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Constructing Cultural Narratives through Visual Hyperreality at the National Museum of Indonesia

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ABSTRACT
As museums increasingly adopt immersive technologies, visual spectacle can expand engagement while weakening connections to original artifacts and cultural context. This study examines how visual hyperreality constructs cultural narratives at the National Museum of Indonesia and under what curatorial conditions immersion deepens cultural interpretation. Using a descriptive-interpretive phenomenological design, the study triangulated spatial observations, visual documentation, institutional records, interviews with three museum managers, questionnaires from 108 local and 17 international visitors, and follow-up interviews with nine post-ImersifA visitors. Findings reveal a relational mechanism: artifacts anchor authenticity; curatorial narratives direct interpretation; immersive space produces embodied and affective engagement; and digital media expand historical and cultural contexts. Seven of nine participants intended to view original artifacts after ImersifA, indicating that immersion can operate as a bridge rather than a substitute. The study advances visual hyperreality as an artifact-anchored curatorial framework connecting authenticity, immersion, participation, and meaning while limiting the risk of spectacle.

KEYWORDS
Visual Hyperreality, Immersive Technology, Cultural Narrative, Museum Experience, National Museum of Indonesia

Introduction

Contemporary museums increasingly operate not only as repositories of cultural objects but also as interpretive environments in which artifacts, spatial arrangements, exhibition texts, lighting, and curatorial decisions shape how societies encounter the past. Hooper-Greenhill explains that museum meaning is produced through interpretation and visual communication [1], while Bennett demonstrates that collecting and display practices are embedded in systems of knowledge and cultural authority [2]. Within contemporary visual culture, these processes have become more complex because visitors increasingly approach history through screens, moving images, digital interfaces, and shareable visual experiences [3]. The central challenge is therefore not simply whether museums should adopt technology, but how digital mediation

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can deepen cultural understanding without weakening the material, historical, and symbolic significance of original collections. Immersive technologies have expanded the possibilities of museum interpretation by enabling spatial visualization, interactive storytelling, sensory engagement, and simulated encounters with cultural heritage. Augmented, virtual, and mixed reality have been applied to education, exhibition enhancement, exploration, reconstruction, and virtual museums [4]. Nevertheless, digital mediation also changes the relationship between cultural objects and their representations. Cameron and Kenderdine emphasize that digital heritage must be examined critically because technological representation influences authenticity, interpretation, and cultural meaning [5]. Baudrillard's concept of hyperreality provides a critical lens for understanding how simulation can produce an experienced reality that appears more immediate or persuasive than its referent [6]. Rather than treating simulation as a replacement for reality, this study critically adapts hyperreality to examine how technologically mediated environments intensify cultural experience while remaining anchored to material evidence. Visual hyperreality is therefore understood as a curated experiential condition in which artifacts, projected images, sound, light, spatial atmosphere, and visitor participation jointly construct cultural meaning.

The National Museum of Indonesia provides a significant setting for examining this condition because its historical collections are increasingly presented through contemporary visual and interactive media. ImersifA surrounds visitors with panoramic projections, moving imagery, sound, and the spatial narrative of Pitraloka Nusantara. The Paras Nusantara installation connects visitors' faces with the portrait collection of Raden Mas Pirngadie, while projection mapping in the Sejarah Awal gallery situates fossils and megafaunal remains within digitally reconstructed environments. These principal cases are complemented by video mapping, holographic displays, interactive screens, and other multimedia installations that extend the interpretation of buildings, statues, repatriated objects, and institutional memory. Such developments create a critical tension because the same sensory intensity that attracts visitors to cultural heritage may cause digital spectacle to become more memorable than the artifacts and histories it is intended to interpret. Previous research has demonstrated that immersive media can improve access, visualization, and engagement with cultural heritage [4]. Studies of museum experience further show that visitor motivation, participation, and interaction contribute to the co-creation of experiential value [7], while digital documentation and social media extend museum narratives beyond the physical visit [8]. However, existing studies have not sufficiently explained how authentic artifacts, curatorial narratives, immersive space, sensory media, and visitors' bodily participation interact as a unified system of cultural representation, particularly within Indonesia's national museum context. This gap concerns more than the effectiveness or attractiveness of technology. It raises an epistemological and curatorial question about how museums can construct meaningful cultural realities while preserving the authority of material evidence and preventing technologically mediated experience from becoming an autonomous spectacle.

Accordingly, this study examines how visual hyperreality constructs cultural narratives through immersive technologies at the National Museum of Indonesia. Rather than evaluating technological novelty or visitor satisfaction alone, the research analyzes the museum as a relational ecology comprising artifacts, curatorial narratives, spatial design, digital media, sensory

atmosphere, and embodied participation. Its contribution lies in developing an artifact-anchored framework of visual hyperreality that explains how immersive environments can expand historical context, emotional engagement, and visitor participation while retaining original collections as sources of authenticity and cultural knowledge. Through this framework, immersive technology is positioned not as a substitute for artifacts, but as an interpretive bridge connecting contemporary visual experience with the material heritage of the past.

Methods

This study adopted a qualitative single-site case study with a descriptive-interpretive phenomenological orientation and design-led visual-spatial analysis. Fieldwork was conducted at the National Museum of Indonesia from October 2025 to March 2026. The phenomenological orientation directed attention to visitor experience as lived through perception, bodily movement, emotion, and meaning-making [9]. The museum constituted the bounded case, while ImersifA (Pitraloka Nusantara), Paras Nusantara, the projection-mapping presentation in the Sejarah Awal Gallery, and selected holographic, video-mapping, and interactive displays served as embedded units of analysis. Rather than assessing technology as isolated hardware, the study examined each installation as a designed representational system connecting artifacts, narrative, space, sensory media, and visitor action. From the position of a designer-researcher, fieldwork examined three interrelated analytical layers. The visual-sensory layer addressed composition, color, typography, visual hierarchy, scale, lighting, motion, sound, and the placement of screens and projections. The spatial-interactional layer documented visitor circulation, viewing distance, gaze direction, bodily orientation, interface cues, wayfinding, waiting, and participation. The curatorial-semantic layer examined how original artifacts, exhibition texts, digital imagery, and spatial sequencing worked together to construct cultural meaning. Following a critical visual-methodological orientation [10], visual documentation and field notes were treated as analytical data rather than merely as illustrative supplements. This approach enabled formal design decisions to be examined in relation to their experiential and interpretive consequences.

The empirical material comprised survey questionnaires completed by 125 visitors, consisting of 108 domestic and 17 international visitors; in-depth follow-up interviews with nine visitors who had experienced ImersifA; and interviews with three museum managers. The questionnaires gathered visitor perceptions of immersion, emotional engagement, comprehension, authenticity, and the relationship between digital media and original collections. The follow-up interviews explored experiences and interpretations that could not be sufficiently captured through questionnaire items. Interviews with museum managers addressed curatorial intentions, content development, technological implementation, operational constraints, and institutional expectations. Direct observation, visual documentation, and relevant institutional materials were used to contextualize these accounts. Questionnaire findings served as descriptive support for qualitative interpretation and were not employed for statistical generalization. Consent to participate was obtained from all questionnaire and interview participants, and no personally identifying information is reported. Data collection and organization followed three stages of the visitor journey: before, during, and after the immersive encounter. The pre-encounter stage examined visitor expectations, prior museum experience, and initial spatial

orientation. The encounter stage documented visual attention, movement, bodily engagement, emotional response, interaction, and the perceived relationship between immersive media and museum artifacts. The post-encounter stage examined recall, interpretation, perceived knowledge gain, judgments of authenticity, and interest in encountering the original artifacts. This temporal structure enabled the study to trace how design elements generated, sustained, or disrupted meaning throughout the museum experience rather than examining only the moment of technological spectacle. Analysis proceeded iteratively through data familiarization, initial coding, category development, theme review, and cross-case comparison [11]. Interview accounts, open-ended questionnaire responses, field notes, and visual records were organized according to data source, display context, and visitor-journey stage. Coding combined the deductive experiential dimensions of body, emotion, and knowledge with inductively emerging design categories, including visual hierarchy, spatial sequence, sensory intensity, interaction, narrative clarity, artifact visibility, and perceived authenticity. A cross-case matrix was used to compare the principal display contexts and to identify convergent, divergent, and negative cases. Descriptive questionnaire patterns were compared with interview accounts and observed visitor behavior, while managerial explanations and institutional materials were used to examine curatorial intent. Reflexive analytical notes were maintained to make the researcher's position as a designer explicit and to prevent professional judgment from being treated as self-validating evidence. The final interpretation was established through triangulation across participants, methods, and display contexts, providing the evidentiary basis for the artifact-anchored model presented in the Results and Discussion.

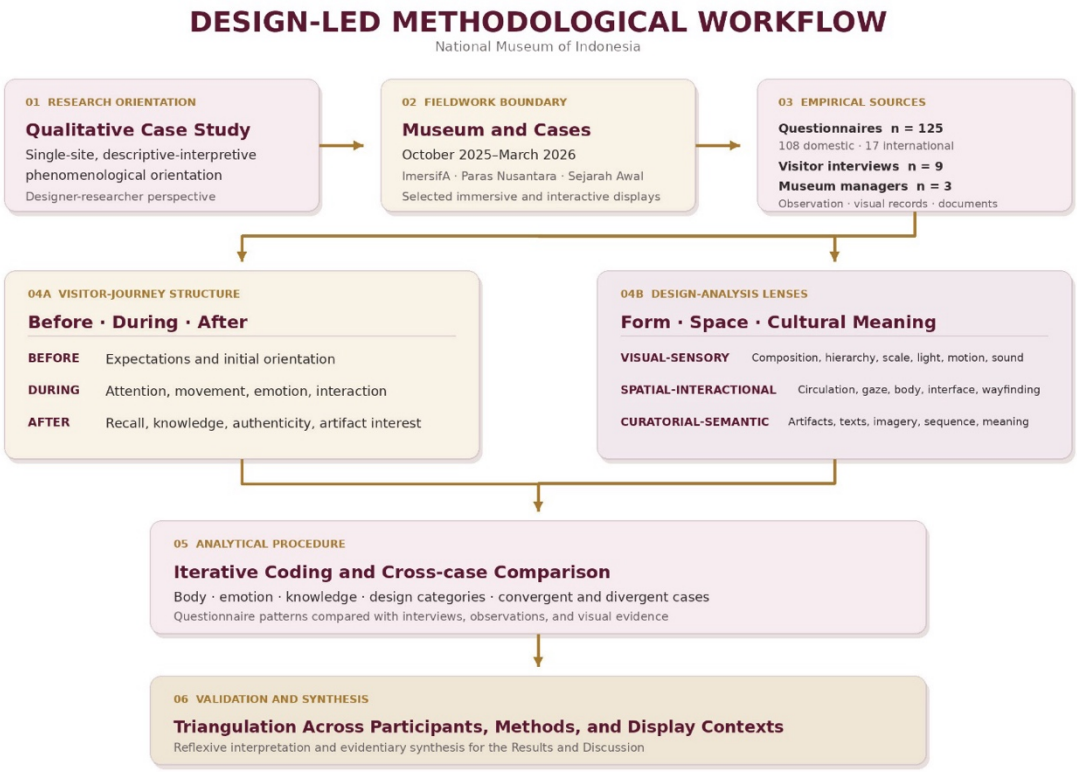


Figure 1. Design-led methodological workflow of the study
Source: Authors' design documentation, 2025

Result

The integrated analysis produced one consistent yet non-deterministic finding: immersive technologies intensified visual attention, sensory atmosphere, and visitor memory, but cultural depth emerged only when digital simulation remained connected to original artifacts, curatorial context, and spatial sequence. This relationship was identified across the observed installations, reported in the visitor questionnaires, refined through supplementary validation, and confirmed through interviews with museum managers. The findings are presented through four interconnected dimensions: designed configurations of visual hyperreality, visitor experience, artifact–digital relationships, and operational conditions.

Designed Configurations of Visual Hyperreality

Visual hyperreality at the National Museum of Indonesia was not produced by a single technological device. It emerged through the coordination of artifacts, projected images, sound, light, interfaces, architectural surfaces, curatorial narratives, and visitor movement. Cross-case analysis identified three recurring design operations: sensory enclosure, contextual activation, and visitor participation. ImersifA constructed sensory enclosure through panoramic projection, moving imagery, sound, and light. Its Pitraloka Nusantara narrative transformed the exhibition room into an audiovisual environment in which nature, ancestry, mythology, civilization, and cultural imagination unfolded across the surrounding surfaces. This configuration expanded the scale of cultural representation and generated a strong sense of atmosphere. However, its relationship with particular museum objects was less immediately visible because cultural meaning was communicated primarily through audiovisual sequences. A more direct connection between digital visualization and material culture appeared in Sejarah Awal. Projected prehistoric landscapes were positioned alongside fossils and megafauna skeletons, enabling visitors to perceive the physical collection within an expanded ecological and temporal setting. The digital layer supplied movement, environmental scale, and geological context without displacing the original objects. Among the observed installations, Sejarah Awal demonstrated the clearest continuity between material evidence and visual interpretation. Paras Nusantara introduced participation by combining facial-recognition technology with portrait works by Raden Mas Pirngadie. The visitor's face became part of a visual exploration of physical appearance and cultural diversity. Participation therefore occurred not only through interaction with an interface but also through the visitor's temporary inclusion within the museum's representational system. Nevertheless, the matching process required clear curatorial framing so that visual resemblance was not interpreted as a definitive classification of ethnic or cultural identity.



Figure 2. Cross-case documentation of visual hyperreality: (a) sensory enclosure in ImersifA, (b) artifact–environment integration in Sejarah Awal, and (c) participatory representation in Paras Nusantara. Source: Author's field documentation, 2025–2026.

The contrasts shown in Fig. 2 represent more than stylistic differences. They reveal three distinct approaches to designing cultural experience. ImersifA surrounded the visitor with a constructed visual world; *Sejarah Awal* extended the context of existing artifacts; and *Paras Nusantara* positioned the visitor within an interactive representation. Video mapping and holographic displays further expanded these approaches by transforming museum architecture, historical figures, repatriated objects, and institutional memory into moving visual narratives. Their interpretive strength nevertheless depended on whether visitors could recognize the historical evidence and curatorial argument supporting the visual presentation.

Visitor Response and Experiential Depth

The primary questionnaire involved 125 visitors, comprising 108 domestic and 17 international respondents. Immersive or digitally mediated spaces were identified as the most impressive museum elements by 70 respondents (56.0%) and as the most engaging by 85 respondents (68.0%). Within the domestic sample, 86 of 108 respondents (79.6%) reported that visual technology strongly assisted their understanding of history and culture, while 95 respondents (88.0%) indicated an intention to revisit the museum.

Table 1. Consolidated visitor-response findings
Source: Authors' design documentation, 2025.

Evidence source	Empirical finding	Result
Primary questionnaire	Immersive or digital spaces perceived as the most impressive	70 of 125
Primary questionnaire	Immersive or digital spaces perceived as the most engaging	85 of 125
Domestic respondents	Technology strongly assisted cultural and historical understanding	86 of 108
Domestic respondents	Intention to revisit the museum	95 of 108
Domestic respondents	Positive assessment of recommending the museum	100 of 108
Supplementary validation	Learned about ImersifA through social media	8 of 9
Supplementary validation	Audiovisual elements made the narrative feel more vivid	8 of 9
Supplementary validation	Visuals or animation became the most memorable element	7 of 9
Supplementary validation	Increased interest in seeing original artifacts	7 of 9
Supplementary validation	Museum perceived as more modern	9 of 9
Supplementary validation	Strong assessment of educational value and attractiveness	7 of 9
Supplementary validation	Strong willingness to recommend the experience	6 of 9

The supplementary validation clarified how the experience developed before, during, and after ImersifA. Before entering the installation, eight of the nine first-time visitors had already encountered ImersifA through social media. Their expectations were shaped by images of large-scale projection, vivid cultural narratives, and the anticipated sensation of entering a visually spectacular environment. Social media therefore functioned as an experiential threshold, establishing standards against which the physical visit was later evaluated. During ImersifA, eight participants reported that the combination of image, sound, light, and space made the cultural narrative feel more vivid. Visuals and animation became the most memorable components for seven participants. Six expressed positive emotions through amazement, enjoyment, or curiosity, while four also demonstrated ambivalence through ordinary impressions, confusion, or a gap between expectation and experience. These categories were not mutually exclusive because attraction and criticism could occur within the same response.

Sensory intensity did not automatically produce narrative immersion. Seven participants interpreted ImersifA primarily as a visual performance or form of digital entertainment. Only one described feeling situated within the story, while another understood it as a new way of learning history. Furthermore, eight participants identified at least one unclear or insufficient element, including incomplete cultural information, unclear sound, rapid visual sequences, limited English-language access, insufficient interaction, incomplete projection coverage, and weak connections between the audiovisual narrative and the museum collection.

Artifact-Digital Relationships

The comparison between immersive visualization and original artifacts produced the most decisive result. Four of the nine validation participants considered the visualization attractive but requested a clearer connection with museum objects. Three regarded original artifacts as more important while acknowledging that technology could strengthen their interpretation. One considered direct engagement with artifacts to be the strongest experience, and one regarded artifacts and digital visualization as equally important. No participant selected immersive visualization alone as the strongest source of cultural experience.

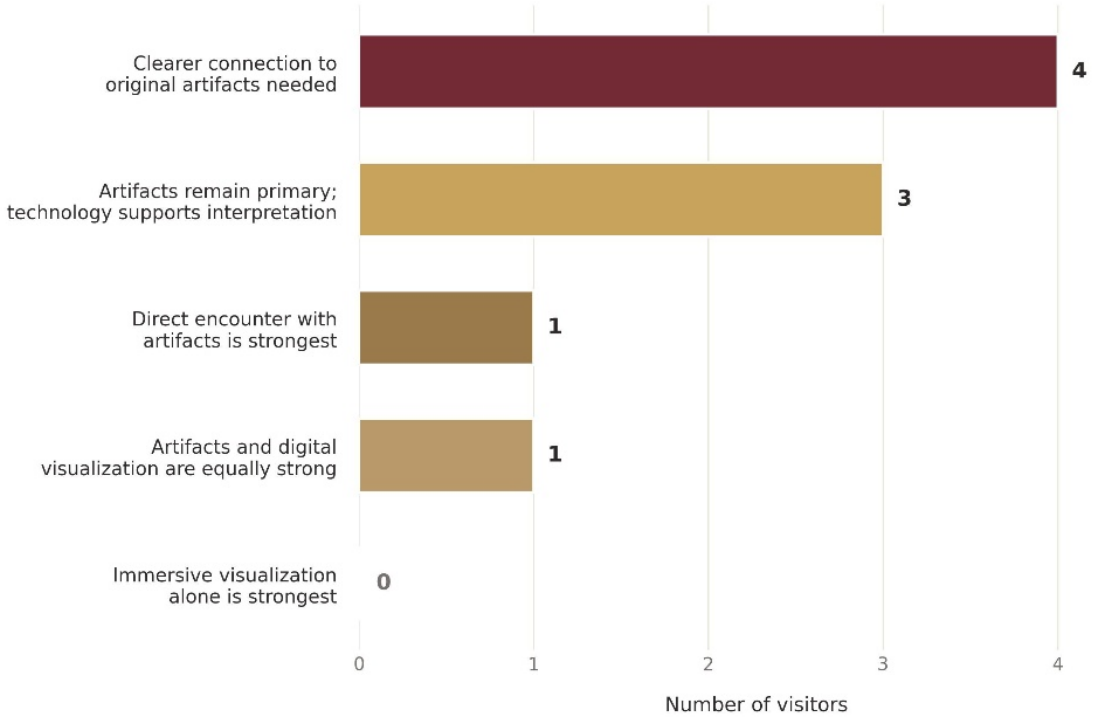


Figure 3. Visitor positioning of immersive visualization in relation to original artifacts during the supplementary validation (n = 9). No participant selected immersive visualization alone as the strongest source of cultural experience.
Source: Author's data, 2026

After leaving ImersifA, seven participants expressed greater interest in viewing the museum's original collections. All nine perceived the museum as more modern, while seven gave strong assessments of its educational value and attractiveness. However, only six provided strong recommendation ratings. The difference between unanimous recognition of visual modernization and the more selective willingness to recommend the experience reveals a critical evaluative gap: a contemporary visual identity could be achieved through technology, but educational credibility and visitor advocacy required clearer content, inclusive representation, technical consistency, and stronger connections with the collection. Cross-case comparison consequently positioned the artifact as the anchor of cultural authenticity. Artifacts supplied material evidence and historical specificity; curatorial narratives directed interpretation; technology expanded visual scale, movement, and atmosphere; while spatial design organized how these

components were encountered. Visual hyperreality became culturally meaningful when these elements remained perceptually and narratively connected. This relationship was strongest in Sejarah Awal, where physical objects and projected environments occupied the same visual field. In ImersifA, sensory intensity was greater, but the connection with particular artifacts depended on additional interpretation before or after the audiovisual presentation. In Paras Nusantara, visitor participation was prominent, although its cultural meaning depended on the explanatory framework surrounding the interface. The findings therefore did not support the replacement of material culture by digital simulation. Instead, they demonstrated a complementary relationship in which immersive media generated attention and curiosity, while original artifacts provided evidence, authenticity, and historical depth.

Operational Conditions of the Experience

Interviews with museum managers demonstrated that the immersive experience was shaped by a broader operational system. ImersifA particularly attracted younger visitors, children, families, and group audiences. Each session accommodated approximately 60 visitors, while the complete service cycle lasted around 30 minutes, including briefing, entry, audiovisual presentation, exit, and visitor documentation. The principal presentation lasted approximately 12–15 minutes. Consequently, ticketing, waiting areas, introductory instructions, circulation, visitor capacity, session transitions, and post-experience activities became integral parts of the designed journey. These elements influenced whether visitors entered with adequate orientation and whether the transition from the immersive installation to the wider museum collection remained continuous.

Museum managers identified content renewal, visitor flow, technical maintenance, human resources, operational costs, electrical stability, and stronger connections with the collection as recurring challenges. These findings demonstrate that an immersive installation cannot be evaluated solely through image quality or technological novelty. Its continuity depends on the coordination of visual design, curatorial development, technical infrastructure, spatial management, and visitor services. ImersifA therefore operated not merely as an audiovisual display but as an interconnected spatial and service system.

Emergent Artifact-Anchored Visitor Sequence

The integration of field observations, questionnaires, supplementary validation, and managerial interviews produced an emergent artifact-anchored visitor sequence. The experience began with digital anticipation, continued through spatial orientation and immersive encounter, developed into renewed interest in original artifacts, and extended into post-visit memory, recommendation, and intention to return.

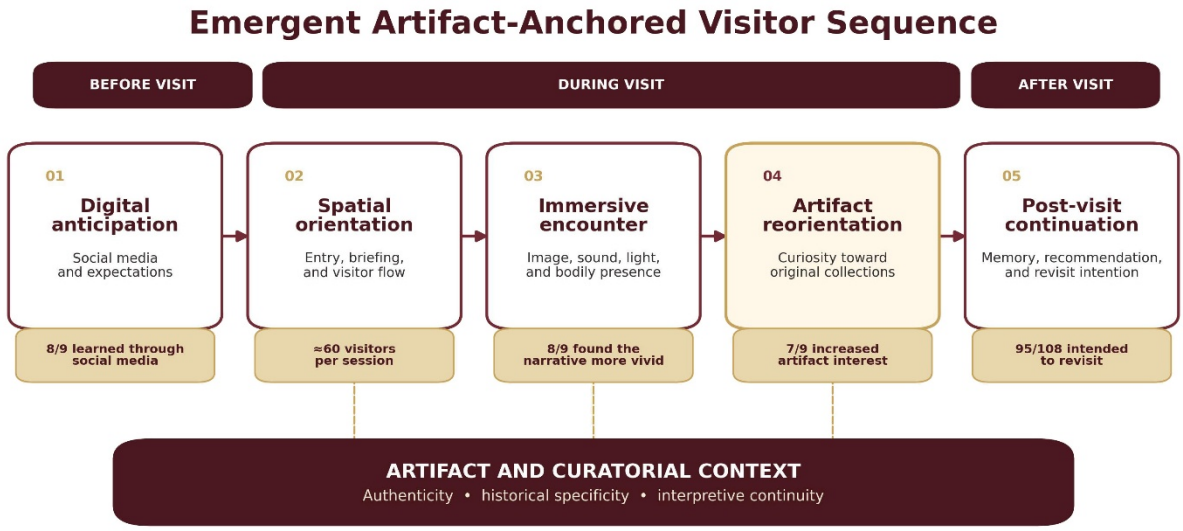


Figure 4. Emergent artifact-anchored visitor sequence derived from the integrated analysis of primary fieldwork and supplementary validation.
Source: Author's analysis, 2026.

The sequence presented in Fig. 4 should be understood as an empirical synthesis rather than a finalized theoretical model. It demonstrates that museum experience did not begin at the entrance or end when visitors left the immersive room. Personal screens and social media shaped anticipation before arrival, spatial and audiovisual design organized bodily experience inside the museum, artifacts redirected attention toward material culture, and post-visit memory extended the experience into recommendation and possible return. The central result was therefore not that greater technological intensity automatically produced a better museum experience. Meaningful engagement depended on continuity between visual attraction, cultural context, and material collections. Technology generated attention and extended sensory experience; artifacts anchored authenticity; curation structured meaning; spatial design organized movement; and visitors completed the process through interpretation, memory, and social circulation. Visual hyperreality became most effective when it operated as an interpretive bridge toward cultural knowledge and original artifacts rather than as a self-contained technological spectacle.

Discussion

The findings indicate that immersive technology becomes transformative only when it functions within a connected relationship among artifacts, curatorial narratives, spatial design, sensory media, and visitor movement. This relationship explains why technological modernization was recognized more consistently than educational value or visitor advocacy. A museum may appear contemporary through projection, sound, and interactive interfaces, yet cultural transformation remains incomplete when visitors cannot connect the experience to historical evidence and the collection. Baudrillard's concept of hyperreality helps explain how ImersifA constructed an audiovisual world that appeared more dynamic and affectively intense than conventional

displays. However, the findings also qualify a substitutional reading of hyperreality. Visitors did not abandon the material referent; instead, most retained or developed an interest in original objects. The study therefore proposes artifact-anchored visual hyperreality as an emergent concept: digital simulation intensifies cultural imagination, while artifacts maintain authenticity, historical specificity, and institutional legitimacy. Technology becomes valuable not by replacing museum reality, but by expanding the ways through which that reality can be approached.

The comparison between ImersifA and Sejarah Awal demonstrates that immersive quality depends more on interpretive continuity than technological intensity. ImersifA produced the strongest sensory enclosure, but its relationship with particular artifacts remained indirect. In Sejarah Awal, projected landscapes and physical collections occupied the same visual field, enabling digital media to restore environmental and temporal context without displacing material evidence. This finding supports Cameron and Kenderdine's critical position that digital heritage can extend interpretation while risking the reduction of historical complexity into spectacle. Image scale, sound, and movement may attract attention, but cultural meaning requires readable pacing, contextual information, and visible links to the collection. The supplementary validation further distinguished visual attraction from narrative depth. Although participants considered the audiovisual presentation vivid and memorable, most interpreted it as a visual performance or digital entertainment rather than an experience of entering the cultural narrative. Immersion therefore cannot be measured solely by how completely images surround the body. It must also be assessed through the visitor's ability to understand what is represented, why it matters, and how it relates to historical objects. Technical issues involving sound clarity, visual tempo, projection coverage, and information were consequently not minor operational problems; they disrupted the movement from sensation to knowledge. The influence of social media shows that museum experience began before physical entry. In accordance with Mirzoeff's understanding of visual culture, circulating images shaped how visitors anticipated and evaluated the installation. Social media functioned simultaneously as an attraction mechanism and an interpretive threshold. This creates a design responsibility: promotional media should introduce the cultural narrative and its relationship with the collection rather than promise spectacle alone. When pre-visit representation is disconnected from the physical experience, visual promotion can produce expectations that the installation cannot sustain.

Questions of cultural selection, language, and participation also reveal that immersive visualization is not neutral. Hooper-Greenhill's interpretive museology emphasizes that museum displays construct knowledge through selection and presentation. The criticism of limited English access and Java-centred representation is therefore significant, even when expressed by a minority. Large-scale visualization magnifies not only the cultures included in a narrative but also those omitted from it. Similarly, Paras Nusantara enabled participation through facial recognition, but the interface required sufficient explanation to prevent visual resemblance from being understood as a fixed cultural identity. In line with Simon's participatory museum, meaningful participation requires interpretive agency rather than interaction with a screen alone. The artifact-anchored visitor sequence extends Falk and Dierking's contextual understanding of museum experience by adding a digitally mediated threshold before the visit and a continuing layer of memory after it. The sequence moves from digital anticipation to spatial orientation,

immersive encounter, renewed artifact interest, and post-visit continuation. This pattern provides the empirical basis for a connected visual experience, in which each stage directs visitors toward the next without imposing a rigid route. Digital attraction encourages attendance, spatial orientation prepares attention, immersion generates curiosity, and artifacts convert curiosity into historically grounded understanding. Museum transformation must consequently be understood across educational, representational, spatial, participatory, and governance dimensions. Managerial evidence concerning capacity, briefing, circulation, technical maintenance, content renewal, human resources, and electrical stability demonstrates that immersive installations are also service and operational systems. This supports Parry's argument that museum digitalization changes institutional practice, not only display media. From a designer-researcher perspective, the task is therefore to coordinate visual communication, curatorial content, spatial movement, technical infrastructure, and visitor services as one sustainable experience. Several design implications follow. Immersive narratives should maintain identifiable links to artifacts; transitions between digital promotion, immersive rooms, and physical galleries should be designed as one journey; sensory intensity should be balanced with clarity and reflection; representation should be multilingual and culturally inclusive; and every installation should have provisions for maintenance, content renewal, and visitor evaluation. These principles reposition the designer from a producer of visual effects to an orchestrator of cultural relationships.

The interpretation remains bounded by the qualitative single-site design. The questionnaire findings are descriptive, while the nine-person supplementary validation cannot support population-level generalization. The study also relies substantially on reported experience rather than systematic behavioral tracking. Future research should combine interviews with documented visitor routes, stopping duration, gaze direction, and longitudinal follow-up across different museums. Within these limits, the study demonstrates that the central question is not whether museums should choose artifacts or technology, but how both can be connected. Technology can make cultural narratives spatial and emotionally accessible, while artifacts and curatorial context give those narratives historical weight.

Conclusion

This study shows that immersive technologies can transform the visitor experience at the National Museum of Indonesia when they are integrated with original artifacts, curatorial narratives, spatial design, and the visitor journey. The installations increased visual attention, strengthened the museum atmosphere, and stimulated cultural curiosity; however, sensory intensity alone did not guarantee narrative comprehension. Original artifacts remained the primary source of authenticity and historical credibility, while digital media expanded the contexts through which those artifacts could be imagined and understood. On this basis, the study advances two related concepts: artifact-anchored visual hyperreality, in which digital simulation remains grounded in material evidence, and connected visual experience, in which each stage of the visit guides visitors toward deeper engagement with the museum's collections.

These findings suggest that museum innovation should be planned as a continuous experience that begins with pre-visit digital exposure, continues through spatial orientation and immersive

encounters, and encourages further engagement with original collections and post-visit reflection. Effective implementation requires clear connections between artifacts and digital media, culturally inclusive representation, multilingual interpretation, balanced sensory design, and practical systems for maintenance, content renewal, and visitor evaluation. As a qualitative case study conducted at a single museum, this research does not claim statistical generalizability. Future studies should combine visitor accounts with route tracking, gaze patterns, dwell-time observation, and longitudinal follow-up across multiple museums. Within these limitations, the study indicates that meaningful museum innovation depends not on technological spectacle alone, but on the careful integration of design, curation, material culture, and visitor experience.

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