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Development Logic and Practical Pathways of Youth Social Education Courses in Archaeological Museums

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Abstract

Archaeological museums carry a distinct responsibility in exploring the origins of Chinese civilization and interpreting cultural heritage. However, their youth-oriented education is often hindered by disciplinary specialization and the cognitive distance between adolescents and cultural relics. Drawing on the basic characteristics of archaeology as a discipline and the cognitive development patterns of adolescents, this study adopts participatory museum theory and the concept of audience segmentation education. It proposes three guiding principles for developing social education courses in archaeological museums: experiential transformation, processual construction, and value-oriented guidance. This paper constructs a three-stage progressive content framework covering archaeological discovery, methodological acquisition and ultimate meaning generation. The implementation pathway incorporates contextual simulation, inquiry-based practice, and interdisciplinary integration. Taking the school outreach programs launched by the Shandong Archaeological Museum as a case, this paper analyzes the logical transformation of curriculum development from one-way knowledge transmission to experiential transformation. The findings offer both theoretical insights and practical guidance for systematically designing social education courses in archaeological museums.

Keywords

Archaeological museums; youth education; social education courses; experiential learning; cultural identity.

1. Introduction

Archaeology is a discipline that reconstructs and interprets human history by analyzing material remains left by ancient human activities. It is this empirical nature that gives archaeological museums a unique role in public education, distinct from other types of museums. These museums should not only present the beauty of cultural relics, but also explain their origins, discovery processes and historical values as a complete knowledge system. However, the professional nature of archaeology forms a barrier to public understanding. The contextual separation between excavation sites and exhibited relics also makes it hard for teenagers to form a coherent cognitive picture linking field excavation to cultural interpretation. In recent years, studies on museum youth education have attracted growing academic attention. Gao Yifu et al. have analyzed the definition, types, and characteristics of archaeological museums [1]. Zhou Jingjing and other scholars have systematically reviewed the development of museum education theories [2]; Zheng Jing has discussed the application of audience segmentation education in museum practice [3]; Song Xian has analyzed the diverse trends of museum education research from an interdisciplinary perspective [4]. Nevertheless, most existing studies focus on comprehensive museums, and systematic research on the educational characteristics of specialized archaeological museums is still inadequate.

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Although Shandong Archaeological Museum has not yet been officially opened, its preliminary pilot social education programs carried out in schools provide a vivid case for reflecting on how archaeological resources can be transformed into educational content.

Against this practical background, this paper puts forward the principles, framework and path for developing social education courses in archaeological museums, so as to offer theoretical support for educational practices in similar institutions.

2. Features and Challenges of Social Education Courses in Archaeological Museums

2.1. Knowledge Characteristics and Transformation Difficulties

Education based on archaeology possesses three distinctive knowledge attributes, which lead to particular difficulties in educational transformation.

First, context dependence. The significance of archaeological remains relies heavily on their original excavation context. Once archaeological remains are separated from their original burial contexts and put on display, most of their contextual information will be lost. As Kong Lining argued, what distinguishes archaeological museums from general history museums is their emphasis on the relationship between objects and their original contexts [5].

Second, process concealment. Archaeological discoveries result from a series of sequential operations, yet exhibitions usually only present final findings. This makes it hard for young learners to understand how archaeological knowledge is actually produced. Gao Yifu and other scholars described the narrative logic of archaeological museums as “stories of discovery” rather than simple displays of objects [1].

Third, interpretive pluralism. Reconstructions of ancient societies based on archaeology often allow for multiple reasonable inferences. This stands in tension with the “standard answer” model common in school education, requiring educators to balance scientific rigor with open inquiry.

These characteristics determine that social education courses in archaeological museums cannot be confined to traditional teaching models. Drawing on the participatory museum theory proposed by Nina Simon, museums should transform themselves from authoritative knowledge disseminators into builders of participatory learning platforms [6]. It is essential to explore approaches that visualize hidden archaeological processes, simplify professional terms, and contextualize static cultural relics. This paradigm shift requires social education curriculum design to break away from the conventional one-way information transmission model of the stimulus-response pattern, and instead construct a multi-node interactive space for knowledge co-construction built on dialogue and cooperation. Within such a space, audiences cease to be passive recipients of knowledge. Through hands-on operations or fieldwork simulations, they become active agents embedded in the knowledge production network, enabling proactive restructuring of their cognitive schemata and pluralistic generation of interpretative meanings. Meanwhile, the integrated application of digital media technologies and narrative communication theories can convert highly abstract professional methodologies such as archaeological stratigraphy and typology into embodied exploratory tasks or immersive scenario narratives. By reducing cognitive load and stimulating intrinsic motivation, this approach effectively improves the accessibility and internalization efficiency of specialized knowledge.

2.2. Starting Points and Needs of Adolescent Archaeological Cognition

Archaeology holds a natural appeal to adolescents: the mysterious underground world, the process of exploratory excavation, and the romantic imagination of communicating with ancient ancestors all generate strong curiosity. However, adolescents generally hold three

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cognitive biases toward archaeology. First, bias in research objects: they equate archaeology with treasure-seeking and antiques authentication, ignoring its nature as scientific research. Second, bias in research methods: they lack basic understanding of key archaeological approaches such as stratigraphy and typology. Third, bias in value perception: they have a weak sense of how archaeological achievements relate to contemporary life and cultural identity.

According to cognitive development theory, adolescents aged 11 to 16 have entered the formal operational stage of cognitive development, a critical period for the cultivation of abstract logical thinking [2]. This suggests that the core goal of archaeological education is not to instill professional knowledge, but to build cognitive bridges from curiosity to comprehension, from artifacts to civilization, and from the past to the present, in line with their cognitive rules. As John H. Falk and others have noted, museum learning is not the passive reception of knowledge; rather, it is a dynamic process in which learners, drawing on personal cognitive motivations, social interaction contexts, and the physical space of the museum, actively construct personalized meaning and internalize knowledge by integrating their own experiences and sense of identity [7]. Archaeological education should help adolescents position themselves in historical depth. This positioning, achieved through direct contact with material remains and interpretive investigation, turns abstract historical time into perceptible life experience, so that cultural identity ceases to be a matter of indoctrination and becomes a self-aware internalization embedded in individual cognition.

3. Principles for Developing Social Education Courses in Archaeological Museums

3.1. Experiential Transformation

Given the hidden nature of archaeological knowledge, course design should convert invisible excavation and research processes into tangible, operable, hands-on experiences. George Hein has systematically elaborated the constructivist theory of museum education, stressing that learners construct knowledge through active participation and experience [8]. Accordingly, courses should create simulated archaeological scenarios, enabling adolescents to understand the principles of stratigraphy through hands-on operations such as gentle digging and brushing, and to grasp the classification logic of typology by reassembling pottery fragments and drawing artifact forms. Experience is not merely a recreational adjunct, but a necessary path for cognitive generation. By leveraging the pathway of embodied cognition to dismantle professional knowledge barriers, this approach facilitates learners' spontaneous adjustment and restructuring of their cognitive schemata. Meanwhile, the practical context can establish intrinsic connections among material remains, stratigraphic sequences, and historical contexts, progressively cultivating learners' normative archaeological interpretive thinking and awareness of empirical research.

3.2. Processual Construction

The appeal of archaeology lies in the process of discovery rather than the possession of results. Course design should integrate the archaeological way of thinking—raising questions, observing evidence, forming hypotheses, and verifying inferences—into teaching procedures. Chang Danjing pointed out that audience participation in museum learning is exploratory in nature, and its core lies in enabling learners to experience the process of knowledge production [9]. By setting open-ended tasks, adolescents are guided to think like archaeologists, instead of merely memorizing what an artifact is and which period it belongs to. Processual construction endows knowledge acquisition with an inquiring character, rather than passive reception. Such process-oriented construction activates learners' intrinsic cognitive drive, turning observation, questioning, and verification into nodes of meaning-making. By experiencing the piecing

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together of evidence and the negotiation of interpretations in simulated contexts, learners further hone their skills in evidence evaluation and multi-perspective interpretation. This approach aligns with constructivist learning theory, which emphasizes that knowledge is dynamically generated through problem-solving. Curriculum design should therefore strengthen open-endedness and iterativity, allowing learners to revise their views amid uncertainty, thus achieving a leap from "knowing" to "understanding", and ultimately transcending the mere reading of artifacts to cultivate historical thinking and scientific spirit.

3.3. Value-Oriented Guidance

Archaeology not only reconstructs history but also responds to the profound question of "who we are and where we come from". Curriculum development must take cultural identity and civilization inheritance as its core values. Zheng Yi argued that museum education should pursue relevance, resonance and empathy with the audience, so as to build meaningful connections between historical culture and contemporary life [10]. This is not a redundant form of preaching, but a narrative logic inherent in archaeological materials: the evolution of pottery patterns reflects the inheritance of aesthetic ideas, and the layout of settlement sites reveals changes in social organization. Courses should guide adolescents to develop a deep understanding of Chinese civilization through tangible engagement with history. When adolescents discern the survival wisdom of ancient peoples in coping with nature amid the crumbling remnants of archaeological sites, and perceive the cultural rhythms of ethnic integration through the morphological evolution of artifacts, such embodied experience transcends the passive reception of knowledge to become an active awakening of cultural genes. Accordingly, the value-oriented guidance of archaeological education ultimately aims to foster a mindset of "rooted global citizens". While understanding the uniqueness of Chinese civilization, young people also learn to respect the diverse manifestations of human civilizations. In a globalized context, this enables teenagers to clearly identify their own cultural positioning, while retaining the mindset and capacity for open dialogue. This may well constitute the profound implication of archaeological education evolving from historical cognition to cultural self-awareness.

4. Content Framework for Social Education Courses in Archaeological Museums

Based on the above principles, this paper establishes a three-stage progressive framework: archaeological discovery – methodological acquisition – meaning generation, which is illustrated with reference to the school outreach programs of Shandong Archaeological Museum.

4.1. Stage 1: Archaeological Discovery

The primary task at this stage is to bridge adolescents' perceived distance from archaeology and stimulate inquiry through immersive contextual design. A practical approach involves simulated excavation exercises. For instance, setting up simplified test pits at schools or in public spaces, layering replica artifacts such as potsherds and stone tools. Under professional guidance, participants use trowels and brushes to excavate, recording the position and context of finds. Such simulations translate abstract stratigraphic principles into hands-on experience, internalizing the notion that "archaeology is not treasure hunting" through embodied practice.

Pedagogically, this approach aligns with audience segmentation education by starting from learners' experiences. Supplemented with excavation footage and oral accounts from archaeologists, it helps adolescents grasp the reality of archaeological work, fostering initial recognition and respect for the profession.

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4.2. Stage 2: Methodological Acquisition

On the basis of contextual experience, the course shifts to inquiry training on archaeological methods. Archaeology features a distinctive toolkit: typology for comparison and analysis, stratigraphy for dating, and scientific analysis for revealing material composition and craftsmanship. The curriculum adopts task-based learning: students classify potsherds according to form, pattern and texture, or interpret stratigraphic sections to determine the relative ages of remains and justify their judgments.

The focus of this stage is not on fixed correct answers, but on helping adolescents understand how archaeologists draw conclusions based on evidence, thus cultivating evidence-based reasoning. Such thinking training is essentially a form of inquiry learning, which is highly consistent with the core literacy goals advocated in basic education reform.

4.3. Stage 3: Meaning Generation

Once adolescents have acquired basic cognitive tools of archaeology (e.g., artifact observation, stratigraphic analysis, typological comparison), the course should guide them toward deeper meaning generation: how do archaeological finds, as material remains of ancient societies, serve as direct evidence for interpreting history? What intrinsic connections exist between these millennia-old cultural relics and contemporary society, as well as the cultural identity of today's youth? For instance, how does the complete archaeological cultural sequence of the Shandong region clearly demonstrate the continuous evolutionary trajectory of Chinese civilization?

The curriculum may include integrated tasks such as "Writing Archival Records for Artifacts", allowing students to apply the observational and reasoning skills acquired in the previous two stages to interpret archaeological materials. As Xing Zhiyuan et al. have noted, the ultimate goal of audience segmentation education in museums is "to enable different groups to gain spiritual nourishment through cultural participation" [11]. This form of identity formation is based on internally generated understanding, not external indoctrination. As young learners take the initiative to construct historical narratives through tasks like "Documenting Artifacts" and "Reconstructing Daily Life in Antiquity," they transition from merely "knowing about history" to truly "understanding history", turning archaeological education into an organic, self-aware process of cultural identity formation. Consequently, the generation of meaning no longer remains confined to cognitive interpretation. It evolves into an active embrace of their cultural heritage, along with a deeper spiritual enrichment that allows them to situate themselves in historical perspective and gain insight into the contemporary world.

5. Practical Pathways of Youth Social Education Courses

5.1. Contextual Simulation

Given the fieldwork nature of archaeology, educational activities should not be confined to classrooms. Simulated excavation zones can be built when conditions permit; otherwise, digital technologies can be used to create virtual field experiences, such as VR presentations of excavation processes and 3D stratigraphic section models. Liu Ya states that digital tools transcend temporal and spatial boundaries and extend the accessibility of museum education resources [12]. The purpose of contextual simulation is not to pursue technological spectacle, but to provide contextual anchors for inquiry-based learning, giving abstract concepts concrete grounding, and enabling young people to immersively adopt the identity of archaeological researchers, so that they can gain a firsthand understanding of the rigorous operational protocols and scientific logic of field archaeology.

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5.2. Inquiry-Based Practice

Archaeological courses should shift the focus from teacher-led instruction to student-centered inquiry. Teachers act as task designers and process facilitators rather than knowledge transmitters: setting challenging research tasks, offering necessary materials, and providing hints instead of direct answers. This aligns with the participation gradient summarized in participatory museum theory, ranging from contributory, collaborative to co-creative modes of participation [6]. The openness of activities can be adjusted according to students' cognitive levels at different ages. In this process, students can not only acquire knowledge but also develop a sense of self-efficacy in exploration and reasoning. This inquiry-based practice is not limited to simulated excavation; it can also extend to the sorting, classification, and preliminary interpretation of excavated materials, allowing young people to experience the complete chain of reasoning in archaeology-from material remains to historical narrative.

5.3. Interdisciplinary Integration

Archaeology is inherently interdisciplinary, closely linked to history, geography, chemistry, art, mathematics and other subjects. Course design should take advantage of this feature and use archaeology as a node for integrating disciplinary knowledge. For instance, testing pottery firing temperatures involves physics and chemistry, GIS analysis of site distribution relates to geographic information technology, and symmetry of artifact patterns reflects mathematical thinking. This interdisciplinary approach enriches the curriculum and conveys an integrated view of knowledge, which is consistent with the comprehensive reform trend in basic education. Rather than memorizing disjointed facts in isolation, students learn to employ a variety of intellectual tools to address authentic archaeological challenges, progressively building a holistic and synthesizing mindset that connects disparate strands of knowledge.

6. Conclusion

The development of social education courses in archaeological museums is essentially a process of interpretation and transformation: converting professional archaeological discourse into language accessible to young people, turning static relics into dynamic inquiry experiences, and translating historical knowledge into resources for cultural identity. Although Shandong Archaeological Museum has not yet opened officially, its early school programs have shown a clear direction: the value of archaeological education lies not in the amount of knowledge imparted, but in inspiring young people to recognize that the land beneath them holds clues to "who we are," with archaeology as the key to exploring the past.

In the future, with the completion and opening of the museum, its education system is expected to evolve from scattered activities to systematic courses, and from one-way transmission to co-construction among museums, schools, and communities. This will provide a more exemplary model for the educational practice of archaeological museums.

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