



‘CURATOR QUEST’: A Decision-Based Framework for Agency and Critical Learning in Museum Education

EVA GARCIA-BELTRAN¹

egarcibe@nebrija.es

LEOPOLDO ALONSO CALLEALTA OÑA²

leopoldo.alonso@universidadunie.com

¹Universidad Antonio de Nebrija, Spain

²Universidad UNIE, Spain

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ABSTRACT

Museums are visual culture spaces where curatorial decisions construct meaning, representation, and cultural visibility. Yet these choices remain largely invisible to visitors, limiting critical visual literacy and educational agency. This article proposes 'Curator Quest', a conceptual framework for decision-based museum education that repositions curatorial agency as a pedagogical strategy. Drawing on visual culture theory, museum studies, and decision-based learning, the framework conceptualizes learning as critical engagement with curatorial dilemmas: visual selection, narrative construction, representational voice, mediation, and accessibility. Decision trees function as epistemic devices that make curatorial reasoning visible. The article presents a theoretically-grounded, design-oriented contribution illustrated through a digital prototype, proposing a transferable framework for developing critical visual agency in museum education.

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1. Introduction

Museums have long been recognised as privileged spaces for the production, mediation, and legitimisation of visual meaning. Rather than functioning as neutral containers of objects, exhibitions operate as complex visual and discursive constructions in which curatorial decisions actively shape how cultural content is framed, interpreted, and remembered (Falk & Dierking, 2013). From a visual culture perspective, this process of meaning construction is inherently visual and political. Museums do not simply organize objects in space; they orchestrate visual regimes that determine what becomes visible, how it is seen, and whose gaze is privileged (Mirzoeff, 2015). Exhibition design operates as a form of visual rhetoric, where spatial arrangements, lighting, juxtaposition, and labeling combine to produce specific ways of seeing (Alpers, 1991). These visual decisions are never neutral: they reflect and reproduce power relations, cultural hierarchies, and epistemological assumptions about knowledge, authenticity, and representation (Carbonell, 2012). Understanding museums through the lens of visual culture therefore requires examining not only what is shown, but how visual meaning is actively produced through curatorial practice—and what remains systematically invisible.

A substantial body of research in museum studies and visual culture has challenged the assumption of exhibition neutrality. Scholars have shown that exhibitions are never transparent reflections of culture, but rather outcomes of institutional, ideological, and epistemic decisions that determine what is shown, how it is shown, and whose perspectives are legitimised (Hooper-Greenhill, 2007; Macdonald, 2006). This apparent naturalisation of curatorial choices contributes to what may be described as the false neutrality of the exhibition: the perception that museum displays simply present reality rather than actively constructing visual and cultural narratives.

Within educational contexts, this invisibility of curatorial decision-making has important implications. Traditional models of museum education have often positioned visitors as recipients or consumers of curated knowledge, emphasising interpretation, appreciation, or engagement with pre-defined narratives (Falk & Dierking, 2013). While recent developments in digital mediation and interactive technologies have expanded opportunities for participation, interactivity alone does not necessarily imply agency. As several authors have noted, interactive experiences may still reproduce highly controlled interpretive frameworks, leaving underlying curatorial logics unexamined (Ranci re, 2009; Simon, 2010).

This distinction between participation and agency is particularly relevant in educational theory. Agency, understood as the capacity of learners to intervene in and influence meaning-making processes, extends beyond surface-level interaction to involve decision-making, responsibility, and epistemic positioning (Klemen i , 2017; Mameli et al., 2023). In museum contexts, fostering such agency requires more than enabling visitors to navigate content; it requires making visible the decisions through which exhibitions are constructed and inviting learners to engage with their consequences.

Despite growing interest in immersive technologies, virtual museums, and augmented reality experiences, relatively few educational approaches have explicitly addressed the pedagogical potential of exposing curatorial decision-making itself. As a result, learners may experience richer forms of access and engagement without necessarily developing a critical understanding of how visual narratives are produced, stabilised, and legitimised within museums (Parry, 2013; Tallon & Walker, 2008).

This article addresses this gap by foregrounding curatorial decision-making as a central object of museum education. It argues that meaningful learning in museum contexts can be fostered by shifting the educational focus from consuming exhibitions to curating meaning. From this standpoint, decision-making is not treated as a technical or professional skill alone, but as an epistemic practice through which power, representation, and visibility are negotiated (Tang, 2023).

Accordingly, the article proposes a conceptual and design-based contribution centred on ‘Curator Quest’, a decision-based digital artefact that externalises curatorial reasoning through structured decision trees. Rather than simulating a museum visit, the artefact invites learners to adopt a curatorial role and to experience how decisions related to representation, narrative structure, voice, mediation, and accessibility shape cultural meaning. In doing so, it positions decision-making as a pedagogical mechanism for developing visual and epistemic agency.

The objective of this article is twofold. First, it seeks to contribute to scholarship in museum education and visual culture by articulating a framework that conceptualises learning as engagement

with curatorial decisions rather than passive interpretation. Second, it presents ‘Curator Quest’ as a design-oriented artefact grounded in instructional design principles based on agency and transparency. The article adopts a conceptual approach and does not aim to empirically evaluate learning outcomes; instead, it positions the artefact as a transferable framework capable of informing future educational designs and research in museum and cultural contexts.

2. Theoretical Framework: Museums, Visual Culture, and Curatorial Agency

2.1. Museums as Visual Culture Dispositives: Narration, Power, and Representation

Within visual culture studies, museums have been theorized as dispositives: complex apparatuses that organize vision, knowledge, and social relations (Bennett, 1995). Unlike traditional art historical approaches that focus on individual objects or aesthetic values, visual culture analysis examines how exhibitions function as integrated systems of visual communication where meaning emerges from relationships, contexts, and viewing conditions (Henning, 2006). This perspective foregrounds the museum as a site where visual literacy is both enacted and contested: visitors do not simply receive information but are positioned within specific regimes that shape how cultural difference, historical narrative, and identity are visualized and understood (Mirzoeff, 1999). Curatorial decisions—from wall color to object proximity—actively construct these visual epistemologies, yet their logic remains largely opaque to museum audiences.

Visual culture scholars and museum theorists have long argued that exhibitions should be read as discursive formations rather than neutral displays. Parry (2013) conceptualised the modern museum as a cultural technology that produces particular ways of seeing and knowing, closely linked to institutional power and epistemic authority. Similarly, Hooper-Greenhill (2007) emphasised that exhibitions encode specific interpretive positions, shaping how visitors are invited to understand cultural objects and their significance. Meaning, therefore, is not inherent in the artefacts themselves but emerges through curatorial practices that organise and contextualise visual material.

This narrative dimension of exhibitions is inseparable from processes of selection and exclusion. Every exhibition implies choices regarding what is included, what is omitted, and how relationships between objects are established. As Tang (2023) notes, curatorial decisions are inherently political, as they privilege certain narratives while marginalising others. These decisions shape not only the content of exhibitions but also the interpretive pathways available to visitors, influencing how cultural memory and identity are constructed.

Power relations are thus embedded in exhibition design at multiple levels. Decisions concerning authorship, voice, and representational authority determine whose perspectives are legitimised and whose remain peripheral or absent (Rancière, 2009). Even when museums adopt participatory or inclusive strategies, the framing of participation itself remains subject to curatorial control, often leaving deeper structures of meaning-making intact (Xiaoqing et al., 2025). As a result, exhibitions may appear open and accessible while still operating within tightly bounded interpretive frameworks.

Understanding museums as visual narratives has important implications for education. If exhibitions are recognised as constructed representations rather than transparent windows onto culture, then museum learning cannot be reduced to interpretation or appreciation alone. Instead, educational approaches must address the processes through which visual narratives are produced, negotiated, and stabilised. Making these processes visible allows learners to critically engage with museums not only as sites of knowledge consumption but as arenas where meaning, power, and representation intersect (Zhai & Zhang, 2025).

Within this conceptualisation, the act of curating becomes a pedagogically significant practice. By foregrounding the narrative and discursive nature of exhibitions, museum education can move toward approaches that invite learners to interrogate and experiment with curatorial choices themselves. This shift lays the groundwork for educational designs that position decision-making as a central mechanism for developing visual and epistemic agency—an issue explored in the following sections.

2.2. Agency in Educational and Cultural Contexts

The concept of agency has gained increasing relevance across educational and cultural research, particularly in relation to student-centred learning, participatory practices, and digital environments.

However, despite its frequent use, agency remains a concept that is often ambiguously defined or conflated with surface-level forms of participation or interactivity. In educational theory, agency refers not merely to engagement or activity, but to the learner's capacity to act intentionally, to make meaningful choices, and to influence the construction of knowledge and learning contexts (Klemenčič, 2017; Mameli et al., 2023).

Within this framework, agency extends beyond behavioural interaction to encompass what has been described as epistemic agency: the ability of learners to take responsibility for knowledge-building processes, including deciding what is relevant, how meaning is organised, and which perspectives are foregrounded (Damsa et al., 2010; Mameli et al., 2023). Epistemic agency involves decision-making under conditions of uncertainty, negotiation of alternatives, and awareness of the consequences of one's choices—dimensions that are particularly pertinent in cultural and museum contexts.

In museum education, the distinction between interactivity and agency is especially significant. Digital technologies have enabled visitors to interact with exhibits through touchscreens, multimedia guides, and immersive environments, often under the assumption that increased interaction leads to deeper learning. However, as Rancière (2009) argues, participation does not automatically imply emancipation. Visitors may be active in navigating content while remaining passive in relation to the interpretive frameworks that structure meaning. From this perspective, interactivity risks becoming a controlled form of participation that leaves underlying power relations intact (Stenalt, 2021).

Agency in cultural contexts therefore requires a more substantive shift: from interacting with curated content to engaging in the processes through which content is curated and meaning is produced. Simon's (2010) work on participatory museums highlights this tension, noting that participatory practices often invite contribution while retaining curatorial authority over framing, selection, and interpretation. While such approaches increase inclusion and engagement, they do not necessarily redistribute epistemic control.

Educational research reinforces this distinction. Klemenčič (2017) emphasises that student-centred learning reaches its full potential only when learners are positioned as agents capable of influencing learning pathways and environments, rather than as participants responding to predefined options. Similarly, Mameli et al. (2023) conceptualise agency as a relational and context-dependent phenomenon, shaped by opportunities to make consequential decisions and by learners' perceptions of their capacity to act meaningfully within a given system.

Applying these insights to museum education suggests that fostering agency involves exposing learners to the decision-making processes that underpin exhibitions. Rather than focusing solely on interpretation or appreciation, educational designs can invite learners to engage with curatorial dilemmas—such as choices about representation, narrative structure, voice, mediation, and accessibility—as sites of learning. In this sense, agency emerges not from interaction with artefacts, but from participation in the epistemic practices through which exhibitions are constructed.

This reconceptualisation of agency provides the foundation for decision-based approaches to museum education. By framing learning as engagement with curatorial choices and their consequences, such approaches align with broader educational theories that position decision-making as a core mechanism for developing critical understanding and responsibility (Erstad et al., 2025). The following section builds on this premise by examining decision-based learning as a strategy for making epistemic processes transparent and pedagogically productive.

2.3. Decision-Based Learning and Epistemic Transparency

Decision-based learning has been increasingly recognised as a pedagogical approach capable of supporting higher-order thinking, reflection, and learner agency by placing decision-making at the centre of the learning process. Unlike instructional designs based on the transmission of content or the execution of predefined tasks, decision-based approaches foreground choice, uncertainty, and consequence as core learning mechanisms (Hannafin et al., 2014; Jonassen, 2011). Learning, from this perspective, emerges through the act of deciding among alternatives that are meaningful, plausible, and consequential.

In educational research, decision-making has been associated with the development of critical thinking and responsibility, particularly when learners are required to justify their choices and reflect on their implications (Pimblett et al., 2025). Rather than guiding learners toward correct answers, decision-based learning environments are designed to expose trade-offs, competing perspectives, and

contextual constraints. This orientation aligns closely with constructivist and constructionist traditions, which emphasise learning as an active process of meaning-making rather than passive reception (Marín et al., 2025).

Within technology-enhanced learning environments, decision trees have been used as a structural mechanism to organise complex problem spaces and to scaffold learners’ reasoning processes. However, their pedagogical potential extends beyond problem-solving or assessment contexts. When designed as non-linear and non-evaluative structures, decision trees can function as transparency devices that make underlying epistemic processes visible. By externalising decision paths, they allow learners to see how knowledge, narratives, or outcomes are constructed through sequences of choices rather than fixed rules (Ainsworth, 2006).

This function of transparency is particularly relevant in domains where meaning is inherently contingent, negotiated, and political—such as museums and cultural institutions. Exhibitions are the result of layered decisions concerning selection, narrative organisation, mediation strategies, and accessibility, yet these decisions are typically hidden behind the apparent coherence of the final display. As a result, visitors encounter exhibitions as finished products rather than as outcomes of deliberative processes shaped by institutional priorities and power relations (Hooper-Greenhill, 2007; Macdonald, 2006).

Decision-based learning offers a way to address this opacity by repositioning curatorial decision-making itself as the object of learning. Rather than asking learners to interpret or evaluate an exhibition after the fact, decision-based designs invite them to engage with the same types of dilemmas faced by curators, such as balancing representation and coherence, negotiating authority and voice, or reconciling accessibility with interpretive depth. In this context, decision trees serve not to guide learners toward optimal solutions, but to make visible the contingent and constructed nature of cultural narratives.

Importantly, this approach requires a deliberate departure from evaluative logic. If decision-based learning is reduced to branching paths with correct or incorrect outcomes, its potential to foster agency is undermined (Dymek et al., 2025). As Hannafin et al. (2014) argue, learner-centred environments must preserve openness and allow for multiple legitimate pathways in order to support autonomy and epistemic engagement. Decision-making becomes educationally meaningful when learners are encouraged to reflect on consequences rather than to optimise performance.

From this standpoint, decision-based learning supports epistemic agency by enabling learners to participate in the processes through which meaning is produced and stabilized (Plummer & Swan, 2023). Decisions are not treated as technical steps, but as sites where values, assumptions, and power relations are negotiated. This conceptualisation provides a theoretical foundation for educational artefacts that aim to expose and problematise curatorial reasoning, positioning transparency not as an informational feature but as a pedagogical strategy.

The following section builds on this framework by introducing ‘Curator Quest’ as a decision-based artefact designed to make curatorial choices explicit through interactive decision trees, thereby operationalising transparency and agency within museum education.

3. Conceptual Design Framework: A Non-Empirical, Theory-Driven Contribution

3.1. Nature of the Contribution and Disciplinary Positioning

This article presents a conceptual design contribution rather than an empirical evaluation study. It is positioned at the intersection of visual culture studies, museum education, and instructional design, and addresses a gap in how curatorial decision-making is understood as a pedagogical object within digital museum contexts. The contribution is threefold:

First, it advances a theoretical argument grounded in visual culture scholarship: that museums function as sites where visual meaning is actively constructed through curatorial decisions, and that making these decisions visible is essential for developing critical visual literacy (Hooper-Greenhill, 2007; Parry, 2013). This positions the work within ongoing debates about power, representation, and the politics of visibility in cultural institutions.

Second, it proposes a design framework—‘Curator Quest’—that operationalizes this theoretical stance through a decision-based architecture. The framework is not site-specific or context-dependent; rather, it articulates a transferable model for structuring learning experiences around curatorial

reasoning. This aligns with design-based research traditions that value well-documented, theoretically-grounded artefacts as legitimate scholarly contributions (Hannafin et al., 2014).

Third, it offers a methodological innovation by repositioning decision trees—typically used for performance optimization—as epistemic transparency devices. This reconceptualization extends decision-based learning theory into the domain of visual culture pedagogy, where learning objectives center on critical understanding rather than procedural mastery.

The absence of empirical data is intentional and methodologically defensible. As Simon (2013) notes, not all advances in museum practice or educational design require quantitative validation; conceptual clarity, theoretical coherence, and architectural specification constitute valuable forms of knowledge production. The present work prioritizes these dimensions, with the expectation that the framework will inform future empirical studies—a point addressed in the Discussion section.

From a visual culture perspective, this contribution is particularly relevant because it problematizes how exhibitions naturalize their own construction. By designing an artefact that makes curatorial choices experientially visible, the work participates in broader critical projects aimed at denaturalizing visual regimes and redistributing epistemic authority in cultural institutions (Karp & Kratz, 2015; Rancière, 2009).

3.2. Design Requirements and Theoretical-to-Design Traceability

The artefact, 'Curator Quest', was developed under five non-negotiable design requirements derived from the conceptual framework presented earlier:

1. Agency over interaction: learner action must involve meaningful choice with consequences, not merely navigation or clicking (Klemenčič, 2017; Mameli et al., 2023).
2. Reflection over evaluation: choices must not be graded as correct/incorrect; feedback must foreground tensions and trade-offs rather than performance.
3. Visibility of curatorial decisions: the experience must externalise exhibition-making processes (selection, narration, voice, mediation, accessibility) as learnable objects (Hooper-Greenhill, 2007; Macdonald, 2006).
4. Technology as epistemic scaffold: digital features must function as mindtools that support thinking and representation, not as decorative add-ons (Jonassen et al., 1998).
5. Visualisation as meaning-making: outputs must treat images and maps as epistemic devices that participate in knowledge construction (Ainsworth, 2006; Mayer, 2009).

These requirements were used as a design rubric throughout development to constrain feature decisions and to avoid the common slippage from “interactive” to “agency-driven” experiences.

3.3. Conceptual Validation

Although this study does not include empirical evaluation, the framework underwent conceptual validation to ensure theoretical coherence and design rigor:

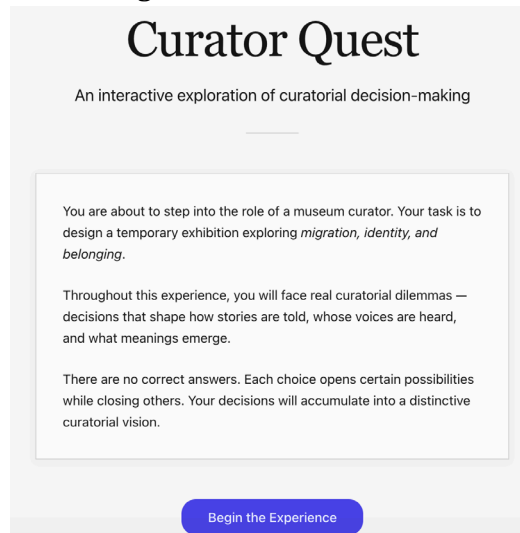
1. Theoretical traceability: Each design decision was mapped to source constructs from visual culture theory (visibility/invisibility, power/representation), museum studies (curatorial authority), and educational theory (epistemic agency, decision-based learning), ensuring features were theoretically motivated rather than technically driven.
2. Design critique: The artefact architecture was reviewed by peers with expertise in museum education and instructional design to assess whether decision nodes authentically represented curatorial dilemmas and whether the non-evaluative feedback model successfully avoided gamification logic.
3. Comparative analysis: The design was systematically compared against existing digital museum interventions to identify its distinctive contribution and ensure it addressed a gap rather than replicating prior work.

These validation strategies establish the framework's internal validity and conceptual rigor, positioning it as a defensible foundation for future empirical research.

3.4. Artefact Overview

‘Curator Quest’ (figure 1) is a decision-based learning artefact that positions learners (secondary school students) as guest curators commissioned to design a temporary exhibition. The user progresses through an experience structured around a curatorial brief and a sequence of decision nodes. Each node represents a curatorial dilemma and requires the learner to choose among three plausible alternatives. The intended learning mechanism is the progressive construction of meaning through sequences of decisions, making visible how curatorial narratives are produced through inclusion, exclusion, and framing. The app is accessible at <https://tinyurl.com/curatorquest>.

Figure 1. Artifact Overview

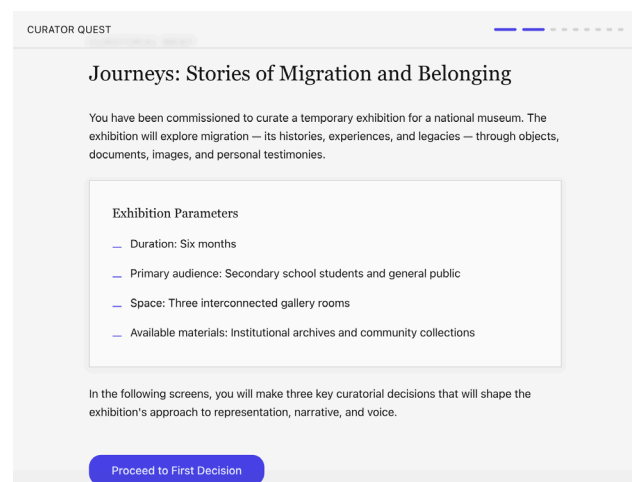


Source: ‘Curator Quest’, García-Beltrán (2026)

3.4.1. Interaction Architecture: Decision Nodes and Persistent Variables

The core interactional unit is the decision node, implemented as a consistent template comprising: (1) a dilemma scenario, (2) three non-binary options (figure 2), (3) a single-choice selection, and (4) interpretive feedback. The non-binary design is deliberate: it prevents dichotomous “right/wrong” framing and supports exploration of competing values and perspectives.

Figure 2. Dilemma Scenario



Source: ‘Curator Quest’, García-Beltrán (2026)

To ensure coherence and traceability, each decision sets a persistent variable that remains active across the experience and is reused to generate subsequent content and outcomes. The architecture operationalises curatorial agency through a system of persistent decision variables, allowing earlier choices to shape later mediation and the final interpretive outcome. The primary variables are:

- representation_type (institutional / community / hybrid)

- narrative_structure (chronological / thematic / fragmented)
- voice_model (curatorial / first_person / polyphonic)
- mediation_strategy (minimal / guided / interactive)
- accessibility_level (standard / enhanced / co_designed)

This variable structure functions as a formal specification of the artefact's logic: it makes explicit which conceptual dimensions are being modelled and how they are recombined across the experience. In methodological terms, it provides a transparent model of the artefact's internal state, strengthening replicability and interpretability.

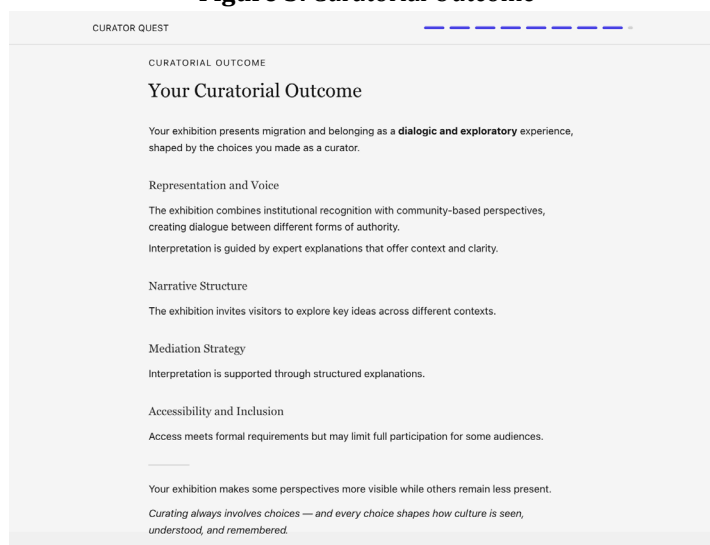
3.4.2. Feedback Model: Interpretive, Non-Evaluative Consequences

After each decision, the system generates interpretive feedback describing the implications of the selected option. Feedback is designed to surface trade-offs (e.g., legitimacy vs. voice, coherence vs. complexity, guidance vs. interpretive openness) rather than to confirm correctness. This aligns with decision-based learning principles where learning emerges from confronting uncertainty and reasoning about consequences (Jonassen, 2011). The feedback model also supports agency by positioning learners as accountable for meaning-making rather than as respondents to a hidden scoring system.

3.4.3. Dynamic Outcome Generation

The artefact concludes with a dynamically generated Curatorial Outcome (figure 3) that synthesises the stored variables into a reflective narrative describing the resulting exhibition. The final outcome makes explicit the tensions produced by the learner's pathway, translating choices into an articulated curatorial stance. This mechanism strengthens methodological rigor by ensuring that design decisions are not isolated interactions but components of a coherent system whose outputs are logically derived from the recorded decision state.

Figure 3. Curatorial Outcome

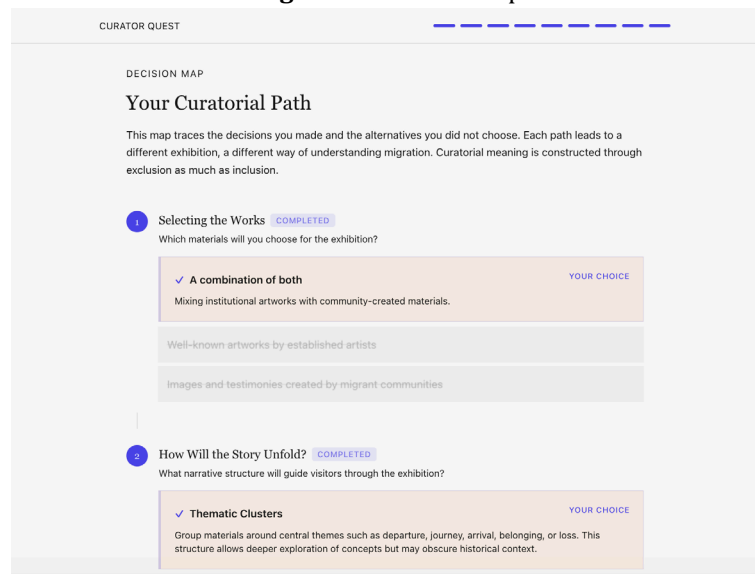


Source: 'Curator Quest', García-Beltrán (2026)

3.4.4. Decision Map: Visual Trace of Agency and Opaque Alternatives

A *Decision Map* screen (figure 4) provides a visual overview of the learner's pathway. Critically, it renders chosen paths legible while leaving unselected possibilities intentionally opaque (e.g., faded, blurred, or visually obscured). This is a design decision with both pedagogical and theoretical intent: it prevents the experience from becoming a checklist of "missed options," and it foregrounds exclusion as an inherent condition of cultural representation. The decision map thus operates as a visual artefact of curatorial agency, rendering chosen paths legible while leaving unselected possibilities intentionally opaque, thereby foregrounding exclusion as an inherent condition of cultural representation.

Figure 4. Decision Map

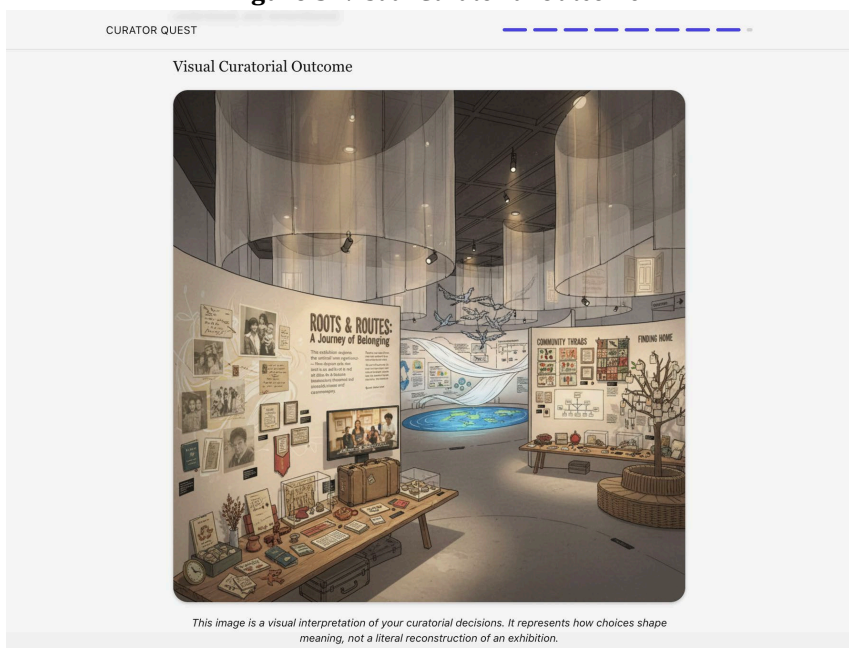


Source: ‘Curator Quest’, García-Beltrán (2026)

3.4.5. Visual Curatorial Outcome: AI-Generated Interpretive Illustration

In addition to textual synthesis, ‘Curator Quest’ produces an AI-generated visual outcome (figure 5). This image is explicitly framed as an interpretive illustration, not a photorealistic reconstruction of a museum. Its function is to externalise curatorial agency by translating decision variables into an interpretive visual composition, allowing learners to perceive the epistemic consequences of their choices. The design follows principles from research on learning with multiple representations, where visuals are effective when aligned with tasks and conceptual functions rather than used as decoration (Ainsworth, 2006; Mayer, 2009). The visual output therefore serves as an epistemic image: it materialises the learner’s pathway as an interpretable visual configuration of space, voice, mediation, and inclusion.

Figure 5. Visual Curatorial Outcome



Source: ‘Curator Quest’, García-Beltrán (2026)

3.4.6. Quality Criteria and Design Rigor

Given the absence of empirical evaluation in the present article, methodological rigor is ensured through explicit quality criteria applied at the design level:

1. Coherence: every feature must map to at least one design requirement and one conceptual construct.
2. Transparency: decision logic must be explicit through variable persistence and outcome generation.
3. Non-evaluability: absence of scoring and correctness framing must be maintained across nodes and outcomes.
4. Plausibility: choices must be defensible and recognisable as authentic curatorial dilemmas, avoiding trivial gamification.
5. Transferability: the artefact must be describable as a reusable framework adaptable to other exhibition themes or educational levels.

Together, these criteria establish the proposal as a methodologically defensible artefact-based contribution: rather than claiming measured impact, the methodology documents how theoretical claims are operationalised in a functional system whose internal logic is transparent, systematic, and replicable.

3.4.7. Development Environment: No-Code Design and Generative AI Support

The artefact 'Curator Quest' was developed using Lovable, a no-code application development environment that integrates generative artificial intelligence to support the creation of interactive, decision-based educational experiences. The selection of this platform responds to a methodological and pedagogical rationale rather than to purely technical considerations.

No-code environments enable educators to design and deploy functional digital artefacts without requiring formal programming expertise, provided that the underlying educational design is conceptually robust and clearly specified. In this sense, the use of Lovable aligns with the design-based nature of the present study: the focus is placed on articulating learning objectives, interaction logic, decision structures, and feedback mechanisms, while the platform translates these specifications into a working application through AI-assisted generation.

This approach has two methodological implications. First, it reduces dependence on costly and time-intensive custom software development, which often constitutes a barrier to experimentation and innovation in educational contexts. By lowering technical entry thresholds, no-code tools allow educators to retain control over pedagogical design decisions while accelerating the transition from conceptual framework to functional prototype. Second, the rapid prototyping afforded by generative AI-supported environments enables iterative refinement. Artefacts can be tested, adjusted, and reconfigured in short cycles, supporting a design process oriented toward exploration, reflection, and improvement rather than premature stabilisation.

Importantly, the use of a no-code, AI-assisted platform does not imply a reduction in methodological rigor. On the contrary, it places greater responsibility on the clarity and coherence of the educational design, as the system operationalises what is specified rather than compensating for conceptual ambiguity. In the case of 'Curator Quest', the explicit definition of decision nodes, persistent variables, feedback logic, and visual outcomes ensured that the platform functioned as an implementation medium rather than as a design driver.

From a broader perspective, this development strategy illustrates how generative AI and no-code technologies can support educator-led innovation by enabling the creation of sophisticated learning artefacts that are ready for testing and subsequent refinement. Such tools expand the methodological repertoire available to educational designers, particularly in contexts where exploratory, design-oriented contributions are valued alongside empirical evaluation.

4. Discussion

4.1. Contribution to Visual Culture Scholarship: Making Curatorial Vision Visible

The primary contribution of 'Curator Quest' to visual culture studies lies in its explicit foregrounding of curatorial decision-making as a visual and epistemic practice. While recent scholarship has extensively analyzed how museums construct meaning through exhibition design (Basu & Macdonald, 2007; Macdonald, 2006), fewer works have translated these critical insights into pedagogical frameworks that enable learners to experientially engage with the production of visual narratives.

Visual culture, as a field, is fundamentally concerned with how images and visual arrangements produce knowledge, circulate power, and shape subjectivities (Sturken & Cartwright, 2017). Museums represent a privileged site for this analysis because they institutionalize particular ways of seeing: they determine which objects become visible, how they are contextualized, and what interpretive frameworks are legitimized (Duncan, 1995). Yet as Bal (2006) argues, this "expository apparatus" typically conceals its own operations, creating an illusion of transparency that positions exhibitions as natural rather than constructed.

'Curator Quest' intervenes in this dynamic by transforming opacity into pedagogy. By externalizing curatorial reasoning through decision trees, the artefact makes visible the visual and representational consequences of choices concerning selection, narration, voice, mediation, and accessibility. Learners do not simply consume a curated exhibition; they participate in constructing one, thereby experiencing firsthand how visual meaning is produced through acts of inclusion, exclusion, and framing. This approach aligns with feminist and decolonial critiques of museum practice that emphasize the politics of visibility and voice (Lonetree, 2012; Sandell & Nightingale, 2012). By positioning accessibility, representation, and narrative structure as explicit decision points rather than background assumptions, the framework invites critical reflection on whose perspectives are centered, whose are marginalized, and how institutional power operates through visual organization. Moreover, the artefact addresses a gap identified by visual culture educators: the need for pedagogical strategies that move beyond critique toward generative engagement (Duncum, 2010). While critical analysis remains essential, students also benefit from opportunities to experiment with meaning-making processes themselves. 'Curator Quest' provides such a space by allowing learners to adopt a curatorial position and to experience the constraints, trade-offs, and responsibilities inherent in representing culture visually.

From a methodological standpoint, this work also demonstrates how digital design can function as visual culture praxis. Rather than treating technology as a neutral delivery mechanism, the artefact uses interactive decision structures to materialize theoretical concepts about power, agency, and representation. The decision tree becomes a visual-epistemic device: it does not simply organize content, but models how curatorial knowledge is contingent, constructed, and consequential.

Finally, this contribution has implications for museum studies more broadly. It suggests that transparency—often discussed in terms of institutional ethics or public accountability—can also be understood as a pedagogical resource. Making curatorial reasoning visible does not diminish professional expertise; rather, it repositions that expertise as a learnable practice, thereby democratizing access to the epistemic processes through which cultural meaning is produced and authorized.

4.2. Decision Trees Beyond Performance-Oriented Learning

Recent educational research has demonstrated the pedagogical value of decision trees and branching scenarios across a wide range of domains and educational levels. Studies included in the reviewed corpus show that decision-based learning can enhance critical thinking, expert-like reasoning, and learner engagement when instruction is structured around meaningful choices rather than content delivery. In applied contexts, decision trees have been successfully implemented in intelligent tutoring systems, serious games, and web-based case studies, often leading to improved learning outcomes and increased motivation (Argueta-Muñoz et al., 2023; Hagge et al., 2017; Sider et al., 2023).

However, a closer examination of this literature reveals that many implementations remain primarily performance-oriented. Decision trees are frequently used to guide learners toward correct solutions, optimise problem-solving efficiency, or scaffold mastery of predefined knowledge structures (Pimblett et al., 2025). While such approaches are effective within domains where correctness and procedural accuracy are central, they risk limiting the epistemic scope of decision-making by framing choices as steps toward optimal answers rather than as sites of negotiation, value judgement, or representational tension.

'Curator Quest' deliberately diverges from this dominant use of decision trees. Instead of functioning as a guided pathway toward correct outcomes, the decision structure is used as a transparency mechanism that externalises curatorial reasoning. Decisions are not evaluated as right or wrong; rather, they are treated as consequential acts that shape meaning, visibility, and narrative coherence (Plummer et al., 2022). In this respect, the artefact aligns more closely with conceptual and dilemma-based uses of branching narratives, such as those proposed in decision-based learning frameworks and gamebook-

inspired designs, where learning emerges from reflecting on consequences rather than optimising performance (Fenici & Mosca, 2024; Pixton, 2023).

4.3. Gamification, Immersion, and the Limits of Curatorial Visibility

The discussion of ‘Curator Quest’ also needs to be situated in relation to recent advances in digital and gamified museum experiences. Studies such as Li et al. (2024) demonstrate the potential of immersive technologies and gamification to enhance engagement and content learning in virtual museum contexts. Their VR-based gamified curation experience shows that interactive challenges, progressive levels, and immersive environments can significantly improve visitor motivation and understanding of cultural artefacts (Vázquez-Calatayud et al., 2024).

At the same time, such approaches tend to embed curatorial decisions within the system design without making them pedagogically explicit. Learners interact with curated content and categorisation systems, but the logic through which these systems are constructed remains largely opaque (Chen, 2024). Curatorship is simulated as task completion rather than problematised as an epistemic practice. As a result, while gamified virtual museums succeed in increasing engagement and accessibility, they may inadvertently reinforce the perception of exhibitions as neutral or naturalised representations.

By contrast, ‘Curator Quest’ intentionally avoids immersive realism and task-based gamification. Its focus is not on simulating a museum visit, but on exposing the decision logic that underpins exhibition-making. The absence of scores, levels, or correct solutions is not a limitation, but a design choice aligned with the goal of fostering epistemic and visual agency. From this perspective, ‘Curator Quest’ complements rather than competes with immersive and gamified museum experiences: it addresses a different pedagogical problem, namely the invisibility of curatorial decision-making in museum education.

4.4. Agency, Transparency, and the Contribution of ‘Curator Quest’

Across the literature on decision trees and branching scenarios in education, agency is frequently operationalised as the learner’s capacity to select among predefined options within a structured system. This form of agency, often associated with increased engagement and motivation, is typically procedural in nature: learners act within a system whose underlying logic remains fixed and largely invisible (Vaughn, 2020). While such designs can be effective for guiding problem-solving or supporting performance, they rarely allow learners to influence how knowledge is represented, organised, or legitimised.

The contribution of ‘Curator Quest’ lies in its deliberate reconfiguration of agency from interaction to representation. Rather than treating decision-making as a pathway toward optimal outcomes, the artefact positions decisions as constitutive acts that actively shape meaning. Learners do not merely choose actions; they participate in constructing narratives, selecting voices, determining modes of mediation, and negotiating accessibility. In this sense, agency is understood as epistemic and representational: the capacity to influence how cultural meaning is produced and made visible (Yang et al., 2024).

This shift is operationalised through the artefact’s architecture. Persistent variables ensure that decisions have cumulative and traceable consequences, preventing choices from being reduced to isolated interactions. Non-evaluative feedback avoids framing decisions in terms of correctness, instead foregrounding trade-offs, tensions, and competing values inherent to curatorial practice. Additionally, the use of opaque decision maps—where unchosen paths remain visually inaccessible—reinforces exclusion as a structural condition of representation, rather than as a failure or missed opportunity. Together, these design elements function to externalise curatorial reasoning and make the contingent nature of exhibition-making experientially visible (Cook-Sather, 2020).

Such an approach responds directly to calls within museum studies and educational research to move beyond participation toward forms of engagement that redistribute epistemic authority (Brewer et al., 2018). Participation, when limited to interaction with predefined content, risks reinforcing existing hierarchies of meaning-making. By contrast, transparency-oriented designs invite learners to confront the assumptions, priorities, and power relations embedded in cultural production processes. ‘Curator Quest’ addresses this challenge by using decision trees not as control mechanisms, but as epistemic devices that expose how cultural narratives are assembled through sequences of choices.

In doing so, the artefact demonstrates an alternative pedagogical use of decision-based structures in museum education. Decision trees are no longer primarily instructional scaffolds designed to guide learners toward mastery, but conceptual instruments that render curatorial practice open to interrogation (Stenalt, 2021). This reorientation expands the educational potential of decision-based learning, positioning it as a methodology for developing critical visual literacy and epistemic agency in digital museum contexts.

4.5. Future Directions

The present contribution is intentionally limited in scope. It does not provide empirical evidence of learning impact, nor does it claim generalisability across museum contexts. Instead, its value lies in articulating a coherent, theoretically grounded design that can inform future implementations and studies. The decision-tree corpus reviewed in this article suggests multiple avenues for future work, including comparative studies between performance-oriented (Plummer et al., 2022) and epistemic uses of branching structures (Lively et al., 2024), as well as empirical investigations into how learners perceive agency and transparency in curatorial decision-making (Matusov et al., 2016).

Future research could also explore how 'Curator Quest' might be integrated with immersive or gamified museum experiences, combining the motivational affordances of VR and serious games with explicit reflection on curatorial reasoning. Such hybrid approaches may offer a way to balance engagement with critical understanding, extending the educational potential of digital museums.

5. Conclusion

This article has proposed a conceptual and design-based contribution to museum education by reframing curatorial decision-making as a pedagogical object. Drawing on theories of visual culture, epistemic agency, and decision-based learning, it has argued that meaningful museum education requires moving beyond interaction with curated content toward engagement with the processes through which exhibitions are constructed. From this perspective, learning in museums is not only about interpreting visual narratives, but about understanding how such narratives are produced through acts of selection, framing, and exclusion.

'Curator Quest' has been presented as a decision-based educational artefact that operationalises this shift by positioning learners as curators rather than visitors. Through a structured architecture of non-binary dilemmas, persistent decision variables, and non-evaluative feedback, the artefact makes curatorial reasoning visible and experientially accessible. Importantly, the design does not seek to simulate a museum visit or to gamify content, but to externalise the epistemic logic of exhibition-making, allowing learners to experience how meaning emerges from sequences of choices.

By foregrounding transparency and agency, this work contributes to ongoing debates in museum studies and educational technology regarding the limits of interactivity and gamification. While immersive and game-based museum experiences have demonstrated their capacity to enhance engagement, 'Curator Quest' addresses a complementary educational challenge: enabling learners to critically understand museums as constructed cultural narratives. In doing so, the article advances a framework that conceptualises decision trees not as optimisation tools, but as epistemic devices for learning about representation, authority, and visibility in cultural contexts.

This study has deliberate scope limitations that reflect its positioning as a conceptual design contribution to visual culture scholarship rather than an empirical evaluation study. First, the article does not include empirical data on learning outcomes, user experience, or impact. This is a methodological choice aligned with design-based research traditions that value well-theorized, architecturally transparent artefacts as preparatory contributions that inform subsequent empirical work (Barab & Squire, 2004). No claims are made regarding measurable effectiveness; instead, the contribution lies in articulating a coherent framework grounded in visual culture theory and operationalized through explicit design decisions. Second, while 'Curator Quest' is designed as a transferable framework, the specific curatorial dilemmas modeled reflect particular assumptions about museum practice derived primarily from Western institutional contexts. Applying this framework to community museums, Indigenous cultural centers, or non-Western exhibition traditions would require careful adaptation to address different epistemological frameworks, power relations, and representational politics (Kreps, 2003; Lonetree, 2012). Future iterations should involve co-design

processes with diverse cultural stakeholders. Third, the artefact foregrounds curatorial decision-making without incorporating visitor perspectives or community voices as active agents within the decision structure itself. While this reflects the current focus on making institutional curatorial reasoning visible, it does not yet address participatory or co-curatorial models where authority is shared or redistributed (Lynch & Alberti, 2010; Simon, 2010). Extending the framework to include community decision-making pathways represents an important direction for development. Fourth, although the artefact incorporates AI-generated visual outcomes, the present article does not empirically examine how learners interpret these representations or whether they successfully function as epistemic images that materialize curatorial consequences. Research in multimedia learning suggests that visual effectiveness depends on alignment between image characteristics, task demands, and learner expertise (Mayer, 2009); testing these relationships in the context of 'Curator Quest' remains necessary. Fifth, from a visual culture perspective, the framework addresses how curatorial decisions construct meaning but does not yet fully engage with affective, embodied, or sensory dimensions of museum experience (Dudley, 2010; Levent & Pascual-Leone, 2014). While transparency and agency are foregrounded, future work could explore how decision-based learning intersects with visceral, aesthetic, or emotional responses to cultural objects. Finally, the current implementation is designed for individual learners in educational contexts (secondary/higher education). Adapting the framework for informal museum visitors, family groups, or public audiences would require different scaffolding strategies and potentially collaborative decision-making structures. These limitations do not undermine the contribution's validity; rather, they define its scope and identify productive directions for future research and development.

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