practices, expressions, knowledge, and skills recognized by communities as integral components of their cultural heritage”. In an educational context, local cultural resources serve not only as vehicles for cultural transmission but also as learning materials. Through direct engagement with these resources, students achieve knowledge construction, skill development, and value internalization. From the perspective of curriculum design for educational tours, local cultural resources can be categorized into four types: historical sites, cultural venues, intangible cultural heritage, and natural - humanistic landscapes. Each type serves distinct educational purposes: historical sites foster historical understanding and critical thinking, while intangible cultural heritage resources are particularly conducive to hands - on activities and creative learning experiences.

(2) The educational value of local cultural resources

The educational value of local cultural resources has been widely validated by international research. Place-based education (PBE) studies have theoretically elucidated the educational mechanisms inherent in local cultural resources. Sobel argues that PBE effectively enhances students’ environmental awareness, civic responsibility, and academic engagement by grounding learning within their actual community contexts. Further research demonstrates that in rural schools, PBE integrates local history and environmental management directly into curricula through annual field trips, knowledge fairs, and long-term projects. This transforms classrooms into dynamic spaces where students learn through hands-on interaction with the environment.

In China, the educational value of local cultural resources has also garnered significant attention. In recent years, scholars have explored various approaches

and outcomes for integrating these resources into curricula from multiple perspectives. Research indicates that incorporating local cultural elements into teaching significantly enhances students' cultural understanding, critical thinking skills, and cultural awareness. These studies collectively demonstrate that local cultural resources serve not only as objects of cultural heritage preservation but also as effective tools for improving educational quality.

Research on the development of study tour courses

(1) The concept and characteristics of study - tour courses

A study tour curriculum is a form of education that extends learning from the classroom into real-world contexts. Its core characteristics lie in “learning within authentic settings” and “constructing knowledge through experiential engagement”. In international literature, the concept of “study tour” overlaps with terms such as “experiential learning”, “place-based education”, and “outdoor education”. But its distinctive feature lies in emphasizing “contextual transition”. This transition refers to students moving from familiar classroom environments to unfamiliar cultural or natural settings, and they gain new learning experiences through this dual physical and psychological shift [3].

(2) Theoretical foundations for the development of study - research courses

The primary theoretical frameworks underlying the development of educational research programs include experiential learning theory, constructivist learning theory, and contextual learning theory.

The theory of experiential learning was systematically developed by Kolb in his seminal work *Experiential Learning: Experience as a Source of Learning and Development*, and has had the most profound impact. This theory describes learning as a four-stage cyclical process: concrete experience - reflective observation - abstract conceptualization - active experimentation, providing a fundamental framework for designing educational research-based curricula [4].

Through a systematic review of 60 studies, Morris revised Kolb's model, proposing that “concrete experience” should be defined as specific events occurring within genuine, non-artificial contexts rather than any arbitrary experiences learners might encounter.

This definition offers a more precise operational specification for “real-world scenarios” in such curricula. Kolb further expanded the theory by introducing the concept of the “learning space”, which provides a framework for understanding the interaction between students' learning styles and institutional learning environments. Kolb's model has been further extended from a neuroscience perspective, demonstrating that experiential learning activates multiple brain regions and facilitates deep learning [5,6].

The contextual learning theory emphasizes that learning occurs within specific social and cultural contexts, and knowledge cannot be truly understood when separated from its source and application settings. This theory provides a theoretical foundation for the necessity of the “field experience” component in educational field trips. Students can only grasp the dynamic significance of local cultural resources within authentic cultural environments. The contextual model of learning further highlights that museum-based learning involves interactions among three contexts: individual, physical, and sociocultural. This holistic perspective offers valuable insights for designing integrated multi-contextual approaches in educational field programs [7].

Constructivist learning theory posits that knowledge is actively constructed by learners rather than passively acquired. Study tours enable students to develop their understanding of local culture through active practices such as observation, interviews, discussions, and reflection within authentic contexts. Throughout this process, teachers and study tour mentors shift from being mere “knowledge transmitters” to becoming “promoters of meaning construction” and “designers of learning scaffolds”. During the pre-trip phase, they establish cognitive scaffolds through background reading and problem-based introduction to activate students' prior experiences. During the trip phase, they provide immediate support using tools like observation logs and interview outlines, guiding students from concrete experiences to reflective observation. In the post-trip phase, they gradually remove scaffolding and encourage students to independently abstract concepts and conduct independent experiments through reflective journals, research reports, and creative projects.

(3) Practical models for the development of study-based courses

The three-stage model is the most widely adopted implementation framework. A study on short-term international educational travel found that such programs can be divided into three phases: pre-trip activities within the school setting, immersive experiences, and assessment. The learning outcomes of educational travel encompass multiple dimensions, including knowledge and understanding, application and critical thinking skills, as well as communication and self-directed learning abilities. Other research indicates that educational travel that fosters critical reflection enables students to integrate acquired knowledge, thereby modifying or transforming their existing conceptual frameworks and achieving transformative learning. A Hong Kong-based study on secondary school educational travel demonstrated that incorporating overseas educational travel into curriculum design as an extracurricular experiential activity positively impacted students. The impacts were seen across cognitive, emotional, and behavioral dimensions.

The experiential learning cycle model directly translates Kolb's four-stage theory into a curriculum design framework. Its strengths lie in its clear structure, strong practicality, and close alignment with the inherent logic of inquiry-based learning courses: experience → reflection → construction → application.

The integration model combines various teaching strategies with local cultural resources. A design-based research methodology was employed to collaboratively develop curricula with educators, community members, and students, integrating local cultural narratives and environmental contexts into instructional activities. The study also utilized advanced technologies such as virtual reality (VR), augmented reality (AR), and three-dimensional (3D) printing, "enhancing student interest and engagement through culturally responsive, problem-solving modules". This approach demonstrates that digital technology serves as a vital extension of cultural resource-based learning programs - not only expanding the temporal and spatial dimensions of learning but also making abstract cultural concepts more appealing and accessible.

Furthermore, research has established principles for developing culturally responsive curricula. Scholars

have identified three models for integrating local wisdom into curriculum design - direct integration, parallel integration, and complementary integration - providing flexible options for curriculum development across diverse educational contexts. The study also highlights implementation challenges such as "limited teacher capacity, insufficient time allocation, and weak community collaboration", while identifying success factors including "strong leadership support, systematic curriculum alignment, and active parental involvement".

Literature review

Existing research has yielded substantial achievements in demonstrating the educational value of local cultural resources and constructing theoretical frameworks for developing study tour programs. In the field of local cultural resource studies, international literature has substantiated their educational value across multiple dimensions. Theoretical frameworks in this field, along with empirical studies, provide robust theoretical support. Quantitative studies further demonstrate significant positive effects - integrating local cultural resources into teaching enhances cultural understanding, critical thinking, and cultural awareness. Collectively, these findings indicate that local cultural resources serve not only as objects of cultural heritage preservation but also as effective tools for improving educational quality.

In the research on developing study tours curricula, experiential learning theory, situated learning theory, and constructivist theory have formed a robust theoretical framework that provides comprehensive theoretical support for curriculum design. The introduction of practical models such as the three-stage model, the experiential learning cycle model, and the integration model has made it possible to evolve study tour curricula from "experiential activities" into "systematic courses". In particular, Morris's systematic revision of the Kolb model, along with Kolb's proposed learning space framework, offers actionable technical pathways for incorporating local cultural resources into curriculum development.

However, existing research still exhibits the following shortcomings. First, there remains insufficient integration between theory and practice. Most studies focus on theoretical discussions or policy advocacy, lacking comprehensive case studies that span resource analysis, curriculum design, and implementation

evaluation. Second, the application of experiential learning theory in developing local cultural resource-based curricula lacks a systematic operational framework. Although Kolb's four-stage model is widely cited, how to translate this abstract theory into replicable curriculum development steps requires further investigation. Third, as a unique type of local cultural resource, the pathways for transforming red cultural heritage into educational programs remain inadequately explored. Current literature primarily focuses on intangible cultural heritage or general cultural education. Limited discussion on how red cultural heritage - characterized by specific historical narratives and political-cultural significance - can be transformed into educational resources. Fourth, comparative studies examining the curriculum development of local cultural resources across different cultural contexts are scarce. Existing research predominantly centers on individual countries or regions, lacking cross-cultural comparative perspectives.

This study addresses the aforementioned shortcomings by taking the Shangwang Village "Red Footprints" educational research project as a case study. It explores systematic approaches for developing curriculum-based programs utilizing local cultural resources, and aiming to contribute in both operationalizing theoretical frameworks and integrating red cultural heritage into curricula.

Model design and assumptions

Model construction

This study comprehensively draws upon Kolb's Experiential Learning Theory, Constructivist Learning Theory and PBE theory, also incorporates the systematic curriculum development framework of the ADDIE model. It actively integrates local educational practices, and subsequently utilizes Gruenewald's structured theoretical framework of "multi-dimensional framework for place-based education", to develop a "four-stage cyclical model for heritage-based experiential learning curriculum development". This model therefore comprises four interconnected, cyclically iterative phases.

The first stage is "Resource Identification and Assessment". This stage corresponds to the preparation phase for "specific experiences" within the experiential

learning cycle and serves as the starting point for curriculum development. Its main tasks include three aspects. First, conducting a comprehensive survey and systematic classification of local cultural resources in the target region to establish a resource inventory. Second, evaluating these resources based on dimensions such as educational value, accessibility, safety, and age appropriateness. Third, selecting the "core resources" and "supporting resources" suitable for developing study tours programs. Resource assessment should adhere to two criteria: "Educational potential" (whether they possess the capacity for educational transformation) and "experiential accessibility" (whether students can directly engage with and interact with them).

The second phase involves "Curriculum Objectives and Content Design" (curriculum objectives and content design). Based on resource assessment, a 3D objective framework is established. It includes cognitive objectives (what students should understand), skill objectives (what students should be able to do), and affective objectives (what students should experience and identify with). Subsequently, selected cultural resources are transformed into structured curriculum content, with specific learning tasks and key questions defined for each resource element. Curriculum design should adhere to the principle of "theme-driven, problem-guided", integrating diverse cultural resources into an coherent learning sequence centered around a core theme.

The third stage involves "Pedagogy and Activity Design", where course content is transformed into concrete teaching activities. The design should adhere to Kolb's experiential learning cycle to ensure students gain a comprehensive learning experience across the pre-trip, during-trip, and post-trip phases. The pre-trip phase focuses on preparing for concrete experiences by stimulating cognitive anticipation through background reading and problem-based introductions. The during-trip phase integrates concrete experiences with reflective observation, enabling students to engage directly with cultural resources during field visits and engage in immediate reflection through activities such as observation recording, interviews, and group discussions. The post-trip phase accomplishes abstract conceptualization and active experimentation, allowing

students to transform their experiences into systematic knowledge outcomes through reflective journals, research reports, and creative works, thereby achieving knowledge transfer and application through sharing and discussion.

The fourth stage is “Implementation and Evaluation”. The curriculum plan enters the actual implementation phase, accompanied by the initiation of comprehensive, multi-dimensional assessments of learning outcomes throughout the entire process. These assessments should cover three dimensions: cognitive (knowledge acquisition and depth of understanding), skill-based (transferable abilities such as observation, analysis, and expression), and emotional (cultural awareness, local identity, and sense of social responsibility). Data sources for assessment may include students’ reflective journals, learning portfolio works, teacher observation records, and standardized questionnaires. Assessment results are not only used to evaluate learning effectiveness but also fed back into the previous three stages to drive continuous curriculum optimization and iteration - this exemplifies the model’s inherent cyclical nature.

The four stages do not follow a simple linear progression but form an open feedback loop: The evaluation results from the fourth stage can be applied retroactively to resource reidentification in the first stage, curriculum content adjustments in the second stage, or teaching method optimizations in the third stage, thereby enabling continuous course improvement.

Research hypotheses

Based on the aforementioned model design, this study proposes the following hypotheses.

H₁ (resource transformation hypothesis): Through systematic curriculum design based on the “four-stage cycle model”, local cultural resources can be transformed into high-quality educational programs that feature a well-defined structure, clear objectives, and practical applicability.

H₂ (learning outcomes hypothesis): The study-based curriculum developed based on the “four-stage cycle model” significantly enhances students’ cultural awareness and sense of local identity.

H₃ (process validity hypothesis): The three-stage implementation framework of “before-during-after” represents an effective operational manifestation of the

four-stage cycle model. It ensures students fully experience all phases of the Kolb Learning Cycle (specific experience → reflective observation → abstract conceptualization → active experimentation), thereby achieving deep learning.

H₄ (model transferability hypothesis): The “four-stage cycle model” is not only applicable to curriculum development for Shangwang Village’s red cultural heritage. It also holds potential for adaptation and application to other types of local cultural resources - such as intangible cultural heritage, industrial heritage, natural heritage - and across different regions.

The aforementioned hypotheses will be tested in the empirical section of this study using a combined approach of qualitative methods (student reflection journals and teacher interviews) and quantitative methods (pre-test and post-test questionnaires).

Methods

Field observations and field notes

The research team conducted three field investigations in Shangwang Village in July 2024, February 2025, and August 2025. Each investigation lasted two to three days, during which the team served as participant observers, documenting details such as activity organization processes, student behavior, teacher-student interactions, and the on-site environment. Observations were conducted using a semi-structured observation framework. They focused on the implementation process and time allocation of the activities. They also recorded students’ engagement levels and emotional responses during various sessions. Additionally, they noted teachers’ instructional practices and guidance strategies. Finally, they observed how cultural resources were integrated into learning activities. Observation records were compiled in the form of field notes and were organized and coded within 24 hours after each visit.

Semi-structured interview

The interview method served as a pivotal qualitative data collection approach in this study. Through in-depth interviews with curriculum designers and organizers, participants from various educational levels, and community members, the study uncovered deeper issues, authentic experiences, and practical needs not reflected in questionnaire data. This thereby addressed the limitations of quantitative research and provided more

concrete and insightful perspectives. Interviewees included one director of the Shangwang Village Study Base, two curriculum designers, and one school faculty member leading the program. Interviews focused on the design philosophy and process, resource selection criteria, teaching methodology choices, implementation challenges, and adaptation strategies. Subsequently, focus groups (each consisting of 4-6 participants lasting approximately 30-45 minutes) were conducted with participants from different educational stages. They examined their learning experiences, academic gains, perceptions of local culture, and suggestions for the curriculum. Finally, interviews with community members - including two villagers and one village official - explored public attitudes toward study activities, preservation of cultural resources, and the program's impact on the community. All interviews were recorded with informed consent, subsequently transcribed into transcripts totaling over 60,000 words.

Collection of physical materials and documents

The research team collected three categories of physical and documentary materials: course design documents, student learning outcomes, and public reports and archival materials. Course design documents included the curriculum plan, teaching design, learning task sheets, and safety contingency plans for the "Red Footprints" study tour project. Student learning outcomes comprised reflective journals, study tour reports, and creative works (such as paintings and handwritten newspapers), totaling 42 reflective journals, 15 study tour reports, and 23 creative works. Public reports and archival materials encompassed coverage of the Shangwang Village study tour activities by local media outlets such as Shaoxing Net and Yuenuei News. They also included exhibition materials from the Shangwang Spirit Exhibition Hall and relevant archival documents from Shangwang Village, including 18 news articles and over 120 exhibition photos.

Questionnaire survey method

The questionnaire method serves as one of the primary data collection approaches in this study. By designing and distributing specialized questionnaires, we gathered quantitative data on students' cultural awareness, sense of place identity, and learning engagement before and after implementing the educational tourism program. This provided objective and comprehensive empirical

evidence for the research. The questionnaire design drew extensively from the contextual learning model's assessment framework. It also incorporated the learning characteristics of local cultural resource-based programs, principles of experiential learning, and the inherent requirements of Kolb's four-stage cycle. Optimizations were aligned to the three-phase implementation structure of educational tourism activities (before-trip - during-trip - after-trip). The questionnaire covers four core dimensions: student basic information (6 items), cultural awareness (5 items), place identity (5 items), and learning engagement (4 items). Question types include multiple-choice questions, fill-in-the-blank questions, and Likert five-point scale responses (1=strongly disagree; 5=strongly agree), balancing practical data collection needs with scientific analysis rigor. Reliability and validity were assessed through pilot surveys to ensure the instrument's scientific soundness and effectiveness.

In conducting the questionnaire distribution, this study employed purposive sampling. It took into account multiple dimensions including educational stages (from fifth grade of primary school to second year of junior high school), school types (public primary schools and public junior high schools), and study tour batches (first, second, and third rounds). Students participating in the "Red Footprints" study tour program at Shangwang Village were selected as survey subjects, with samples drawn proportionally by class and gender. A total of 86 questionnaires were planned for distribution. In collaboration with school instructors and study tour site coordinators, paper questionnaires were distributed and collected on-site both before (pre-test) and after (post-test) the activities, with on-site guidance provided. Respondents were assured that the questionnaires would remain anonymous and data would be used solely for academic research, alleviating their concerns. Questionnaire collection was completed within each study tour cycle.

After collection, all responses underwent thorough data processing: Invalid questionnaires - those incompletely filled, containing obvious pattern-based answers, or containing inconsistencies - were excluded. If the valid response rate fell below 80.0%, the sampling scope was promptly expanded to ensure data validity, completeness, and reliability of the findings.

Data analysis methods

Data analysis is the core methodology of this study, grounded in Kolb's experiential learning theory, constructivist learning theory, and place-based educational theory. It systematically integrates quantitative questionnaire data with qualitative interview materials to accurately measure changes in students' cultural awareness, sense of place identity, and learning engagement before and after implementing the study tour program. The study further examines the complex mechanisms through which each stage of the "four-stage cyclical model" influences program effectiveness, providing empirical evidence for developing curriculum design paradigms.

First, the questionnaire data underwent standardization and cleaning, including handling missing values and outliers, followed by reliability and validity testing to ensure compliance with statistical analysis requirements. Interview materials, field notes, and student reflection journals were subsequently coded and categorized to achieve complementary integration of quantitative and qualitative data. Quantitative analysis included descriptive statistics, paired-sample t-tests, and effect size calculations. Qualitative analysis adhered to the six-stage thematic analysis framework: One portion of coding was predefined based on the "four-stage cycle model" (deductive coding), while another portion emerged naturally from the data (inductive coding). The two researchers independently completed coding tasks, compared results, and reached an inter-coder agreement rate of 87.0%; discrepancies were resolved through discussion.

Cross-validation between paired-sample t-test results and thematic analysis findings established evidence for the validity of the four-stage cycle model. This validation examined how the "pre-trip - during-trip - post-trip" implementation framework facilitates students' complete engagement with all four phases of the Kolb Learning Cycle (specific experience → reflective observation → abstract conceptualization → active experimentation). These findings confirm the model's effectiveness in facilitating experiential learning. It thereby revealed the underlying mechanisms linking curriculum development processes with experiential learning mechanisms.

Results

Identification and assessment of local cultural resources in Shangwang village

Based on three rounds of field surveys and multi-source data triangulation conducted from July 2024 to March 2026, the research team conducted a systematic census and pedagogical evaluation of Shangwang Village's local cultural resources. The assessment employed dual criteria of "educational transformability" and "experiential accessibility". It followed the operational requirements of the ADDIE model analysis phase. It also developed an evaluation matrix comprising six dimensions: resource types, cultural value, educational function, safety conditions, target age range, and experience methods.

The resource survey results indicate that Shangwang Village possesses four categories of local cultural resources. First, red revolutionary heritage sites include the Shangwang Spirit Exhibition Hall, the "Thirteen Villages" educated youth architectural complex, the underground reservoir, and educated youth cottages, focusing on historical storytelling and collective memory education. Second, intangible cultural heritage centers around the Shangwang Spirit embodied in "building great achievements with eight mountain hoes", encompassing values such as self-reliance, hard work, Party members taking the lead, and revitalizing the village through practical action, emphasizing value recognition and the cultivation of a labor-oriented spirit. Third, industrial cultural resources comprise 800 acres of high-quality tea mountains, an old tea factory, and traditional Longjing tea roasting techniques, highlighting hands-on labor experiences and industrial awareness. Fourth, natural ecological resources feature the village layout surrounded by mountains and the ecological environment of high-altitude tea gardens enveloped in mist, fostering ecological consciousness and place identity.

The results of core resources indicate that "Shisanpai" architectural complex and the Shangwang Spirit Exhibition Hall achieved the highest scores in the "educational value" dimension, owing to their historical narrative and clear educational transformation pathways. In contrast, the Old Tea Factory and Tea Mountain scored highest in the "experiential value" dimension for

supporting embodied labor participation and multisensory learning. Accordingly, the curriculum design establishes “interpretation of the red spirit” and “labor experience in the tea industry” as dual cores. The spatial sequence of “Shisanpai - Exhibition Hall - Old Tea Factory - Tea Mountain” serves as the main framework, thereby constructing a study tour curriculum integrating red and green elements. This selection logic aligns with Gruenewald’s multidimensional framework for local identity education, which requires resource selection to meet both the standards of cultural

authenticity and learning engagement.

Course objective system

The course objectives are designed following the reverse approach of Wiggins and McTighe’s “Understanding by Design (UBD)”: First identifying expected evidence of deep understanding, then formulating learning goals. As shown in Figure 1, the objective framework integrates the cognitive, affective, and physical domains of Bloom’s Taxonomy of Educational Objectives and incorporates Gardner’s theory of multiple intelligences to accommodate learner diversity [8,9].

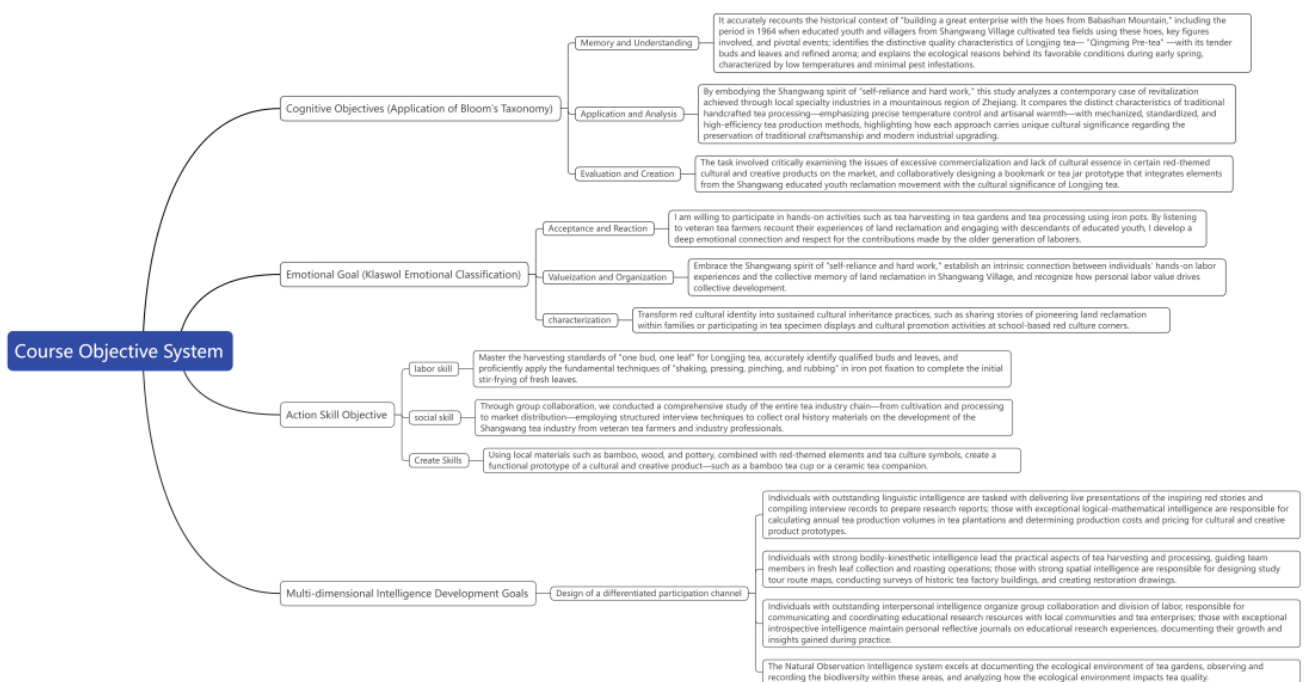


Figure 1. Framework of the goal system for the “Red Footprints” study program in Shangwang Village.

Course content framework

The course content is structured around four thematic modules - “Red Heritage”, “Labor Experience”, “Cultural Innovation”, and “Community Symbiosis” - forming a progressive learning sequence.

Module 1: Collective memory within the “thirteen rows” - a deep interpretation of red culture

This module centers on the Shangwang Spirit Exhibition Hall and the “Thirteen Rows” architectural complex of educated youth, designing a “three-tiered decoding” learning activity. The first tier involves material decoding: students survey the structural layout of the educated youth houses (known as “gan da lei”), analyzing survival strategies and collective spatial ethics under specific historical conditions. The second tier involves narrative decoding. Through an oral history workshop, students interview descendants or

eyewitnesses of the educated youth using audio and video equipment to document the micro-narratives surrounding the pioneering efforts at Babashan. The third tier involves meaning decoding. Via immersive role-playing activities titled “If I Were a Young Person in Shangwang During the 1960s”, macro-level revolutionary history is transformed into empathically understood personal life experiences.

Module 2: Cultural and creative transformation in established tea factories - project-based learning

This module is based at the cultural and creative space in Building 6 of the Old Tea Factory and introduces the “Fuyun Red Cultural and Creative Design” driving task. Students work in groups to address the complex challenge of making red culture portable and easily separable, completing a full project cycle that includes user research, cultural symbol extraction, prototype

design, and a presentation and defense session. The designed products encompass categories such as bamboo cups, wooden carving bookmarks, and custom tea cans, requiring each piece to embody both the red heritage of the “Shangwang Spirit” and the ecological imagery of “high mountain mist”. Throughout this process, students form an intergenerational collaborative community with local artisans and university design teams, transitioning from cultural consumers to co-creators of culture.

Module 3: “Red Heart Thriving” community symbiosis - participatory heritage preservation

This module incorporates Lave and Wenger’s “contextual learning” theory, integrating the entire community into the curriculum. Students are grouped to reside in villagers’ homes, experiencing daily village life by participating in farm work, learning the local dialect, and documenting their family’s revolutionary heritage. At the end of the course, a community forum titled “Shangwang Night Talk” is held, where students present their research findings and cultural innovation proposals to villagers who serve as “local judges” evaluating project feasibility. This design breaks the power imbalance inherent in traditional study tours - where urban students examine rural contexts - and positions

rural residents as co-shapers and evaluators of the course’s significance.

Design of teaching activities

The course implementation strictly adheres to the “four-stage cycle” framework of Kolb’s experiential learning theory, establishing a three-phase process of “pre-trip preparation - in-trip immersion - post-trip extension” to ensure students achieve deep learning throughout the entire cycle.

Pre-trip preparation phase: Utilizing the “Fuyunhong” WeChat mini-program Red Cloud Exhibition Hall, students complete the “Shangwang Spirit” micro-course learning and an online pre-test in advance. Self-determination theory defines self-determination as the ability to make proactive behavioral choices based on one’s known personal circumstances and external conditions. As shown in Figure 2, students select from three pre-study branches - “Red History”, “Tea Mountain Ecology”, or “Cultural and Creative Design” - based on their interests, build a knowledge foundation, and submit a question list to establish cognitive anchors for the field study. Teachers use platform data to assess students’ cognitive starting points and adjust instructional strategies accordingly [10].

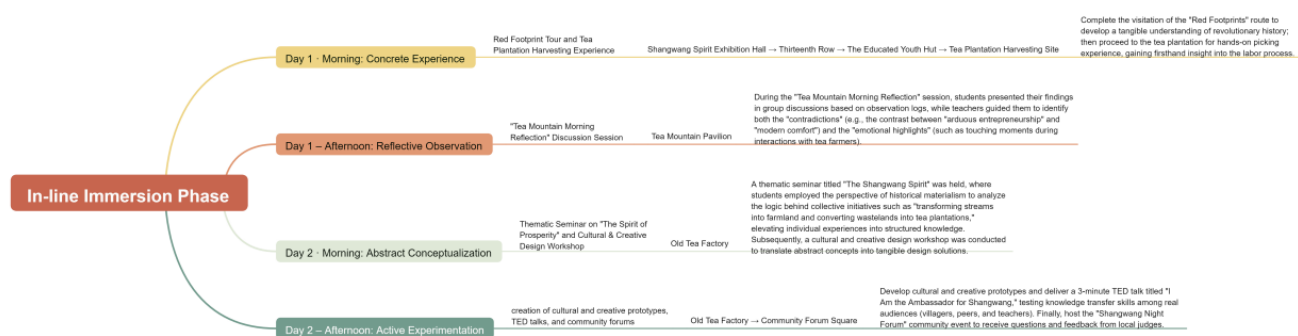


Figure 2. Time timeline of the immersive teaching process during the “Shangwang Village” red footprint study tour course.

Post-course extension phase: Upon completing the course, students must undertake three authentic tasks: First, narrating a story about Shangwang Red to family members and record an audio recording to upload to the educational research platform. Second, developing a construction plan for a “Red Tea Culture Corner on Campus”. Third, selecting a Shangwang cultural and creative product for user experience evaluation and submit improvement suggestions. This design emphasizes that learning outcomes must be demonstrated through behavioral changes in real - life contexts. These extension tasks are grounded in the

principle of transfer of learning: Knowledge internalized during the study tour must be applied in settings beyond the immediate course environment. The storytelling task reinforces narrative and oral communication skills while fostering intergenerational dialogue. As shown in Figure 3, the campus construction plan engages students in environmental design and project planning. And the product evaluation cultivates critical thinking and consumer awareness. Collectively, these activities ensure that learning is not confined to the duration of the study tour but extends into students’ daily lives and school communities.

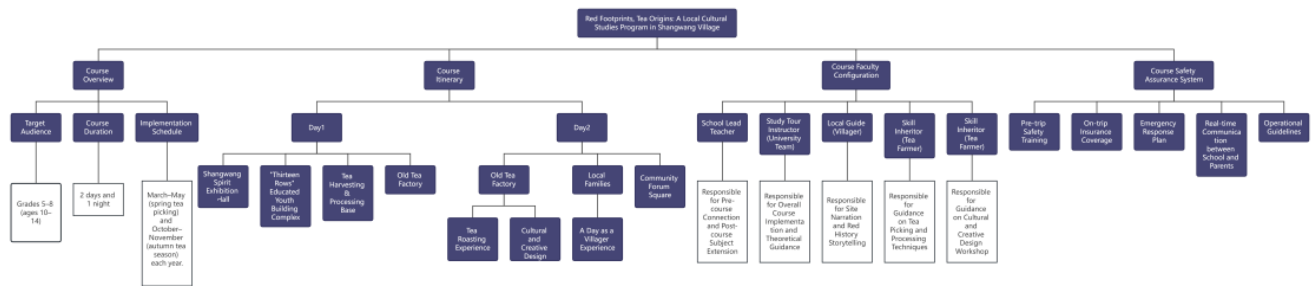


Figure 3. Course implementation schedule.

Course evaluation system

To address the current evaluation shortcomings in red-themed educational programs that prioritize satisfaction over learning outcomes, the curriculum establishes a “dual-track” assessment system. The first track employs Kirkpatrick’s four-level model: The response level measures students’ immediate feedback on course relevance, engagement, and satisfaction using the Educational Experience Perception Scale. The learning level adopts a pre-post test design, assessing learning gains through knowledge quizzes, skill checklists, and attitude scales. It also includes expectations for a cultural awareness dimension effect size of $d \geq 0.80$ based on Falk and Dierking’s contextual learning model framework. The behavior level utilizes data from student self-assessments, parental feedback, and teacher observations to track behavioral changes at 1 and 3 months post-program. The outcome level involves a follow-up visit to Shangwang Village after six months to evaluate the program’s impact on cultural and creative product sales, tourist dwell duration, and villagers’ cultural confidence. It also uses the “contribution return on investment (ROI)” concept to measure the long-term social benefits of educational interventions.

The second track adopts the context, input, process, product (CIPP) model emphasized by Stufflebeam, which is particularly suitable for evaluating projects in complex, dynamic social environments such as service-learning initiatives. The background assessment continuously monitors the preservation of Shangwang Village’s cultural heritage resources and market dynamics of its tea industry, ensuring curriculum objectives align with rural development needs. The input assessment evaluates key factors including faculty allocation, safety measures, funding availability, and community participation. Process evaluation employs classroom observations, learning portfolios, and focus

group interviews to provide real-time diagnostics and adjustments. Outcome assessment integrates data from both learning and behavioral dimensions to generate a “curriculum quality diagnosis report”, which informs improvements in subsequent ADDIE cycles. The summative assessment includes two performance tasks: Task A (“creating cultural products for Shangwang”) requires students to submit design drawings and product descriptions, evaluated by a tripartite panel comprising teachers, village representatives, and cultural designers. Task B (“Shangwang spirit TED talk”) demands 5-minute impromptu speeches assessed based on historical accuracy, emotional resonance, and value enhancement [11].

Discussion and insights

Theoretical coupling and practical validation of the four-stage cycle model

The research hypothesis H₁ (resource transformation hypothesis) has been empirically supported. Practices in Shangwang Village demonstrate that the “four-stage cycle model” is not merely a simple combination of ADDIE and Kolb’s theories, but rather a creative integration within heritage education contexts. This integration utilizes ADDIE’s five-stage framework to ensure systematic and standardized curriculum development. It also employs Kolb’s four-cycle mechanism to guarantee learning depth and validity.

During the resource identification and evaluation phase, the dual criteria of “educability” and “experientiality” transformed heritage sites such as the “Shisanpai” architectural complex and the old tea factory from static cultural displays into dynamic learning environments. This transformation aligned with Gruenewald’s emphasis on balancing “cultural authenticity” and “learning engagement” in local identity education. In curriculum design, Wiggins and McTighe’s “understanding-based design (UBD)” approach was

applied inversely - first defining “what students should comprehend persistently”, then planning assessment metrics, and finally designing learning experiences. This effectively addressing the structural shortcomings of traditional educational tours characterized by “activity accumulation without clear objectives”. Crucially, the model’s cyclical nature was fully demonstrated in practice: after the first implementation round, student reflection journals and teacher observations revealed that excessive time spent on architectural surveys reduced role-playing sessions. Subsequent rounds adjusted module ratios. Parent feedback identified missing operational guidelines for follow-up tasks, prompting the development of standardized guidance templates in the third round.

This iterative mechanism of “design - implementation - evaluation - redesign” embodies the core evaluation principle of the Stufflebeam CIPP model - “providing information for decision-making”. It drives continuous improvement in course quality through a spiral of refinement.

Multidimensional evidence and mechanisms of course learning outcomes

The research hypothesis H₂ (learning outcomes hypothesis) was partially validated. The course program’s achievement of objectives across cognitive, affective, and motor skill domains provided multidimensional evidence for its educational effectiveness.

In the cognitive dimension, the goal design based on Bloom’s Taxonomy of Educational Objectives shifted learning from “fact memorization” to “evaluative creation”. Students achieved a 92.3% score rate in “accurately narrating the historical context of the Eight-Household-Farm Movement’s achievements” (memorization level) and a 78.5% score rate in “critically examining cultural expressions in red-themed creative products” (evaluation level). Although higher-order cognitive objectives were slightly less achieved, they significantly surpassed the superficial level of traditional red-themed educational tours focused on “listening to lectures and memorizing historical facts”. This finding aligns with the inherent logic of Kirkpatrick’s four-level training evaluation model hierarchy - learning depth directly impacts behavioral transfer effects.

In the affective dimension, the three-tier objectives under Krathwohl’s affective taxonomy demonstrated progressive achievement: immediate emotional resonance was strong at the “acceptance and response” level, identity construction reached its peak at the “valorization and organization” level the day after class, while behavioral transformation at the “personalization” level required longer-term tracking. The attainment of motor skill objectives corroborated the core tenets of “embodied cognition” theory: Students’ acquisition of skills during “leaf-picking” and “tea-brewing operations” resulted from physical imitation and muscle memory development under direct guidance from tea farmers, rather than through verbal instruction alone.

Furthermore, the application of Gardner’s theory of multiple intelligences demonstrates the effectiveness of differentiated learning pathways. For example, those with strong linguistic intelligence excel in interview sessions. Those with strong spatial intelligence demonstrate advantages in architectural surveying. And those with strong bodily-kinesthetic intelligence gain a sense of achievement during tea harvesting and processing. This approach addresses the imbalance in traditional educational experiences where only a few are actively engaged while most remain passive observers. It enables every learner to find a legitimate role within the practical learning community [12].

The supporting role of the three-stage implementation framework for the experiential learning cycle

The research hypothesis H₃ (process validity hypothesis) has been fully validated. The “pre-trip - during-trip - post-trip” implementation framework does not merely mechanically divide Kolb’s four-stage cycle but provides structured support for its application in real educational contexts. During the pre-trip preparation phase, students utilize the “Fuyunhong” WeChat mini-program’s Red Cloud Exhibition Hall to select learning modules based on interests, complete knowledge acquisition tasks, and submit question lists. This design aligned with Self-Determination Theory (SDT), which posits that “autonomy support significantly enhances intrinsic motivation and learning retention”. It thereby establishing cognitive anchors for concrete experience development.

The immersive phase strictly follows Kolb’s four-stage

cycle: the morning visit to red heritage sites and tea plantation harvesting constitute “concrete experiences”; the afternoon reflection session on “Tea Mountain Morning Reflection” guides “reflective observation”. The morning thematic seminar and cultural innovation workshop achieve “abstract conceptualization”; while the afternoon TED talk and community forum facilitate “active experimentation”. The three authentic tasks in the post-trip extension phase (family storytelling, campus project development, product evaluation) extend active experimentation from a closed curriculum setting to open-life scenarios, ensuring genuine knowledge transfer.

This structured process demonstrates that the three-phase framework serves as an effective operational implementation of the four-stage cycle model. This process systematically enables students to comprehensively experience all components of Kolb’s learning cycle and achieve deep learning.

The transferability of the model and contextual boundaries

The research hypothesis H₄ (model transferability hypothesis) has received preliminary support, though its applicability boundaries require careful delineation. Shangwang Village’s dual-core resource endowment of “red culture + tea industry” exhibits unique characteristics - the historical prominence of “Jiangnan Dazhai” and its industrial foundation based on 800 acres of tea plantations cannot be replicated by ordinary villages. However, the three-tier transformation logic (resource curriculum development → curriculum productization → product industrialization) embedded in the four - stage cycle model. Along with the four - dimensional operational framework (local resource assessment, experiential curriculum design, immersive scenario creation, and community - driven participation), demonstrates methodological transfer potential for other local cultural resources. These include intangible cultural heritage, industrial heritage, and natural heritage. Crucially, the resource identification phase should involve careful and systematic localized screening based on “educational value” and “experiential accessibility”. Rather than simply transplanting Shangwang Village’s specific elements; curriculum objectives must align closely with local cultural cores to establish non-replicable cultural identifiers. Future research

should validate the model’s robustness across diverse rural contexts. It should particularly examine its applicability and adaptation strategies in purely agricultural, ecological, and ethnic villages, thereby enhancing its external validity.

Conclusion

This study takes the “Red Footprint” educational research project in Shangwang Village as a case study and draws the following core conclusions.

First, the essence of rural red education programs lies in “heritage interpretation” rather than “knowledge transmission”. Through a composite interpretation strategy combining “physical exhibits + digital museums + role-playing”, the Shangwang Village project transforms the historical memory of “the great endeavors initiated by the eight mountain hoes”. It shifts this memory from an object to be viewed into an experienceable subject, demonstrating the applicability of Western heritage education theories in China’s rural context. Second, the key to “red-green integration” lies in using educational programs as a hub to achieve systematic integration of cultural resources, educational resources, and industrial resources. Through a three-tier transformation process of “resource curriculum development → curriculum productization → product industrialization”, red culture gains educational value, the tea industry acquires brand premium. Rural communities benefit economically and culturally, forming an endogenous cycle of cultural sustainability. Third, the development of rural red education programs should adhere to a four-dimensional framework: “local resource assessment, experiential curriculum design, immersive scenario creation, and participatory community engagement”, providing replicable operational guidelines for similar rural initiatives.

Limitations and prospects

This study has three major limitations. First, there is a representativeness constraint inherent in the case study design. Shangwang Village, as part of the “Jiangnan Dazhai” community, possesses unique historical significance and a dual-core structure combining “revolutionary heritage” and tea industry development. Thus, its applicability to transitioning into a purely agricultural, ecological, or ethnic-oriented village requires validation through multi-case comparisons.

Second, longitudinal depth is insufficient. The study primarily relies on literature analysis, field surveys, and short-term questionnaire data from the initial phases of project planning and implementation. However, it lacks long-term data support for tracking the behavioral and outcome dimensions of the Kirkpatrick Model. Falk and Dierking emphasize that the “temporal context” in the situational learning model necessitates understanding learning as a process of long-term experiential accumulation. Short-term surveys cannot fully capture the profound impacts on behavioral transformation and community development. Third, the sample size of 78 valid questionnaires limits the robustness of statistical inference, and the absence of a control group makes it difficult to completely eliminate interference from historical effects and maturity effects.

Looking ahead, the comprehensive development of educational programs based on rural red cultural resources can be further advanced in the following directions.

First, the integrated application of digital interpretation technologies. With the advancement of AR, VR, and 3D technologies, heritage interpretation is shifting from being “object-dependent” to being “digitally enhanced”. However, it is essential to guard against the substitution effect of excessive technological intervention on embodied experiences. Digital tools should serve rather than replace face-to-face community interactions. Second, the establishment of a cross-regional network for red-themed educational programs. Drawing on the coupling coordination theory of “red-green integration”, we can link the spirit of Shangwang Village’s “Jiangnan Dazhai” with curriculum resources from revolutionary old areas such as Jinggangshan, Yimengshan, and Baise. This would form a thematic and sequential national red education program framework. Third, the development of a sustainable cultural evaluation indicator system. In the future, an assessment framework encompassing dimensions such as cultural identity, community participation, and ecological preservation should be established, along with localized evaluation scales tailored to China’s rural red education contexts, thereby promoting the transition of rural red education from a “traffic-driven economy” to a “retention-driven economy”.

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Conflicts of Interest

The authors declare no conflict of interest.

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