

# Agarwood as an “Embodied” Cultural Medium: The Construction and Application of a General Education Model Based on Olfactory Memory

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This study aims to explore how to creatively transform agarwood, a traditional incense rich in historical and cultural significance, into an effective cultural medium in modern general education. Moving away from a purely neuroscientific explanation of biological mechanisms, the research introduces the theory of “embodied cognition”, proposing that agarwood constitutes a typical “embodied” cultural medium. Its core hypothesis is that agarwood not only influences an individual’s physiological and psychological states through its unique olfactory properties but, more importantly, embeds abstract cultural values, historical contexts, and aesthetic concepts into the learner’s cognitive and memory processes through bodily sensory experiences, thereby constructing a deep, immersive mode of cultural acquisition. Employing qualitative research methods, this study conducted in-depth interviews and participatory observations with students enrolled in a thematic general education course titled “Agarwood and the Life of Song Dynasty Literati”, combined with textual analysis of historical documents regarding the use of agarwood. It investigates the specific effects of “olfactory narratives” centered on agarwood in stimulating students’ historical empathy, enhancing the consolidation of cultural memory, and promoting interdisciplinary knowledge connections. Based on the findings, this paper constructs a new general education model that uses the “incense ceremony” as a practical vehicle, integrating four dimensions: “artifacts, literature, experience, and reflection”. It also designs a three-tiered teaching application scheme comprising “historical scene reconstruction”, “collaborative reading of classical texts”, and “creative expression”. This research provides a theoretical framework and practical case for the modern educational transformation of traditional cultural resources, emphasizes the fundamental role of sensory experience in humanities education, and offers new ideas for deepening the immersive quality and humanistic depth of general education.

*Keywords:* agarwood, embodiment, cultural medium, olfactory memory, general education, educational model

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## Introduction

In the wave of globalization and digitalization, effectively enabling the younger generation to understand and internalize their nation’s profound traditional culture has become a core challenge for general education. Traditional cultural instruction predominantly relies on textual reading and theoretical explanation, often struggling to bridge the gap between “knowledge” and “experience”, and between “history” and the “present”. This frequently results in superficial cognitive understanding of cultural heritage, lacking emotional resonance and physical-mental immersion. Concurrently, recent research in educational neuroscience has revealed the unique advantages of sensory experiences, particularly olfaction, in memory encoding and emotional arousal, providing scientific inspiration for innovative educational methods. However, existing studies mostly focus on the universal biological enhancement effects of fragrances on cognitive functions, failing to delve deeply into the rich historical and cultural connotations carried by specific incenses and their potential as “cultural media”.

Agarwood, as an extremely important spiritual incense in Chinese and broader Eastern cultures, has a history intertwined with religious rituals, literati gatherings, medicinal health practices, and artistic creation. It is not merely an aromatic substance but a cultural symbol condensing philosophical concepts such as “tranquil introspection”, “elegance and detachment”, and “the unity of heaven and human”. The formation of agarwood originates from a tree’s self-healing after injury and fungal infection—a long and arduous process that bestows upon it the profound metaphor of “sublimation through suffering” and “precipitation of time”. This study posits that the key to introducing agarwood into general education lies in a paradigm shift: from viewing it as a natural substance with “cognitive enhancement functions” to understanding it as an embodied cultural medium capable of mobilizing bodily perception, carrying historical memory, and stimulating meaning-making.

The theory of “embodied cognition” emphasizes that cognition does not occur as isolated computation within the brain but originates from the interaction between the body and the environment; the mind is embodied, and bodily experience shapes our thinking and concepts. Based on this, this study raises the core question: How can agarwood be used as an “embodied cultural medium” to construct a general education model that integrates students’ sensory experience, emotional resonance, and rational cognition, thereby more effectively achieving the goals of cultural transmission and humanistic literacy cultivation? This study will address this question through theoretical construction and preliminary practical exploration.

## Theoretical Foundation: Agarwood as an Embodied Cultural Medium

### From Biological Stimulus to Cultural Medium: A Shift in Theoretical Paradigm

Existing natural science literature provides important empirical foundations for the educational application of olfaction. It indicates that specific plant aromas can enhance memory encoding and storage efficiency at a biochemical level through the olfactory-hippocampal pathway. This confirms the value of olfactory intervention in education. However, its paradigm is essentially “stimulus-response”, treating aroma as a neutral, functional, biological stimulus, with the goal of optimizing the cognitive hardware of “memory”.

This study aims to achieve a crucial paradigm leap. We regard agarwood as a cultural medium. A medium is not merely a channel for information transmission; its specific material properties, modes of use, and the historical-cultural network in which it is situated profoundly influence the nature of the information and its reception. The rarity of agarwood, its subtle and profound fragrance, its physical characteristic of “perishing” through combustion to release its scent, and its historical practice contexts alongside meditation, poetry, and the

guqin (ancient Chinese zither) collectively constitute the unique “grammar” of agarwood as a medium. When learners encounter agarwood, they receive far more than a singular molecular olfactory stimulus; they engage with an entire cultural script interwoven with materiality, ritual, text, and historical allusion.

### **Embodied Cognition: The Core Mechanism of Agarwood’s Mediating Function**

“Embodiment” is the core theory for understanding how agarwood functions as a cultural medium. The introduction of agarwood transforms cultural learning from a “disembodied” mental activity into an “embodied” whole-body practice.

- The body as a field of perception: Agarwood is first perceived by the body through olfaction. Its scent is invisible, inaudible, and must be experienced through the act of nasal breathing and the physical presence of the body in the scented space. This experience is direct, pre-reflective, capable of bypassing linguistic barriers and directly affecting emotions and the subconscious (e.g., inducing feelings of tranquility and solemnity). Research shows that olfactory stimuli can rapidly activate brain regions closely related to memory and emotion, such as the hippocampus and amygdala. The characteristic of agarwood being “calming”, in contrast to sandalwood which is “energizing and warming”, exemplifies its unique bodily perceptual effect.

- Experience shapes cognition: Reciting a Tang poem in the tranquil, focused olfactory environment created by agarwood offers a fundamentally different experience from reciting it in an ordinary classroom. The former places the body in a perceptual state approximating the historical context (a literati’s study). This embodied situational experience profoundly influences the understanding and memory of the text’s meaning. Memory is no longer isolated words but a “situated memory package” bundled with specific bodily sensations (subtle fragrance, tranquility). This aligns with embodied cognition theory, which posits that cognition is the product of body-environment interaction.

- The embodied sedimentation of cultural meaning: Through repeated engagement in classical reading, art appreciation, or quiet reflection within the ambiance of agarwood, the cultural connotations associated with agarwood (such as “indifference to fame and wealth” and “self-cultivation”) cease to be merely abstract concepts. Instead, they form a solid connection with the learner’s immediate bodily sensations (tranquility, pleasure, focus). Cultural values thus achieve “embodied sedimentation”, internalizing into aesthetic inclinations and behavioral dispositions. Research on the evolution of media technology points out a “co-existence” relationship between technology and the body, where new technologies rely on human physiological sensory mechanisms and emphasize perceptual experience. As an ancient “media technology”, the value of agarwood lies precisely in its ability to provide a deep, embodied emotional experience.

### **The Media Characteristics and Cultural Connotations of Agarwood**

- A medium of time: The formation of agarwood requires trees to be injured, infected, and produce resin over years, making it itself a symbol of the “precipitation of time”. In education, it can naturally guide students to resist instant, fragmented culture and experience the value of “slowness” and “accumulation”.

- A medium for shaping space: A wisp of fragrance can define a special cultural space (e.g., an elegant gathering, a meditation room). In an educational setting, burning incense can quickly transform an ordinary classroom into a learning “sanctuary” with a sense of cultural ritual, enhancing concentration and reverence for learning.

- A medium for triggering narrative: The scent of agarwood itself can act as a “narrative trigger”. Smelling agarwood may evoke associations with anecdotes about literati like Su Shi and Huang Tingjian, the trade history

of the Maritime Silk Road, or Buddhist offering rituals. It serves as an effective thread for initiating interdisciplinary cultural narratives.



Figure 1. Samples of natural agarwood and agarwood powder (Note: From the author’s collection).

### **Research Design and Methodology: A Qualitative Exploratory Approach**

To explore the practical feasibility of the aforementioned theoretical framework, this study adopted a qualitative research orientation, collaborating with a university to offer an eight-week thematic general education course titled “The Art of Incense and the Literati Mind: Exploring the Elegant Life of the Song Dynasty”.

#### **Course Model Design**

The course used “agarwood” as a central thread, constructing a “four-dimensional, integrated” teaching model:

1. The dimension of artifacts: Identifying agarwood specimens and understanding the forms and uses of incense utensils (incense burners, bottles, boxes).
2. The dimension of literature: Collaborative reading of texts concerning agarwood from the *Book of Songs*, *Songs of Chu*, Tang and Song poetry, and the *Xiang Sheng* (Compendium of Incense), analyzing their literary imagery and cultural metaphors.
3. The dimension of experience: Guided simple seal-incense burning experiences, sitting in silence, copying scriptures, or appreciating guqin music amidst the fragrance.

4. The dimension of reflection: Writing olfactory journals to record bodily sensations and psychological associations with each incense experience, and participating in group discussions on themes such as “the role of senses in historical understanding.”

### **Research Methods**

- Participant observation: The researcher, acting as a course assistant, documented students’ behaviors, expressions, and interactions across different teaching sessions, especially during experiential activities.
- In-depth interviews: After the course, semi-structured interviews were conducted with 15 voluntary student participants, focusing on: (1) how the agarwood experience altered their understanding of the course content (Song Dynasty culture); (2) the role of olfactory memory in knowledge recall; (3) personal feelings about “embodied learning”.
- Textual analysis: Collection and thematic coding of students’ olfactory journals and final reflective reports to analyze descriptions related to bodily experience, emotional connection, and cultural meaning-making.

### **Research Participants**

Thirty undergraduate students who elected the course, with academic backgrounds spanning humanities, sciences, and engineering.

## **Findings: The Embodiment of Olfactory Memory and Cultural Understanding**

Analysis of interview transcripts and observation records yielded the following preliminary findings:

### **Olfaction as a “Decoder” of Historical Context**

Most students reported that when reading Su Shi’s *Rhapsody on the Agarwood Hill* amidst the scent of agarwood, their comprehension of the “incense” character described in the text “suddenly became tangible”. They expressed, “I used to think ‘steadfast’ and ‘serene and distant’ were just adjectives; now it seems my nose understood first”. This experience suggests that the scent of agarwood, as a non-linguistic cue, helps students partially “decode” or “access” the historical sensory context in which the text was produced, narrowing the experiential gap between past and present. This echoes olfactory research indicating that odor can influence an individual’s perception of others, the environment, and even the self.

### **The “Scent-Knowledge” Connection and Deepening of Memory**

Echoing the discovery of the “scent-tagging memory method” in natural science, this study found that students spontaneously formed richer “scent-knowledge” connections. For example, one student mentioned, “Now, whenever I smell a woody scent similar to agarwood, words like ‘Hainan,’ ‘imported goods,’ and ‘scholar-officials’ automatically come to mind”, linking knowledge points in geography, economic history, and social history through olfactory memory. This type of memory is networked and situated, rather than isolated.

### **From Sensory Pleasure to Empathetic Cultural Identification**

In interviews, students commonly described a progression from sensory pleasure (“curiosity”, “pleasant smell”) to active exploration (“calming down”, “wanting to learn more”) and finally to empathetic cultural appreciation and identification (“feeling that the lives of our ancients were truly refined and meaningful”). The embodied experience of agarwood served as an effective starting point for stimulating their proactive exploration of the intrinsic value of traditional culture. Research shows that a pleasant olfactory environment can improve an individual’s emotional state, which may subsequently influence their social judgments and attitudes.

### **Enhancement of Concentration and Depth of Reflection**

Consistent with conclusions from natural science experiments, students reported being more easily focused and less distracted in the fragrant environment. More importantly, this enhanced concentration served not only knowledge reception but also fostered introspection and reflection. Sitting in silence or copying texts amidst the fragrance was described by many students as “the moment in the week when I can truly settle down the most”. This aligns perfectly with the character cultivation goal of “self-cultivation and moral nurturing” in general education and reflects the characteristic of agarwood as a cultural medium guiding one towards “tranquil introspection”.

### **Educational Application: Construction and Proposals for a General Education Model**

Based on the theoretical framework and practical findings, this study constructs a general education model using agarwood as an exemplar of an embodied cultural medium and proposes specific application plans.

#### **Model Construction: The Cultural Immersive Learning Cycle**

This model centers on “embodied experience”, forming a spiraling learning cycle:

Initiation (Sensory Contact) → Immersion (Context Creation) → Connection (Meaning Making) → Reflection (Internalization) → Expression (Externalization and Creation).

Agarwood plays a key role in the “Initiation” and “Immersion” phases, providing fertile perceptual ground for subsequent rational connection and reflection.

#### **Specific Application Proposals**

1. “Historical Site” reconstruction proposal: When teaching specific historical periods or cultural themes (e.g., “Life in Chang’an During the Tang Dynasty”, “Buddhist Art”), design corresponding “incense ceremony” scenes. Use historically documented incense (e.g., agarwood, sandalwood), combined with period-appropriate clothing, music, and artifact replicas to create a multi-sensory historical immersion classroom.

2. “Classical Text” collaborative reading proposal: Integrate classical reading sessions with incense experiences. For instance, when reading descriptions of incense in *Dream of the Red Chamber*, recreate the scene of “burning hundred-blend incense in a tripod”; when reading Wang Wei’s Zen poetry, sit in silent contemplation amidst the fragrance of agarwood. This provides a tangible sensory anchor for the textual “incense imagery”.

3. “Creative Expression” transformation proposal: Encourage students to create works inspired by their cultural experiences. This could involve writing a modern short story or poem with agarwood as a central image, designing a cultural creative product integrating incense culture, or producing a micro-documentary recording personal olfactory memories and cultural discoveries. This transforms internal embodied feelings into external cultural creations.

#### **Implementation Principles and Considerations**

- Non-coercive and guided: Emphasize the invitational nature of the experience over compulsion, respecting individual preferences and aversions to scents. Note that olfactory perception exhibits individual differences.
- Cultural interpretation first: Prior to use, fully explain the cultural background and symbolic meanings of agarwood to prevent the experience from devolving into an empty “sensory game”.
- Safety and inclusivity: Strictly screen for student allergies, provide a fragrance-free environment as an option, and ensure the inclusivity of the teaching plan.

### Conclusion and Outlook

Through theoretical transformation and preliminary practice, this study demonstrates the educational value of redefining agarwood from a “biological stimulus” to an “embodied cultural medium”. The findings indicate that embodied learning centered on agarwood can effectively promote students’ contextualized understanding of history and culture, deepen the networked connections of memory, and stimulate deep empathy progressing from sensory experience to cultural identification. The constructed educational model provides a referable pathway for how general education can utilize traditional material cultural resources to achieve the integration of knowledge transmission, skill development, and value cultivation.

This study has certain limitations: The practice period was relatively short, the sample size was limited, the long-term effects of olfactory memory were not sufficiently tracked, and the analysis of acceptance differences among students from different academic backgrounds was not in-depth. Future research could deepen in the following directions: (1) Conduct long-term longitudinal studies to track the long-term impact of embodied cultural experiences on students’ cultural perceptions and aesthetic tastes; (2) Develop experiential curriculum packages suitable for different educational levels (primary and secondary schools) using agarwood and other traditional cultural media as carriers; (3) Explore the application of the “embodied cultural medium” theory to educational transformation research in other traditional cultural fields (e.g., tea, guqin, calligraphy), forming a broader methodology for immersive traditional cultural education.

In conclusion, allowing agarwood to be “smelled” again in the classroom is not merely introducing an incense but introducing an epistemology—a philosophy of cultural learning that emphasizes the unity of body and mind and the primacy of experience. This may be a gentle yet powerful way to protect and revitalize the vitality of cultural tradition in an age of technological rationality.

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