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From Looking to Explaining: How Six Smithsonian High-School Lessons Structure Evidence-Based Interpretation of Cultural Objects

Yaxin Zhao[1,*]

[1] University of California, Los Angeles, Los Angeles, United States
* Correspondence: Yaxin Zhao, University of California, Los Angeles, Los Angeles, United States

Abstract: Museum lesson plans frequently integrate cultural objects into high-school history and humanities curricula; however, limited research investigates how the sequential ordering of instructional questions facilitates students' transition from basic visual observation to the formulation of evidence-based historical claims. This study systematically examines six public high-school lesson plans derived from the Smithsonian National Museum of Asian Art's Teaching China with the Smithsonian educational series. Specifically, we selected all lessons categorized under both High School and Cultural Interactions tags. By treating each individual discussion prompt as a discrete analytical unit, we coded the sequential progression of observation, inference, evidence citation, and hypothesis testing, alongside the integration points of curatorial background information. Our analysis reveals that the lessons consistently employ a four-step Describe-Analyze-Interpret-Inquire pedagogical framework, which deliberately delays the introduction of explicit historical facts until students have engaged in close visual examination. Nevertheless, while initial prompts remain firmly anchored to visible material traits, subsequent interpretive prompts frequently presuppose external historical knowledge. Crucially, these later prompts often fail to require students to explicitly reference visual or textual evidence, nor do they prompt the reevaluation of preliminary hypotheses. To address this pedagogical gap, this paper proposes a revised prompt design methodology that strengthens the scaffolding of evidence-based historical interpretation, thereby enhancing object-based learning outcomes in secondary education.

Keywords: museum education; object-based learning; historical thinking; inquiry scaffolding; visual analysis; secondary education

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1. Introduction

When high-school students look at a Tang-dynasty ceramic tomb figure or an eighteenth-century Qing imperial portrait, they can readily identify surface features such as posture, colors, or clothing. Moving from such initial description to a substantiated historical interpretation requires deliberate scaffolding [1]. Explaining how Afro-Eurasian trade networks influenced Tang burial practices, or why a Qing emperor adopted the iconography of a Buddhist bodhisattva, demands structured inquiry. Without guided questioning, students often remain at the level of superficial observation or resort to unsupported speculation disconnected from the object itself. Museum-developed lesson plans address this challenge by translating curatorial expertise into sequenced, classroom-ready tasks.

Although online museum lessons are widely disseminated, education research has predominantly focused on live, facilitator-led gallery experiences—such as visual thinking strategies—or on isolated, single-classroom implementations. Far fewer studies examine the internal architecture of written lesson plans, particularly the design and sequencing of prompts [1]. A central pedagogical question emerges: how do written lessons arrange observation, inference, evidence citation, and re-evaluation steps to

compel students to ground claims in direct analysis rather than rehearsing prefabricated background information? Furthermore, when historical context is introduced, do the questions explicitly invite students to test, refine, or revise their initial interpretations?

To investigate these design features, we analyze six high-school-level lessons drawn from the Smithsonian National Museum of Asian Art's Teaching China with the Smithsonian curriculum. All selected lessons are tagged for both High School and Cultural Interactions. Because no student work or assessment data are available, we make no assertions about learning outcomes [2]. Our analysis is confined to the intentional structure embedded in the published lesson texts. We ask three questions: (1) How do the six lessons sequence prompts related to observation, inference, evidence citation, and re-evaluation? (2) At what point does curatorial background information enter the lesson, and how is it integrated with student-facing questions? (3) How might a typical interpretive prompt be revised to require students to cite both observable visual features and relevant historical knowledge?

2. Theoretical Background

2.1. Historical Thinking and Material Culture as Primary Evidence

In history education, it has been demonstrated that reading like a historian does not come naturally. Experts employ three key habits when evaluating sources: sourcing, contextualizing, and corroborating [2]. Early studies in this area focused primarily on written records and historical photographs, and subsequent work extended the concept of primary source evidence to encompass texts, images, and physical objects alike. From this perspective, a museum object is not merely illustrative decoration for a textbook chapter; its material composition, surface treatment, form, and provenance collectively constitute evidentiary content that students can examine and interpret.

Integrating physical artifacts into high school instruction presents a persistent challenge. Adolescents typically lack immediate familiarity with Buddhist mudras, nomenclature for ancient bronze vessels, or Qing dynasty court rank insignia. It has been argued that museum-based learning is most effective when open-ended observation is supported by explicit disciplinary framing [2]. Similarly, close visual engagement with an object proves more durable when accompanied by purposeful questioning and historically grounded contextualization.

Given that classroom teachers cannot regularly transport thirty students to museum galleries, online lesson materials must assume responsibility for providing structured pedagogical support. The effectiveness of such resources hinges on how the worksheet sequences observational tasks—what features students notice first, when historical background information is introduced, and whether subsequent questions require students to refer explicitly to observable physical attributes of the object. Analyzing this instructional sequence reveals where historical reasoning is deliberately scaffolded and where critical gaps may remain [2].

2.2. Inquiry Scaffolding and the "What Makes You Say That?" Pivot

In museum teaching, Visual Thinking Strategies (VTS) are built around three concise questions: "What's going on in this picture?", "What do you see that makes you say that?", and "What more can we find?" The second question serves a pivotal function: it redirects attention from speculative interpretation to direct observation by requiring learners to anchor their claims in visible features of the work. When applied to historical artifacts, however, visual analysis alone is insufficient. Learners also require contextual knowledge—such as information about trade networks, cultural practices, or institutional frameworks—to interpret why an object exhibits particular forms or features.

This presents a sequencing challenge for lesson designers. Introducing background material prior to visual engagement risks reducing the activity to a reading comprehension exercise. Conversely, posing interpretive questions after reading—without explicitly prompting learners to connect observable details to contextual knowledge—leads to fragmented understanding, where visual analysis and historical

reasoning remain disconnected tasks. Examining how major cultural institutions sequence these elements reveals effective approaches to balancing observation and contextual integration [2, 3].

2.3. Relevance to Secondary Asian Humanities and Cross-Cultural Curricula

In U.S. high-school world history and Asian humanities courses, teachers frequently rely on museum-based educational materials when teaching regions outside their primary disciplinary expertise [4]. Cross-cultural topics such as Silk Road trade, Buddhist art, or nineteenth-century diplomacy risk oversimplification if students lack familiarity with visual conventions. Lessons that delay textual labels and prioritize sustained visual observation provide equitable entry points for all learners, regardless of prior art-historical knowledge. However, the extent to which such lessons foster historical thinking hinges on whether subsequent questions require students to ground interpretations in material evidence and revise initial assumptions.

3. Corpus Selection and Analytical Method

3.1. Corpus Boundary and Deduplication Rules

The sample comprises all six public lesson plans available on the Smithsonian National Museum of Asian Art's Teaching China with the Smithsonian portal that satisfy both the High School grade level criterion and the Cultural Interactions topic classification, as verified on November 21, 2026. Table 1 presents these six lessons, along with their primary instructional objects, central historical themes, and inquiry-based structures. To ensure analytical uniqueness, each lesson unit was treated as a single corpus item, regardless of whether it existed in both web page and PDF formats [1]. Object-specific catalog pages—such as those describing individual artifacts—were recorded solely as supplementary background resources rather than as additional lesson units.

Table 1. Corpus of Six Smithsonian High-School Lessons under the Cultural Interactions Filter

ID	Lesson Title	Focal Cultural Object(s)	Primary Historical / Cultural Theme	Inquiry Structure Observed
L1	China's Long Nineteenth Century: Foreign Influence and the End of Dynastic China	Late Qing photographs & court visuals (e.g., Empress Dowager Cixi with envoys)	Foreign encroachment, internal rebellion, dynastic transition	Look, Analyze, Interpret visual culture framework
L2	Connecting China and the Near East: Cross-Cultural Influences in Art	Blue-and-white porcelain & inlaid metalwork canteens	Silk Road exchange between Islamic world and China	4-stage: Describe, Analyze, Interpret, Inquire (9 prompts)
L3	Cultural Exchange in the Tang Dynasty: The Journey of a Tomb Figure	Tang ceramic Tomb Figure of a Groom [9]	Afro-Eurasian contact and Tang mortuary culture	4-stage: Describe, Analyze, Interpret, Inquire (8 prompts)
L4	Diving Deeper into Buddhism: Guanyin	Qing mammoth ivory sculpture of Guanyin as Buddha [10]	Transmission and localization of Buddhism in China	4-stage: Describe, Analyze, Interpret, Inquire (9 prompts)
L5	Portrait of the Qianlong Emperor	The Qianlong Emperor as Manjushri, the Bodhisattva of Wisdom	Qing imperial politics, Buddhism, Mandate of Heaven	Look / Describe, Zoom-in, Interpret / Contextualize (5 prompts)

L6	Symbolism in Cloisonné	Ming dynasty li-shaped cloisonné incense burner	Yuan-Ming technological transmission and ritual symbolism	4-stage: Describe, Analyze, Interpret, Inquire

3.2. Unit of Analysis and Four-Category Question Coding

For the four lessons with full verbatim prompt lists retrieved from official Smithsonian sources (L2, L3, L4, and L5), each discussion prompt was coded as a discrete unit, excluding broad unit-level Essential Questions. To comply with access restrictions, direct automated requests to asia.si.edu were avoided; all verbatim coding is confined to verified public excerpts from the Smithsonian [5]. Lessons L1 and L6 were analyzed at the verified stage level without inferring unprinted sub-prompts. Table 2 defines the four question codes and specifies the type of evidence each code requires.

Table 2. Analytical Coding Framework for Lesson Discussion Prompts

Coding Category	Operational Definition	Typical Linguistic Indicators	Expected Evidence Source
1. Observation	Directs attention to visible physical, formal, or compositional traits without requiring causal or historical explanation.	"What colors, shapes, and details stand out?" / "What kind of clothing is this figure wearing?"	Direct visual inspection of the object
2. Inference	Asks students to deduce function, identity, occupation, or symbolic meaning beyond literal surface traits.	"What might it have been used for?" / "What might his occupation be?" / "Who did it belong to?"	Visual clues combined with prior knowledge or reasoning
3. Evidence Citation	Explicitly commands students to justify an inference by pointing to specific visual features or textual sources.	"How can you tell?" / "What details tell you..." / "What symbols connect to..."	Explicit link between claim and visual/textual evidence
4. Re-evaluation	Prompts students to test, revise, or complicate an earlier visual hypothesis after receiving new historical context.	"What don't you recognize?" / "How does historical context change your initial view?"	Comparison of initial hypothesis vs. curatorial/historical evidence

Background knowledge integration was also documented: whether historical terms appear within the question itself (e.g., 'Mandate of Heaven' or 'Afro-Eurasia'), in teacher-facing preparatory notes prior to discussion, or only after initial student observation. This analysis is limited to the written lesson design and does not reflect classroom implementation or teacher adaptations [6].

4. Cross-Lesson Findings

4.1. Predominance of the Four-Stage Describe-Analyze-Interpret-Inquire Architecture

All six Smithsonian lessons follow a shared instructional backbone. Four lessons (L2, L3, L4, L6) organize their discussion prompts into four sequential stages: Describe, Analyze, Interpret, and Inquire [7]. Lesson 5 closely approximates this structure by progressing from whole-painting observation to detailed visual examination, then to considerations of political and religious meaning. Lesson 1 adapts a Look-Analyze-Interpret framework for late-Qing visual sources. Figure 1 illustrates how the cognitive demand of questions and the integration of historical context evolve across these stages.

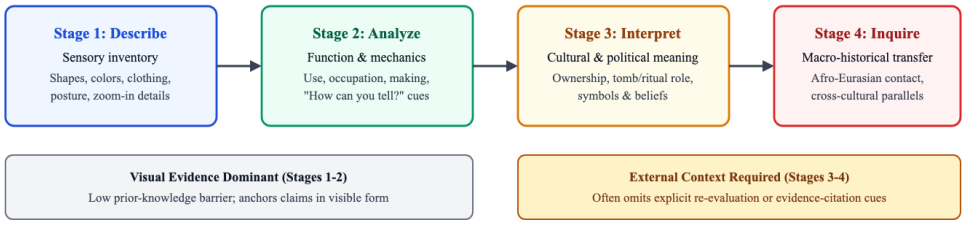


Figure 1. Recurring Four-Stage Inquiry Architecture and Transition from Visual to Contextual Evidence Across the Smithsonian Corpus

4.2. Cross-Lesson Comparison of Question Types and Evidence Demands

Table 3 compares all six lessons by Essential Questions, stage prompts, evidence cues, and re-evaluation triggers. In the four lessons with full verbatim prompt sets (L2 to L5, totaling 31 coded prompts), every lesson begins with Observation. No curatorial terminology appears while students list shapes, colors, clothing, or arm posture. Inference prompts constitute the middle group, asking students what an object did, who owned it, or why a ruler posed a certain way.

Table 3. Cross-lesson Comparison of Inquiry Stages, Evidence Cues, and Context Placement

Lesson	Essential Qs	Coded Prompts	Explicit Evidence-Citation Cues	Re-evaluation / Metacognitive Cues	Where Historical Context Enters
L1 (19th C. China)	3 (thematic)	Structural stages	Visual-culture evidence weighed against decline narrative	Implicit in challenging "Century of Humiliation" framing	Analyze/Interpret stages via historical photos
L2 (China & Near East)	3	9 (2 Desc, 3 Anal, 3 Interp, 1 Inq)	"How can you tell?" (Analyze)	None explicit in verbatim sequence	Interpret/Inquire (cross-cultural & religious ties)
L3 (Tang Tomb Figure)	3	8 (2 Desc, 3 Anal, 2 Interp, 1 Inq)	Implicit in hand/clothing clues; none explicit in Interpret/Inq	None explicit in verbatim sequence	Inquire stage (Afro-Eurasia & Tang tombs)
L4 (Guanyin)	4	9 (3 Desc, 3 Anal, 2 Interp, 2 Inq)	"What identifies..." & "What symbols connect..."	"What do you recognize? What don't you recognize?"	Interpret/Inquire (Buddhist doctrine & gender shift)
L5 (Qianlong Emperor)	3	5 (3 Look/Zoom, 2 Interp)	"What new details... tell you about how it was made?"	Zoom-in step adds new visual evidence	Embedded in Interpret prompt (Manjushri, Mandate of Heaven)
L6 (Cloisonné)	4	4-stage sequence	Connects li form & motifs to ritual/imperial context	Implicit in comparing archaic form vs. Ming enamel	Analyze/Interpret (Yuan/Islamic tech transfer)

The clearest gap emerges around explicit evidence citation and re-evaluation. Direct justification stems such as "What do you see that makes you say that?" appear only in isolated instances: "How can you tell?" in L2's Analyze stage, "What details tell you about how the artwork was made?" in L5, and "What symbols on the artwork connect to

Guanyin's identity..." in L4. Many later Interpret and Inquire prompts, such as "Who do you think this object belonged to?" (L3) or "Why is Guanyin sometimes portrayed as male and sometimes as female?" (L4), do not instruct students to reference a visible detail or written source. Explicit Re-evaluation prompts are even less frequent. Only L4's "What do you recognize? What don't you recognize?" explicitly distinguishes between familiar and unfamiliar elements [8].

4.3. Verbatim Prompt-Level Coding Inventory (L2-L5)

To ensure transparency and replicability, Table 4 presents the stage-by-stage coding assignments for the 31 verbatim prompts confirmed in Lessons L2 through L5. A vertical scan reveals a consistent pattern: Describe prompts focus exclusively on Observation; Analyze prompts integrate functional Inference with intermittent Evidence Citation cues; and Interpret / Inquire prompts emphasize cultural Inference without requiring students to revisit prior interpretations.

Table 4. Prompt-level Coding Matrix Across Verbatim-Verified Lessons (L2-L5)

Lesson & Stage	Representative Verbatim Prompt Excerpt	Primary Code	Evidence / Context Trigger
L2 · Describe	"What is the overall shape of the object? What shapes, colors, and details stand out? What do you notice about the images and decorations?"	Observation	Direct visual inspection of porcelain / canteen surface
L2 · Analyze	"What type of object is this, and what might it have been used for? How can you tell? What messages or ideas do these objects represent?"	Inference + Citation	"How can you tell?" requires linking form to inferred use
L2 · Interpret	"Who do you think these objects belonged to, and why? How do aspects of these objects communicate the relationship between different cultures and religions?"	Inference	External trade/religious context needed alongside motifs
L2 · Inquire	"What are some other historical or modern objects influenced by cross-cultural contact?"	Inference (Transfer)	Prior knowledge beyond the museum artifact
L3 · Describe	"What kind of clothing is this figure wearing? How is he holding his arms/hands?"	Observation	Visible garment cut and empty-hand posture
L3 · Analyze	"What activities would a person representing this figure engage in? What might his occupation be? What do you think would have been placed in his hands?"	Inference	Posture clues imply missing reins / groom role
L3 · Interpret	"Who do you think this object belonged to? What significance does this figure have in a Chinese tomb?"	Inference	Requires Tang mortuary context
L3 · Inquire	"What does this object suggest about the interaction between people from Afro-Eurasia during the period of the Tang dynasty?"	Inference (Macro)	Afro-Eurasian exchange context; no explicit citation cue
L4 · Describe	"What type of artwork is this? What colors, shapes, lines, or human and animal figures do you see? What details stand out to you?"	Observation	Visible carving and sculptural iconography
L4 · Analyze	"What identifies this artwork as Buddhist? What do you recognize? What don't you recognize?"	Citation + Re-eval.	Explicit metacognitive

			gap check ("don't recognize")
L4 · Interpret	"What role does Guanyin play in Chinese Buddhist beliefs? What symbols on the artwork connect to Guanyin's identity as the bodhisattva of compassion and mercy?"	Inference + Citation	Links doctrinal role to specific sculptural symbols
L4 · Inquire	"Why are Buddhas and bodhisattvas other than Shakyamuni worshipped by Buddhist practitioners? Why is Guanyin sometimes portrayed as male and sometimes as female?"	Inference (Macro)	Doctrinal and historical evolution beyond object surface
L5 · Look / Zoom	"What colors, shapes, and figures can you see...? Zoom in on one area: What new details do you notice, and what do they tell you about how the artwork was made?"	Observation + Citation	Zoomed-in details anchor inferences on production
L5 · Interpret	"Why do you think the Qianlong Emperor would commission a portrait of himself in this specific form (as a Buddhist bodhisattva)? How do ideas in Qing dynasty life and governance... contribute meaning?"	Inference (Dense)	Front-loads Manjushri & Mandate of Heaven context

A comprehensive review of the table also reveals variability in the distribution of evidence-based cues across lessons. Lessons 2 and 4 embed brief justification cues mid-activity, whereas Lesson 3 relies solely on implicit posture cues during the Analyze phase and omits visual citation entirely when addressing tomb ownership and Afro-Eurasian trade [9]. Presenting all prompts in parallel enables curriculum designers to precisely identify these transitional points prior to revising instructional materials.

4.4. Alignment between Essential Questions and Object-Level Inquiry

Every unit begins with Essential Questions that frame overarching historical inquiries: how artistic expression functions within societal contexts (L5), how tomb figures serve as historical evidence (L3), how material objects embody cultural beliefs (L2 and L6), and how Buddhist art evolved in China (L4). Figure 2 illustrates the degree to which these macro-level questions rely on intermediate prompts in Stages 2 and 3. When a lesson incorporates a clear evidentiary checkpoint in the middle—such as L2's 'How can you tell?' or L4's recognition task—students are required to connect physical characteristics of artifacts to historical understanding. In contrast, when such an intermediate bridge is absent, students may default to generalized textbook interpretations without engaging directly with object-based evidence [10].

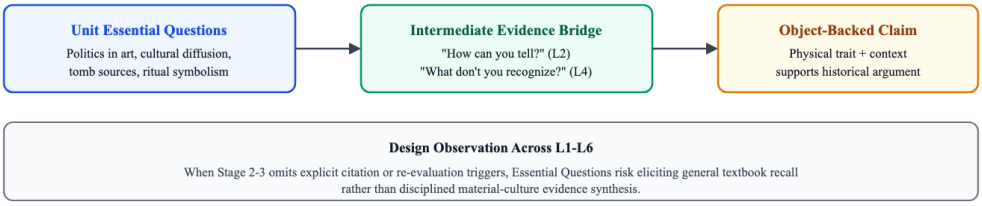


Figure 2. Alignment between Macro-Level Essential Questions and Intermediate Evidence-Scaffolding Bridges

4.5. Timing of Curatorial Background Knowledge and Classroom Trade-Offs

A key decision in designing museum-based lessons concerns the timing of introducing historical background knowledge. The six Smithsonian lessons employ three distinct approaches. First, delayed context—used in Lessons 2 to 4—reserves specialized

terminology for later stages, allowing students to initially engage with visual elements such as shapes, garments, or postures without encountering terms like bodhisattva or Afro-Eurasia [2]. Second, prompt-embedded context—in Lesson 5—integrates historical concepts directly into the culminating question, explicitly naming figures and frameworks such as Manjushri and the Mandate of Heaven within the task prompt itself. Third, technique-first context—in Lesson 6—begins by linking visual observation to material production methods, for example, the application of colored glass paste within copper cloisons, before progressing to interpretive dimensions including ritual symbolism.

Each approach entails pedagogical trade-offs. Deferring contextual information supports unmediated visual engagement and reduces initial cognitive load. However, without a subsequent instructional step prompting students to compare their initial observations with the introduced historical content, the contextual information risks appearing disconnected from the core activity. Embedding complex historical terminology within a single summative question enhances pacing for advanced learners but may challenge novice learners who benefit from incremental conceptual scaffolding. Table 5 summarizes these four context timing strategies.

Table 5. Comparison of Curatorial Context Timing Strategies Across the Six Smithsonian Lessons

Timing Strategy	Lessons	Primary Pedagogical Benefit	Potential Instructional Risk
Delayed Contextualization	L2, L3, L4	Protects unprejudiced visual noticing before terminology enters.	Students may not revisit initial guesses unless prompted to re-evaluate.
Prompt-Embedded Context	L5	Connects zoomed-in details directly to Manchu political concepts.	Dense multi-concept wording can overwhelm novice readers.
Technique-First Context	L6	Anchors cross-cultural exchange in physical craft and firing labor.	Requires bridging craft mechanics to broader ritual symbolism.
Historiographical Framing	L1	Positions photographs as counter-evidence to simplified decline narratives.	Depends heavily on teacher-supplied late-Qing political background.

4.6. Pacing Across a High-School Class Period

Examining the six lessons from a temporal perspective clarifies why question sequencing is critical. Most high-school history classes in this context last 45 to 55 minutes. Within a single class period, instructors typically allocate approximately ten minutes to initial Describe prompts, ten to fifteen minutes to Analyze tasks, and the remaining twenty minutes to Interpret and Inquire activities. When Stage 1 and Stage 2 emphasize direct visual observation without requiring supplementary reading materials, all students can engage simultaneously before textual resources introduce pacing delays.

Challenges often emerge during the final twenty minutes as class time nears its conclusion. If the Interpret or Inquire prompt does not explicitly require students to identify two observable visual features of the artifact or to compare their earlier inference with contextual museum information, time pressure may lead learners to default to generalized textbook responses. Embedding a concise evidentiary requirement directly within these concluding prompts ensures sustained focus on the primary artifact, even under tight scheduling constraints [11].

5. Representative Case Studies

5.1. Case 1: Cultural Exchange in the Tang Dynasty (L3 - Tang Tomb Figure of a Groom)

Lesson 3 examines a glazed Tang dynasty ceramic tomb figure of a groom and illustrates how the Smithsonian presentation maintains an initial focus on direct visual observation. In the Describe stage, students respond to two straightforward visual questions: "What kind of clothing is this figure wearing?" and "How is he holding his

arms/hands?" Notably, the lesson refrains from assigning labels such as "groom" or "Central Asian" at this early stage [2]. During the Analyze stage, three questions connect physical posture to social function: "What activities would a person represented by this figure typically perform? What might his occupation have been? What objects do you think were originally held in his hands?" The empty hands—once gripping horse reins—serve as a key visual cue for inferring his role.

A pedagogical gap emerges after the Analyze stage. In the Interpret stage, students are asked: "Who do you think this object belonged to? What significance does this figure hold within a Chinese tomb context?" In the Inquire stage, the scope broadens significantly: "What does this object suggest about interactions among peoples across Afro-Eurasia during the Tang dynasty?" Neither question explicitly directs students to ground their responses in observable features of the sculpture—such as non-Han facial characteristics, lapel style indicative of Central Asian attire, or traces of equestrian equipment—to substantiate claims about cross-regional exchange. Nor does the lesson prompt students to reconsider their initial identification of the figure upon learning it was interred in an elite Tang tomb.

It is readily apparent that a high-school student could address the final Inquire question without re-examining the ceramic figure. A student familiar with general world history narratives on Silk Road connectivity might compose a brief response referencing trade caravans and foreign merchants without citing any formal visual evidence from the sculpture itself. Introducing a mandatory requirement to cite specific physical attributes in the Inquire stage transforms the tomb figure from a supplementary illustration into rigorous primary evidence.

5.2. Case 2: Portrait of the Qianlong Emperor (L5) Versus Guanyin (L4)

Comparing L5 (Portrait of the Qianlong Emperor) with L4 (Diving Deeper into Buddhism: Guanyin) shows two distinct approaches to introducing complex historical concepts [12, 13]. L5 introduces a structured visual analysis step between broad observation and interpretive reasoning: students first observe colors, shapes, and mood, then focus on a specific detail to examine technical execution. However, the interpretive prompt shifts abruptly to dense conceptual framing: "Why do you think the Qianlong Emperor would commission a portrait of himself in this specific form (as a Buddhist bodhisattva)?" followed by "How do ideas in Qing dynasty life and governance—such as Buddhism, the Mandate of Heaven, and foreign interactions—contribute meaning to this portrait?" One question presumes the curatorial identification ("as a Buddhist bodhisattva") and integrates three major thematic domains simultaneously.

L4 follows a more scaffolded approach. It reserves technical terminology for later stages and begins with an open recognition prompt: "What identifies this artwork as Buddhist? What do you recognize? What don't you recognize?" Inviting students to name uncertainties creates space for authentic inquiry before introducing Guanyin as the embodiment of compassion or discussing variations in iconographic representation across periods. In the Interpret and Inquire stages, L4 builds directly on prior visual engagement by asking which features of the ivory carving convey compassion and mercy, and why veneration extends to figures beyond Shakyamuni. Students must return to posture, gesture, and carving details before engaging broader religious contexts [14]. Figure 3 puts L3 through L5 side by side.

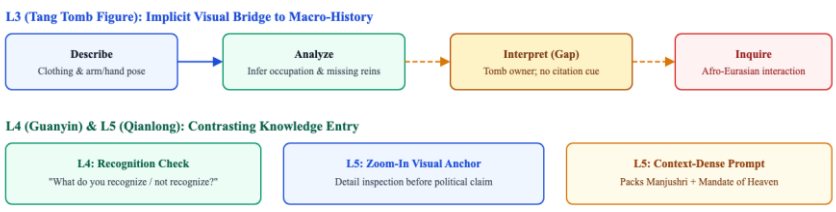


Figure 3. Comparison of Question-To-Evidence Coupling Across Lesson 3 (Tang Tomb Figure), Lesson 4 (Guanyin), and Lesson 5 (Qianlong Emperor)

5.3. Case 3: Cross-Cultural Material Transmission in L2 (China and the Near East) and L6 (Cloisonné)

Lessons 2 and 6 examine how crafts and decorative motifs were transmitted along Silk Road trade routes. In Lesson 2, which explores connections between China and the Near East, students compare blue-and-white porcelain with inlaid metalwork canteens. They progress from identifying surface patterns in the Describe phase to interpreting functional clues in the Analyze phase—such as "What might it have been used for? How can you tell?"—and finally to considering religious and cultural interactions in the Interpret phase. The question "How can you tell?" functions similarly to standard visual thinking strategies, anchoring functional interpretations directly in observable features of shape and decoration before addressing broader cultural exchange. In the final stage, the lesson broadens inquiry to ask what other historical or contemporary objects reflect cross-cultural contact, encouraging students to extend their visual analysis skills to diverse artifacts.

Lesson 6, focused on symbolism in cloisonné, centers on a layered Ming-dynasty tripod incense burner modeled after an ancient bronze li vessel, adorned with turquoise enamel and lotus motifs and crowned with a Yuan-era jade knob. Its four-stage structure guides students from the physical craft process—including soldering fine copper wires to form cloisons and repeatedly firing vitreous paste—to the significance of archaic ritual form and the influence of Yuan-period Islamic metalworking traditions. Close examination of the turquoise surface, auspicious iconography, and later-added wooden lid reveals how a single object integrates material, stylistic, and symbolic elements spanning multiple dynasties and geographic regions. Collectively, Lessons 2 and 6 demonstrate how attention to tangible craft details, combined with structured justification prompts, renders Silk Road cultural exchange concrete and analytically accessible.

5.4. Case 4: Challenging Macro-Narratives through Visual Culture in L1 (China's Long Nineteenth Century)

Lesson 1 (China's Long Nineteenth Century: Foreign Influence and the End of Dynastic China) shifts from single studio artifacts to late-Qing historical photographs, including diplomatic portraits of Empress Dowager Cixi with foreign envoys. Applying the Look-Analyze-Interpret sequence to such images aligns with established sourcing practices for pictorial evidence. Rather than presenting these photographs as straightforward records of dynastic transition, the lesson guides high-school students to examine visual indicators of court agency and diplomatic presentation alongside conventional textbook narratives [15].

Examining all four cases (L1, L2/L6, L3, and L4/L5) reveals a consistent pattern [16]. When a lesson begins with unlabeled observation and incorporates a clear evidence-checking prompt—such as L4's recognition check or L2's "How can you tell?"—students engage with the object as substantive historical evidence. In contrast, when interpretive prompts foreground broad historical concepts—like L3's Afro-Eurasian framing or L5's reference to the Mandate of Heaven—the connection between observable object features and historical reasoning remains implicit. For a high-school teacher managing a 45-minute class, this implicit gap is consequential: without an explicit cue on the worksheet, students may respond to the final prompt using general background knowledge while bypassing the artifact entirely.

6. Question Redesign and Pedagogical Discussion

6.1. Redesigning an Interpretive Prompt for Explicit Evidence and Revision

To show how a small wording change can close that gap, Table 6 compares the original Inquire prompt from Lesson 3 against a revised version. The original prompt asks: "What does this object suggest about the interaction between people from Afro-Eurasia during the period of the Tang dynasty?" A student can easily answer that line from memory using general Silk Road facts without ever pointing to the clay groom or checking their earlier guess against the museum note [17].

Our revised prompt follows established principles for historical reasoning. First, students must cite two visible traits from the statue plus one historical detail from the object note. Second, they must state whether the note confirms or changes their earlier guess about who the figure is. Third, they must identify one aspect about the tomb figure that remains uncertain, thereby practicing source critique rather than making sweeping claims.

Table 6. Side-by-side Comparison of Original and Redesigned Inquiry Prompt for Lesson 3 (Tang Tomb Figure)

Attribute	Original Smithsonian Prompt (L3 Inquire)	Redesigned Evidence-Based Prompt
Prompt Text	"What does this object suggest about the interaction between people from Afro-Eurasia during the period of the Tang dynasty?"	"After reading the museum object note [9], revisit your earlier guess about who this figure represents. Cite at least two visual details (such as clothing, posture, or facial features) and one historical fact from the note to explain what this tomb figure reveals—and what it leaves uncertain—about Afro-Eurasian contact in Tang China."
Evidence Requirement	Implicit; students may rely solely on general Silk Road background.	Explicit dual-source rule (2 visual traits + 1 curatorial/historical detail).
Re-evaluation Trigger	None; does not reference earlier Describe/Analyze hypotheses.	Explicitly requires students to revisit and test their initial guess.
Epistemic Boundary	Unbounded macro-historical inference.	Asks what a single artifact "leaves uncertain," modeling Seixas's source critique [3].

6.2. Implications for Museum Curriculum Design and Secondary Humanities

Analysis of all six lessons reveals a robust foundation upon which museum educators can further develop curriculum. The Describe-Analyze-Interpret-Inquire structure supports open-ended observation at the outset and prevents overly technical wall-label language from overshadowing student curiosity. Two targeted refinements would significantly strengthen evidentiary rigor. First, incorporating a brief Visual Thinking Strategies–inspired follow-up—such as "Which visual detail supports your claim?"—within the Interpret phase ensures that subsequent historical reasoning remains grounded in direct artifact engagement. Second, decomposing complex prompts—like the multi-layered inquiry in Lesson 5 concerning Buddhism, the Mandate of Heaven, and Qing dynasty foreign relations—into sequential, focused steps enables students to examine one historical concept at a time against closely observed visual evidence, as illustrated in Table 7 and Figure 4.

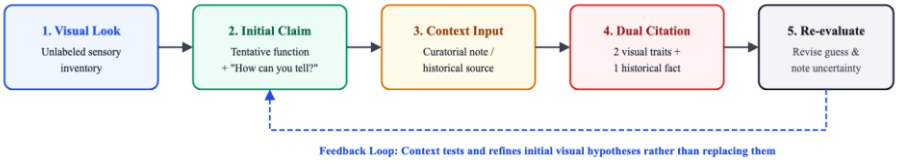


Figure 4. Proposed Five-Step Evidence-Loop Scaffolding Model Integrating Dual-Source Citation and Hypothesis Re-Evaluation

Table 7. Sequenced Sub-Prompt Decomposition for Lesson 5 (Portrait of the Qianlong Emperor)

Step	Scaffolded Sub-Prompt	Pedagogical Purpose
Step 1 (Visual)	"Which visual attributes (posture, halo, mudra, throne, or inscriptions) distinguish the central figure from a conventional Confucian court portrait?"	Anchors political analysis in observable iconography before introducing doctrinal terms.
Step 2 (Contextual)	"After reading the brief note on Tibetan Buddhism and Manchu rule, why might the emperor adopt the guise of Manjushri, the Bodhisattva of Wisdom?"	Connects one specific historical lens to the previously inventoried visual traits.
Step 3 (Synthesis)	"How does combining Buddhist wisdom imagery with Qing imperial regalia revise or complicate your first impression of the portrait's mood?"	Triggers explicit hypothesis re-evaluation across visual and political layers.

Museum educators need not discard existing lesson materials to implement these adjustments. In typical classroom settings, teachers may use the original Smithsonian object sheet unchanged and simply introduce two concise procedural guidelines on the board prior to the Interpret stage: identify two observable features of the object, and reflect on whether the accompanying text revised their initial interpretation. For museum curriculum teams revising digital units, embedding these two checks directly into Stage 3 and Stage 4 templates ensures consistent evidence citation as an integral part of the learning process, rather than depending on individual teacher adaptation (As shown in Table 8).

Table 8. Summary of Curriculum Redesign Recommendations Aligned with Historical Thinking Heuristics

Observed Structural Gap	Affected Lessons	Recommended Design Modification	Theoretical Alignment
Interpret/Inquire prompts omit visual citation	L2, L3, L4	Append explicit dual-source rule (cite 2 visual traits + 1 textual/curatorial detail).	VTS evidentiary pivot [5]; Seixas primary evidence [3]
Absence of hypothesis re-evaluation step	L2, L3, L5	Add a closing check asking students to confirm or revise their Stage 1-2 guess.	Wineburg corroboration & revision [1, 2]
Context-dense single interpretive prompt	L5	Decompose into three sequenced sub-prompts (visual, single historical lens, synthesis).	Scaffolded ZPD progression [6, 7]
Implicit link between craft labor and exchange	L6	Pair physical firing/cloisonné cues with explicit cross-cultural diffusion questions.	Object-based contextualization [7]

6.3. Methodological Limitations and Future Classroom Research

Two limitations constrain this study. First, automated requests to asia.si.edu triggered anti-bot protections, so verbatim prompt counts are limited to verified indexed excerpts (L2 to L5), whereas L1 and L6 are coded at the verified stage level. Future work using fully downloaded PDF packets can enable line-by-line coding across all sub-activities. Second, published lesson plans reflect curriculum design intent rather than actual classroom implementation or student learning outcomes [1]. Determining whether redesigned prompts—such as those in Table 5—enhance evidence citation in student essays requires empirical classroom trials, analysis of scored student writing, and teacher interviews.

Even within these constraints, analyzing the published question sequence provides immediate utility for museum educators and learning designers [16]. Given that thousands of high-school teachers access public lesson packets without participating in museum workshops, the written prompt sequence often substitutes for live facilitation. Ensuring each interpretive prompt explicitly identifies its expected evidence source—and invites students to compare their initial visual interpretation with the accompanying historical note—strengthens the curriculum's standalone clarity prior to any classroom implementation.

6.4. Agenda for Empirical Classroom Validation

These structural findings indicate four directions for classroom-based empirical validation. First, audiovisual documentation of high-school history seminars employing L3 or L5 would reveal how instructors verbally supplement evidence prompts omitted from printed materials. Second, a comparative analysis of student essays produced under the original L3 prompt and those generated using the dual-source prompt (Table 5) would assess whether students incorporate more precise visual descriptors and more frequently test their initial interpretations. Third, an examination of curricular materials developed by the Smithsonian Institution and its museum partners would determine whether deferring historical context without incorporating a re-evaluation prompt is a prevalent practice in secondary-level museum educational packets. Fourth, structured interviews with museum curriculum developers and experienced high-school history teachers would illuminate how constraints—including class period duration, grade-appropriate reading complexity, and state-mandated history standards—influence the allocation of content between student worksheets and teacher guides [10].

7. Conclusion

Across six high-school lessons in the Teaching China with the Smithsonian series, cultural objects follow a clear arc from close looking to cross-cultural explanation. By keeping specialized names out of early Describe and Analyze prompts, the lessons provide an accessible starting point for unfamiliar East Asian art. At the same time, systematic prompt coding reveals that later Interpret and Inquire questions often omit explicit evidence-citation stems and rarely prompt students to revise earlier interpretations once historical context is introduced.

Small structural edits can close that gap without compromising the strengths of the four-stage instructional flow. Introducing a dual-source citation requirement, decomposing context-heavy portrait prompts into discrete steps, and concluding each lesson with a hypothesis-checking task offer museum educators a practical means to scaffold close looking toward evidence-backed historical writing. Future classroom trials with high-school teachers and student essays can assess how effectively these prompt revisions strengthen material evidence citation in live instruction.

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