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## VIRTUAL MUSEUMS AND THE TRANSFORMATION OF CULTURAL EXPERIENCE: BETWEEN PRESERVATION, MEDIATION, AND INTERPRETATION

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**N. Bedrina. Virtual museums and the transformation of cultural experience: between preservation, mediation, and interpretation**

**The relevance of the study.** The article addresses the growing need for a profound understanding of digital transformation within museum practices, particularly the shift toward virtual exhibitions. As digital curation becomes increasingly significant in the context of cultural heritage and audience engagement, this research explores how these technologies reshape the interpretive and experiential dimensions of museums.

**The purpose of the study** is to investigate how virtual museums reshape cultural experience through the interconnected processes of preservation, mediation, and interpretation.

**The methodology.** A qualitative methodology was applied, combining discourse analysis of curatorial texts, comparative case studies of recent digital projects, and critical evaluation of theoretical literature. The selection of twelve representative sources was guided by their contribution to contemporary museum studies discourse, with particular focus on visitor participation, interpretation, and visual culture.

**The results.** The research finds that virtual museums not only extend physical accessibility but also introduce new challenges related to interactivity, representation, and narrative authority. Curatorial decisions in digital spaces increasingly involve ethical considerations and technological affordances, shaping how cultural content is framed and consumed.

**The scientific novelty.** This study contributes to the field by synthesizing recent international research and proposing an integrated analytical framework for evaluating digital exhibitions. It identifies a gap in existing literature regarding the cultural and epistemological implications of digital curatorship.

**The practical significance.** The findings are relevant for museum professionals, curators, and designers of virtual exhibitions. They offer insights into best practices for enhancing user engagement and interpretive clarity in digital heritage environments.

**Conclusions:** virtual exhibitions represent a dynamic and evolving form of museum communication that

requires interdisciplinary collaboration and continuous methodological innovation. Future research should expand into non-Western contexts and further develop participatory and inclusive curatorial strategies in digital settings.

**Keywords:** *virtual exhibitions, digital curation, museum theory, visitors experience, cultural heritage, interpretation, interactivity, representation, visual culture, online museums.*

**Н. С. Бедріна. Віртуальні музеї та трансформація культурного досвіду: між збереженням, медіацією та інтерпретацією**

Досліджено трансформації музейної діяльності в умовах цифрової культури, зокрема розвиток віртуальних виставок. Метою розвідки є аналіз впливу цифрових технологій на кураторські стратегії, інтерпретаційні підходи та взаємодію з аудиторією. Методологія ґрунтується на якісному аналізі кураторських текстів, порівнянні цифрових музейних практик та критичному огляді актуальної літератури з музейних студій. Результати виявляють ключові виклики, пов'язані з репрезентацією, інтерпретацією та залученням користувачів у віртуальному середовищі. Новизна полягає в цілісному культурологічному підході до аналізу віртуального експонування, практичне значення — у формуванні аналітичного підґрунтя для осмислення впливу цифрових технологій на кураторське проектування, структурну організацію віртуальних експозицій та моделі взаємодії з аудиторією, що може бути використане в процесі розробки музейних цифрових стратегій.

**Ключові слова:** *віртуальні виставки, цифрова кураторська практика, музейна теорія, досвід відвідувача, культурна спадщина, інтерпретація, інтерактивність, репрезентація, візуальна культура, онлайн-музеї.*

**The relevance of the research topic.** In an era defined by digital transformation, virtual museums have emerged as both a response to technological innovation and a reconfiguration of how heritage

is accessed, represented, and experienced. The global shift toward digitization — accelerated by the COVID-19 pandemic — has challenged traditional museological practices, foregrounding the role of digital interfaces, online exhibitions, and remote curation in shaping symbolic meaning. This topic is particularly relevant as it intersects with broader debates in cultural studies, museum theory, and media theory concerning the mediation of heritage, the construction of narratives, and the evolving role of audiences.

Against this backdrop, the urgency of addressing both theoretical and practical gaps in digital museology becomes even more apparent. In the context of the full-scale war against Ukraine, the urgency of digital heritage preservation has become especially acute. As cultural institutions face destruction, displacement, or restricted physical access, virtual museums offer a crucial means of safeguarding and communicating national memory, identity, and resilience. Investigating how virtual museums transform visitor experience thus sheds light not only on technological adaptation, but also on fundamental changes in how societies engage with memory, identity, and interpretation in conditions of disruption and threat — both in the postmaterial age and in times of war. This article argues that virtual museums constitute a paradigmatic shift in curatorial logic, whereby meaning is co-produced through interface design, user agency, and non-linear narrative structures.

**Problem statement.** The rise of virtual museums has not only expanded access to cultural heritage, but also introduced fundamental shifts in the ways heritage engagement is structured, mediated, and interpreted. While digital platforms offer new opportunities for preservation and presentation, they also raise critical questions about the authenticity of engagement, the role of curatorship, and the nature of museum knowledge in dematerialized environments. The problem lies in the fact that many existing theoretical frameworks remain grounded in assumptions tied to physical museum space — material presence, linear narratives, and fixed authorship — which may no longer fully apply in virtual contexts.

Addressing this gap is essential for both theoretical understanding and practical application.

On the one hand, museum professionals must adapt their curatorial strategies to align with new modes of interaction and meaning-making. On the other, scholars in cultural studies and museum theory need refined conceptual tools to critically assess how digital mediation reshapes collective memory, identity formation, and public access to museum collections. By exploring the transformation of visitors' meaning-making through virtual museums, this research contributes to the development of more responsive, inclusive, and interpretively open models of heritage communication.

**Recent research and unresolved questions.** The digital turn in museology has prompted significant scholarly attention to how virtual technologies reshape the ways heritage is preserved, mediated, and interpreted. Foundational works such as Bennett's *The Birth of the Museum* (1995) and Hall's *Representation* (1997) have established critical frameworks for understanding museums as ideological and cultural institutions. Hooper-Greenhill (2000) extended this conversation by emphasizing the interpretive dimensions of museum communication, while Bal (2022) introduced visual and narrative analysis as tools for decoding exhibitionary display.

More recent studies have examined the implications of digital technologies for curatorial practice and audience engagement. Witcomb and Message's *Museum Theory* (2020) and Giannini and Bowen's *Museums and Digital Culture* (2019) offer comprehensive overviews of digital heritage theory and practice. Lubar (2017) and Garcia Cepeda (2020) explore curatorial authorship and exhibition design in physical and virtual environments, while Cameron (2007) highlight new perspectives on digital mediation, accessibility, and innovation. Research by Lu et al. (2023) presents an empirical model of technological evolution in visitor experiences, and Vom Lehn and Heath (2005) critically assess how interactive technologies affect perception and social interaction within exhibitions. Policy-oriented analyses, such as the Nesta, School of Journalism, Media and Culture and Cardiff University report (2019), address the practical challenges of implementing immersive technologies in museums and heritage spaces.

While Ukraine has its own museum science, this article draws primarily on international academic literature due to the lack of extensive theoretical work in Ukrainian studies specifically focused on virtual museums and their cultural implications. The selected sources reflect globally recognized debates in cultural theory, museology, and media studies, and provide the conceptual grounding required for analyzing cultural experience in digital environments.

In parallel, questions of epistemology, authority, and interpretive openness remain underexplored. While much has been written about digitization and access, less attention has been given to the meaning-making logics of interface design, narrative framing, and the shifting roles of users and curators in the production of meaning.

This article addresses these gaps by focusing on virtual museums as sites where cultural experience is not simply digitized, but fundamentally restructured. It examines how digital environments transform the conditions of preservation, shape the mechanisms of mediation, and challenge conventional models of interpretation.

**The purpose of this article** is to investigate how virtual museums reshape cultural experience through the interconnected processes of preservation, mediation, and interpretation. The research objectives: to determine how digital technologies and virtual platforms are changing traditional approaches to the preservation of museum objects and how this affects their authenticity; to examine the role of interfaces and digital design in shaping access, presentation, and content of virtual exhibitions; to analyze how the ways of creating meaning change in the virtual environment, particularly through visitor participation and various formats of material presentation; to identify the main challenges for virtual museums related to accessibility, representation, and the commodification of heritage.

**Conceptual framework of the study.** The study of virtual museums as cultural environments emerges at the intersection of multiple academic conversations on representation, interpretation, and institutional authority. This paragraph outlines the conceptual background that frames the museum not merely as a space of display, but as a discursive structure that produces and organizes meaning.

In early museum theory, the museum is understood as a site of ideological construction and knowledge production — a framing advanced in foundational works by Bennett (1995) and Hall (1997), who argue that cultural institutions participate in shaping social narratives through structured forms of representation.

Building on this, Hooper-Greenhill (2000) explores how museums act as interpretive environments, suggesting that meaning is not inherent in objects, but emerges through systems of classification, visual display, and audience interaction. Bal (2022) complements this approach by proposing a method of “image-thinking”, treating exhibitions not just as containers of content, but as critical narratives shaped by curatorial choices and visual logic.

Contemporary research extends these ideas into the digital sphere: Giannini and Bowen (2019) examine how digital tools reconfigure spatial and semantic structures in museums, while Witcomb and Message (2020) focus on the transformation of authority and participation in digitally mediated cultural institutions.

Together, these theoretical positions construct a foundation for understanding virtual museums as not only technological environments, but as exhibitionary interfaces that produce meaning through interpretation, mediation, and design. This conceptual foundation allows us to examine how virtual museums operate across different formats and platforms in the contemporary digital landscape.

**Virtual museums in contemporary culture.** The term *virtual museum* encompasses a broad spectrum of digital platforms that present, interpret, and disseminate cultural heritage. These include online archives, interactive 3D tours, augmented or virtual reality experiences, and gamified environments. Unlike physical museums, virtual counterparts often lack a fixed location, operating instead as dynamic, networked interfaces that reconfigure how users engage with heritage artefacts.

Typologically, virtual museums can be categorized into several formats. Online archives prioritize access and searchability, functioning as digital repositories with metadata-rich databases. 3D tours simulate the spatial logic of traditional exhibitions,

enabling users to “walk through” curated spaces from remote locations. More experimental platforms adopt gamified or immersive designs, incorporating narrative quests, avatars, or interactive storytelling elements that turn users into co-creators of experience.

Beyond their technical forms, virtual museums also reshape the museum’s function in cultural construction. Hall (1997) conceptualizes culture as a site of meaning-making where representations are continuously contested and negotiated. From this perspective, the museum is not a neutral container of knowledge but an active agent in framing historical narratives and identities: “The emphasis on cultural practices is important. It is participants in a culture who give meaning to people, objects and events” (p. 3). Bennett (1995) extends this view by situating museums within broader governmental and pedagogical apparatuses that produce particular kinds of heritage subjects: “... the public museum exemplified the development of a new ‘governmental’ relation to culture in which works of high culture were treated as instruments that could be enlisted in new ways for new tasks of social management” (p. 6).

In digital environments, these cultural functions become even more complex. With the decentering of the physical artefact, the emphasis shifts from object preservation to user interaction. Interfaces, databases, and narrative paths replace the authority of the display case. This reflects a broader epistemic shift: the museum becomes not just a space for viewing objects but a medium for generating meaning through experience design, interactivity, and user participation.

In this context, the virtual museum functions simultaneously as an archive, interface, and discursive space — one that redefines how culture is curated, accessed, and imagined. One of the most visible impacts of digitization is in the realm of preservation, where digital logic reshapes not only access, but the very meaning of keeping and transmitting artefacts.

**Preservation: digitization and the aura of the object.** Virtual museums redefine the concept of preservation by challenging the traditional focus on the material integrity of artefacts. In contrast to conventional institutions, where preservation

relies on physical conservation and environmental control, digital museums emphasize continuity through replication, metadata, and interface logic. This postmaterial shift foregrounds not the artefact itself, but its digital representation — endlessly reproducible, malleable, and accessible beyond spatial and temporal constraints.

The implications for authenticity are profound. Drawing on Benjamin’s notion of the “aura”, Bal (2022) suggests that digitization does not necessarily strip museum objects of their value but reconfigures it within new technological contexts: “The specific attraction of an exhibition based on the spatialisation of a film may well be the complicating ways in which narrative is broken up, so that no story is maintained, yet, narrativity — with its dynamism, movement, time, durational effects — can even become stronger»” (p. 84).

This reconfiguration is not neutral; it changes how objects are experienced and remembered. Hooper-Greenhill (2000) adds that meaning is always mediated in museums — a condition amplified in virtual settings, where mediation is technological as much as curatorial: “The biggest challenge facing museums at the present time is the reconceptualisation of the museum/audience relationship” (p. 1).

Rather than being peripheral tools, digital platforms become central actors in shaping heritage. Lubar (2017) discusses how curation shifts from object-centric display to the management of metadata and narrative structures. As he explains: “There’s a long history of artists making art of museum exhibitions. Sometimes this is literal: paintings and photographs of the galleries. But some artists go beyond that, remaking the exhibition as their art. They turn the tables on the museum and put the museum itself on display, revealing the choices made, objects included and not included, history told or silenced. They expose the museum’s mechanisms. Institutional critique reveals the people, ideologies, and interests behind the scenes»” (p. 325).

Similarly, reports by Nesta, School of Journalism, Media and Culture and Cardiff University (2019) illustrate how immersive and interactive technologies extend the idea of preservation into realms of simulation, allowing virtual reconstructions of



destroyed or inaccessible artefacts. Yet these reconstructions prioritize visual coherence over material fidelity, thus privileging user experience over physical accuracy (p. 15).

In this context, preservation becomes a dynamic cultural practice, embedded in interface design, narrative structure, and institutional ideology. The virtual museum is not merely a digital vault but a storytelling system that encodes decisions about what is remembered, how, and by whom. However, preservation is only one aspect of this transformation; equally important is the role of digital mediation in shaping how content is perceived and experienced.

**Mediation: interface, access, and narrative control.** As digital museums foreground simulation and interactivity, mediation emerges as a key concept in understanding how users engage with heritage. Unlike physical exhibitions, where spatial arrangement and architectural flow guide the visitor, virtual museums rely on screens, code, and interaction logic to deliver cultural meaning.

Interfaces are not passive tools; they structure how content is accessed, interpreted, and emotionally registered. Vom Lehn and Heath (2005) warn that digital technologies, while offering flexibility, may also fragment attention and isolate users, undermining the social dimension of museum visits. This transformation affects not only how content is received but also who controls its framing (p. 8-9).

Garcia Cepeda (2020) emphasizes that interface design itself carries curatorial authority (p. 20). By embedding choices, narratives, and interaction flows, designers limit interpretive autonomy even as they simulate openness. Giannini and Bowen (2019) extend this critique by identifying the interface as a semiotic filter that directs perception, assigns hierarchy, and signals value (p. 5).

Cameron (2007) underscores the cultural and political dimensions of digital heritage mediation, arguing that technologies not only transmit content but also actively shape interpretive frameworks and institutional authority. As he observes: “Contemporary discussions on the impact of multimedia technologies on museums tend to assume a radical difference between the virtual and the material world, a difference that is conceived in terms of a series of oppositions. The material world carries weight — aura, evidence, the passage of time,

the signs of power through accumulation, authority, knowledge, and privilege. Multimedia, on the other hand, is perceived as the ‘other’ of all of these — immediate, surface, temporary, modern, popular, and democratic” (p. 35).

Thus, mediation in virtual museums is not a neutral transmission of knowledge but a system of cultural encoding — one that blends curatorial vision with technological constraints to shape how history is encountered and understood. While mediation addresses access and framing, interpretation raises deeper questions about how users make meaning within digital heritage environments.

**Interpretation: meaning-making in virtual space.** Virtual museums do not only display content — they co-create meaning through participatory and multimodal structures. Interpretation shifts from fixed, curator-led narratives to user-responsive and often decentralized forms of engagement.

Hooper-Greenhill argues that all interpretation is context-dependent and contingent (2000). In digital environments, this contingency is heightened: hyperlinked navigation, branching storylines, and user-controlled sequences multiply possible readings. Hall’s model of representation supports this dynamic, proposing that meaning emerges through negotiated codes between producer and receiver (Hall, 1997, p. 15–17).

Witcomb and Message (2020, p. 321) highlight the dialogic potential of digital heritage, noting how multiple voices and perspectives can coexist within the same platform. This shift away from singular authority reflects broader trends in cultural theory toward polyvocality and inclusion. However, as Lu et al. demonstrate, user freedom is never absolute; digital experiences remain bounded by design logic, platform architecture, and institutional intentions (Lu et al., 2023, p. 155; 161).

In sum, interpretation in virtual museums is co-produced. It results from the interplay of technological mediation, curatorial strategy, and user interaction — a field of meaning-making where control and creativity constantly negotiate their boundaries.

**Challenges and critical reflections.** Virtual museums raise new sets of cultural, ethical, and political challenges that demand critical scrutiny. One major concern is the *politics of access*. While

virtual platforms are often celebrated for their inclusivity, digital inequality persists across regions and communities. Unequal access to technology and broadband infrastructure limits participation, reinforcing existing cultural hierarchies.

Equally pressing is the issue of *representation*. As virtual museums digitize and circulate heritage, questions arise about whose stories are told and whose are omitted. While some platforms aim to amplify marginalized voices, others risk reproducing dominant narratives under the guise of neutrality.

The *commodification of heritage* is another source of concern. When cultural materials are reformatted for online consumption, they can become “content” — stripped of context and embedded in market logic. This raises ethical questions about the ownership and commercialization of cultural memory.

Finally, *ethical dilemmas* emerge around authenticity, intellectual property, and cultural context. Who owns a digitized object? What happens when sacred or sensitive items are made globally accessible? How can virtual museums respect the meanings embedded in physical artefacts while using them in new, digitally mediated ways?

These challenges suggest that digital heritage is not just a technical matter but a cultural field shaped by power, ideology, and design. Critical engagement with these tensions is essential for ensuring that virtual museums remain inclusive, ethical, and culturally meaningful.

**Conclusion.** The study confirmed that virtual museums significantly transform the cultural experience of visitors, integrating the processes of preservation, mediation, and interpretation into new forms. Digital technologies reshape traditional

approaches to preservation, shifting the focus from physical authenticity to digital representation, which provides broader access but simultaneously raises new questions regarding accuracy and ethical presentation. Interfaces and digital design have become key tools in shaping content, determining how users perceive and interact with material. In the virtual environment, meaning-making takes on a participatory character, allowing visitors to become co-creators of the experience while maintaining the influence of curatorial decisions. At the same time, significant challenges remain, including unequal access to technology, representation of diverse groups, and the risk of heritage commodification. The findings highlight the need for further development of the ethical and methodological foundations of digital curation to ensure inclusivity, authenticity, and cultural relevance of virtual museums.

**Directions for further research.** Further research could explore how virtual museums function in diverse cultural and socio-political contexts, particularly in underrepresented or non-Western regions. Comparative studies may reveal how local heritage values influence the design and interpretation strategies of digital exhibitions. Additionally, longitudinal studies examining how user interaction evolves over time could provide insights into the sustainability and long-term impact of virtual museums. Another promising direction is the investigation of ethical frameworks for digital curation, especially in relation to contested histories and marginalized voices. These areas offer rich potential for expanding the theoretical and practical understanding of virtual heritage environments.

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