Museum Visit as a Communication Situation: Experience, Mediation and Meaning-making in Madagascar's Science Museums

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Abstract

This research examines the guided museum visit as a multi-channel communication situation across two scientific and heritage museums in Madagascar. Drawing on ethnomethodology and semio-contextual analysis, the study highlights the central role of cultural and educational mediation in articulating audiences' emotional engagement, cognitive understanding, and cultural identification. Based on questionnaires, semi-structured interviews, and participant observation, the findings confirm the decisive influence of co-constructing of meaning, of the poetic and expressive dimensions of scenography devices, and of identity references in shaping the quality of the visitor experience. This study concludes with operational recommendations to foster immersive, interactive, and participatory devices capable of establishing highly communicative mediation that attracts a new generation of visitors.

Keywords: museum mediation; guided visits; communication situation; ethnomethodology; semio-contextual analysis; Madagascar.

1. Introduction

1.1 Museums as Vectors of Multi-Platform Communication

Given the limited number of science museums in Madagascar, their pedagogical and identity roles become crucial — especially since school curricula present recurring limitations in terms of raising awareness of scientific and cultural heritage. Against this backdrop, research in Information and Communication Sciences focusing specifically on museum communication in the Malagasy context remains rare. From this perspective, the study approaches the guided visit not only as a pedagogical device but as a complex communication situation were involving a plurality of actors (mediators, teachers, audiences), channels (oral mediation, labels,

scenographic devices, digital supports) and messages of a scientific, cultural, identity-related nature.

The study focuses on two emblematic institutions (sites anonymised for ethical reasons). The first site houses natural history and ethnographic collections; the second, with an academic environment, focuses on archaeology and the arts. Together, they provide a fertile ground for analysing how cultural and educational mediation interlace to produce a rich visitor experience combining heritage narrative, scientific demonstration, and identity references.

The aim is twofold: (1) to examine how the guided visit, understood as a situation of communication, combines scientific and cultural dimensions; (2) to identify the interactional and sensory mechanisms that support effective knowledge acquisition (co-construction of meaning, affective engagement, material and linguistic scaffolds). This study ends with recommendations to optimise educational and cultural impact through immersive, interactive, and participatory approaches, while preserving institutional anonymity.

Guiding question: How does the guided visit, conceived as a communication situation, foster learning and heritage resonance in these two museums? In the light of the functions of language and the constituent components of any communication situation [1], interactional analysis of mediation routines [4], and a semio-contextual reading of environments [5], which devices and contexts effectively support attention, engagement, and memory across the two sites?

To move beyond a purely descriptive view of practice, this research questions a recurring blind spot in museum studies in African context: how, in concrete terms, do interactional devices and semio-contextual frames shape visitors' appropriation of knowledge and the resonance of identity during the visit? This study hypothesised that the guided visit, viewed as a full-fledged communication situation, operates at the intersection of three registers—discursive, sensory, and social—whose alignment conditions attention and memorization [1–5]. Hence the central question: which configurations (verbal routines, staging choices, and rules governing the circulation of attention and images) foster audience engagement, and what discrepancies hinder it?

1.2 Mediation Between Knowledge, Culture, and Communication

Museum mediation is best approached as a composite process articulating three inseparable dimensions: cultural, educational and communicational. In Jean Davallon's terms, cultural mediation forges the link between audiences and heritage and contributes to a shared identity by making objects meaningful for a reference community. In parallel, educational mediation prioritises the organization and clarity of knowledge, in accordance with Daniel Jacobi's conceptualisation, to ensure the progression of scientific concepts and their appropriation by visitors. The communicational dimension joins these two registers: it lives in direct exchanges, structured discourse and a plurality of supports (texts, images, objects, scenographic devices, digital interfaces) which orchestrate the circulation of meaning during the visit.

The modelling of the message, the channel, the code and the context—together with the functions of language—offers a practical lens for reading guided-tour talk, supporting materials and scenography.[1]

Analytically, the approach is in line with Jakobson's reflection on communication —one of the earliest robust formalisations of the communication situation — reminds the authors that no one ever speaks "into a void". An exchange holds because several pieces interlock: who speaks, to whom, about what, via which channel, with which codes, and how it is shaped. Each piece maps onto a function of language that may dominate at a given moment: the referential function structures the knowledge presented, the phatic function keeps the channel open and attention alive, the conative function invites participation, the metalinguistic function clarifies terms and codes, and the poetic function gives the discourse a felt form (story, analogy, ambience) — alongside the speaker's expressive stance. In museum visiting, mediation is thus not a simple transfer of information but a continual "tuning" between content and relationship: a prompt to relaunch, a quick definition, an image that sticks, a short narrative — all in the service of making meaning and anchoring it in memory.[1]

This study then draws on Harold Garfinkel's ethnomethodology, attentive to the interactional patterns that regulate communication between mediators and visitors in the museum situation. Particular attention is paid to the "question–validation–story" triad: a question (from the visitor or prompted by the guide) opens the space of exploration; validation (reformulation, confirmation, anchoring in the object) stabilises a minimal agreement on meaning; and the narrative (plotting, contextualization) aggregates cognitive, sensory and cultural elements. This triad reflects an active co-construction of meaning, where visitors are not mere recipients but co-authors of interpretation.

In complement, the study mobilises Alex Mucchielli's semio-contextual analysis, which proposes a seven-context grid for situating how meaning is produced and received: cultural, normative, positional, identity-related, spatio-temporal, physico-sensory and socio-cultural. This grid helps describe, for example, how implicit norms (do not touch), interactional positions (roles and expectations of guide, teacher, student), sensory cues (lighting, sound, materiality of the collections) and identity references (local narratives, shared symbols) concretely steer the visit experience. By articulating these contexts, the analysis clarifies the real conditions under which museum messages are received and the levers through which mediation can at once transmit knowledge, promote a culture and sustain genuinely shared communication. These anchors converse with the literature on contextualized learning in museums,[6] constructivism in museum education,[7] attention dynamics,[8] participatory mediation,[9] and the experience economy,[10] all within the ethical framework recalled by ICOM.[11]

Operationally, the study combines Jakobson's model (to track the structure and functions of messages) [1], ethnomethodology (to describe the co-construction of meaning in action) [4], and Mucchielli's semio-contextual grid (to situate identities, norms, positions, and the sensorium [5]

and discourse analysis [12]) to provide an integrative analytic device. This composite framework aligns with the literature on contextualized learning in museums and on meaning-making through experience [6–7], and fits the hybrid nature of the object — neither purely pedagogical nor purely patrimonial.

2. Method

2.1 Sites and participants: Two Museum Scenes, Two Ways of Instituting Knowledge

The Site 1, with a focus on natural sciences and ethnography, offers a broadly chronological, evolutionary itinerary: fossils, large skeletons, mounted specimens, and everyday objects weave a narrative that conveys the depth of natural and cultural time. The Site 2, tied to a university environment, brings together collections of archaeology, art, and ethnography; certain pieces — such as a funerary statuette — condense scholarly knowledge, ritual symbolism, and social memory. While both institutions share the ambition to transmit, their positioning differs: at Site 1, the visual power of natural history collections immediately establishes a scientific ethos; at Site 2, academic legitimacy and disciplinary diversity structure mediation. In both cases, visitor rules — for instance certain constraints on image use — influence the social circulation of content. These are public rules disclosed to visitors, not confidential information.

2.2 Data Collection Procedures

The study combines two sessions of participant observation during guided visits ($\approx$ 75 and $\approx$ 68 minutes), seven questionnaires at Site 1, and three semi-structured interviews at Site 2 with adolescents and young adults. Sampling was purposive (audiences present at the observed time slots), with a majority of women and a generally young profile. Visit modalities (free/guided) and access rules (including, where applicable, restrictions around image use) were incorporated into the analytic context.

2.3 Coding and Analysis

Transcriptions were coded with a grid crossing interactional routines (questioning, validation, reformulation, anecdote, reminder of rules) and semio-contextual dimensions (identity, norms, positionality, spatio-temporal, physico-sensory). Triangulation across observations, questionnaires, and interviews, together with cross-reading, ensured interpretive stability. At the institutions' request, potentially sensitive details (e.g., named or annualized attendance series) were excluded; analysis focuses on qualitative mediation dynamics.

2.4 Ethics Statement

This qualitative study adhered to disciplinary ethical standards for research with human participants. Data collection was limited to naturalistic observations, short questionnaires and semi-structured interviews conducted on site during or immediately after guided visits. Participation was voluntary; verbal informed consent was obtained from adult participants. For participants under 18 accompanied by a teacher or guardian, assent was obtained from the minor

and verbal consent from the accompanying adult. All materials were anonymized at source: no names or identifying metadata were collected; institutional identities are anonymized in the reporting; potentially sensitive operational figures (e.g., detailed attendance series) are not disclosed. No experimental manipulation was involved. Data collection complied with the public rules in force within the institutions (e.g., photography restrictions).

3. Results

3.1 Visitor Profiles and Expectations

Questionnaires confirm a clear preference for guided visits over label-only reading:
Based on the data collected at Site 1 (a museum with naturalist and ethnographic collections), approximately 70% of respondents stated that they preferred guided tours, with an overrepresentation of young and female audiences. At the same time, a comparable proportion expressed a desire for more systematic guided mediation, indicating that beyond the one-off format, regular and transparent supervision of mediation is expected. The interviews conducted (Sites 1 and 2) confirm this observation: the appeal of the collections is strong, but the scenography appears prone to faltering when the diversity of activities (variations in pace, supervised manipulations, dialogical pauses) is lacking, which reinforces a perception of monotony. The crux of the problem therefore lies not in the scientific value of the objects, but in the manner in which they are communicated: when the question-validation-story triad is not fully activated, the co-construction of meaning falters and lectures tend to dominate.

Motivations mix curiosity, explicit links to school subjects (biology, history, Malagasy), and a search for authenticity. Satisfaction is tied to encounters with iconic objects — large saurians, an "elephant bird" — and to a "hot" gain in knowledge visible among younger audiences. Expectations include additional visual and digital support, more interaction, a livelier rhythm, and stronger external visibility. At Site 2, students emphasise the heuristic value of collections (sources for coursework, iconography, artefacts) while noting that certain constraints can limit downstream use of the experience.

Several verbatim statements illuminate this engagement dynamic. A visitor on readability: "Without a guide, I look, but I don't know what to take away."[13] A student emphasizes the heuristic value: "Here, I see what I've been reading in archaeology."[14] A parent on accessibility: "Kids latch on as soon as you tell a story."[15] These remarks confirm that narrative framing and concrete anchors are crucial to convert initial wonder into situated learning.[6–8]

Following the pandemic dip in attendance, 2022 shows a rebound, confirming public appetite while highlighting specific expectations: (i) more interactivity and visual supports to sustain attention and memorization; (ii) explicit alignment with the school framework (biology curricula links, teacher/student worksheets, announced learning goals); (iii) a stronger digital presence (website, social networks, short multilingual content) to prepare and prolong the visit.

Taken together, these results converge towards the same diagnosis: to convert the attraction of the collections into effective learning, Site 1 should privilege continuous, interactive, and visually equipped guided mediation, able to install feedback loops and clearly articulate objectives, content and visitor experiences.

From an ethno methodological perspective, exchanges benefit from conversational regulation: visitors' questions trigger feedback loops, and validation—via reformulation, demonstration or material support—stabilizes meaning before it is gathered into a narrative that articulates scientific components, sensory cues and identity referents. From a semio-contextual perspective, the limited variation across contexts (notably physico-sensory and positional) explains the impression of a single dominant channel. By diversifying modes of address (guide postures, alternation of spoken/visual, ostensive gestures) and adjusting implicit norms (e.g., supervised handling windows), the visit gains in multi-channel and engagement.

In short, the data indicate that the preference for the guided visit goes hand in hand with a demand for structured, interactive mediation. The Co-constructing of meaning (question–validation–story) and the opening up of sensory and linguistic contexts emerge as the determining levers for turning the pull of the collections into effective learning and an engaging experience.

3.2 Active Strengths and Blind Spots

Shared strengths lie in robustness of content, the presence of attention-grabbing objects, real mediation know-how, and an explicit educational anchoring. Blind spots mainly relate the phatic function (relaunches, pacing, variation), an underused poetic function (atmospheres, micro-narratives, analogies), a digital mediation that needs to be structured, as well as the need for more regular visibility and renewal. Empirically, this study shows that the QVR pattern (question–validation–Narrative) and minimalist sensory piloting are enough to increase engagement, whereas non-situated rules generate an attentional cost.

4. Discussion

4.1 Jakobson: Message Functions and Attention: towards a diagnosis of partial activation

Roman Jakobson's model offers a particularly fruitful frame for analyzing interactions in a museum context, as it allows for the joint observation of message content, the mark of the sender, the audience's focus, the opening and maintenance of the channel, code clarification, and the shaping of discourse. Applied to guided visits at two museums in Madagascar—one focused on natural history and ethnography (Site 1), the other embedded in an academic focus on archaeology and the arts (Site 2)—this lens reveals how the different language functions align or conversely misalign, throughout the visitor experience.

In both sites, institutional enunciation is carried by researchers and technical-scientific teams whose legitimacy is recognized, lending the discourse a strong foundation of credibility.

Audiences are mostly young school groups, students, families—addressed through dense referential messages that foreground natural and cultural heritage (Site 1) or civilizations and the arts (Site 2), drawing on collections of several thousand artefacts. Mediation relies on showcases, organized visits, permanent and temporary exhibitions, and guided or self-guided visits, sometimes complemented by workshops during periodic events. Communication is bilingual (oral/written), which facilitates access to the linguistic code for heterogeneous audiences; by contrast, the digital layer remains limited, with a discreet social-media presence and few interactive devices in the galleries.

A function-by-function reading yields a mixed picture. On a referential level, content is robust, documented and anchored in established knowledge, ensuring scientific relevance. The expressive function is supported by the authority of the transmitters, yet polyphony is uneven: the diversity of voices—guides, teachers, visitors—is not always orchestrated to produce genuine dialogue. The cognitive dimension, which should solicit visitor initiative, appears only intermittently: explicit invitations to question, compare, or connect with personal experience are not systematic, so initiative often remains constrained. Likewise, the phatic function—the art of creating entry thresholds, relaunches and steady attention—is underused: transitions, opening micro-rituals, and feedback loops are not always established, which weakens attentional continuity.

The metalinguistic function, although helped by bilingual practice, would benefit from being better equipped with glossaries, on-the-fly definitions, and stable terminological references.
Finally, the poetic function— which concerns form and staging—emerges in aesthetic peaks (for example, before the monumentality of a giant, extinct endemic bird skeleton that elicits spontaneous awe), but these highlights remain scattered and insufficiently tied to target notions, limiting their cognitive yield.

Overall, Jakobson's lens suggests a partially activated communication: scientific information circulates and convinces, but the orchestration of the other functions remains uneven. The visit informs more than it activates, relaunches, explains or shapes continuously. Strengthening the phatic dimension (opening and maintaining the channel), systematizing conative cues, equipping metalinguistic clarification, and linking poetic effects to precise cognitive purposes would help convert collection appeal into lasting learning and memorable experiences—without weakening the referential requirement that is the strength of the two institutions studied.

4.2 Ethnomethodology: Interactions in action: the question–validation–narrative triad

Harold Garfinkel's ethnomethodology helps explain how, during a museum visit, meaning is practically and sequentially built through exchanges between mediator and audiences. From this perspective, visit is not a simple information transfer: it is a concerted activity where participants jointly produce a shareable world using ordinary methods—questions, validations, reformulations—that make the experience intelligible and memorable.

At Site 1 (natural history and ethnography), an observed sequence in front of the skeleton of a large carnivorous dinosaur illustrates this dynamic. The guide opens with a broad question, inviting hypotheses about the causes of the species' extinction. A visitor's spontaneous response ("because of the climate?") is immediately recognized and stabilized by the mediator, who then proceeds to deliver a narrative supported by paleontological clues (for example, environmental and material analyses) and an accessible temporal framing. This micro-choreography—open question, validation, narrative—moves the audience from a passive observational posture to active cognitive participation, showing that knowledge is co-developed in interaction rather than being unilaterally shared.

At Site 2 (university-oriented museum, archaeology and arts), a similar configuration emerges around a symbolic object derived from ritual practice. Visitor interpretations are welcomed, reformulated, and connected by the guide to anthropological references (social functions of the object, material inscriptions, regional variants), then embedded into a narrative that articulates provenance, uses and meanings. Again, the triadic sequence structures the progression: the question opens the space for exploration, the validation establishes a provisional agreement on what "makes sense", and the narrative gathers knowledge, sensory cues and cultural referents.

In both cases, interaction quality proves as decisive as the intrinsic value of the artifacts. By making visible the "members' methods"—those conversational routines by which the study agrees on what the study sees, understands and retains—ethnomethodology illuminates a horizontal, reflexive and situated mediation that sustains engagement, supports memory, and encourages emotional appropriation of knowledge. The recurring question–validation–narrative architecture thus appears as a pivotal device for co-constructing meaning, turning the visit into a shared reading of heritage with lasting meaning for audiences.

4.3 Semio-Contextual Levers: situated adaptations and levers to mobilise

Alex Mucchielli's semio-contextual approach invites the authors to analyze the museum visit as a communication situation whose meaning emerges from the interplay of several contexts—identity, positional, normative/cultural, spatio-temporal, physico-sensory and relational. Observed in two institutions in Madagascar (Site 1: natural history and ethnography; Site 2: university-oriented, archaeology and arts), these contexts combine in contrasting ways, revealing supports and friction points that affect message reception.

At Site 1, identity context is based on the visible presence of researchers affiliated with a national academy, lending strong scientific authority to the statements. The positional context, however, establishes an asymmetrical relationship: the guide occupies a dominant position facing an audience largely composed of students or non-specialists, whose understanding depends on the explanations provided. The normative frame is permissive (free entry, option to be accompanied or not), which offers flexibility but potentially unsettling first-time visitors who lack reference points. In terms of space and time, weekday opening the weekday opening of a single space—located in a heritage building—constrains the progression of the visit and homogenizes its rhythm. The physico-sensory dimensions are mainly visual (large fossils,

mounted specimens), while audio and tactile are rarely mobilized. Finally, the relational dimension relies on a bilingual address (oral/written), but with few multimedia supports, limiting channel diversity.

At Site 2, identity context emphasizes the academic legitimacy of faculty-researchers, while positional context tends towards greater horizontality during educational workshops. The normative frame is stricter—e.g., no photography—a choice consistent with preservation but in tension with contemporary practices of digital sharing and deferred pedagogical use. The spatio-temporal layout distributes the visit across three spaces (permanent, temporary, reserves) in the heart of the city, which improves visit legibility. The physical-sensory context, however, objects that are ritual or visually understated require stronger mediation: ostension, narrative and contextualization to reveal their perceptual and symbolic qualities. On the relational level, the museum focuses on transmitting cultural practices, but local visibility remains limited; the discourse is textually dense and poorly accompanied by interactive tools.

Across both sites, cultural and physico-sensory contexts are major levers for activating identity dimensions and supporting cognitive appropriation. The photography ban at Site 2, for example, may encourage attentive listening and a more contemplative experience; however, it produces a mis-alignment when it thwarts the aim of diffusion and extension via social media and network or asynchronous school uses. Similarly, the abundance of visual stimuli at Site 1 captures attention effectively, but the lack of sound or tactile devices creates a gap between expected spectacular effect and actual sensory experience. Positional and spatio-temporal contexts form the armature: they structure pathways, facilitate (or not) interaction, and condition the ability to vary tempos and points of view.

This semio-contextual reading thus highlights a wealth of content and a strong pedagogical intention, but also contextual discordances that act as noise in the communication sense: norms poorly compatible with digital mediation, limited multimodality in scenography, and low channel diversity.

Reducing these mis-alignments— for example, by installing framed photography windows at Site 2, introducing sound effects and controlled tactile moments at Site 1, and clarifying orientation markers and visit scripts——would better align form and purpose and optimize the educational, cultural, and social impact of their mediations This harmonization does not imply relaxing conservation imperatives; rather, it requires contextual engineering so each lever (identity, positional, normative, spatio-temporal, physico-sensory, relational) is adjusted to serve understanding, engagement and memory.

4.4 Identity and Heritage Resonance

In Madagascar's plural cultural landscape, identity-based anchoring of museum practices is decisive for visitors' experience. Observations conducted in both institutions show that integrating local cultural elements goes beyond simple contextualization of objects: it links

scientific knowledge to social and memorial perceptions already present among audiences. Thus, the display of traditional women's hairstyles, for instance, is not a mere ethnographic curiosity; it reactivates family or community memories, brings to the surface narratives, and refers to practices still alive in some urban and rural environments.

Likewise, the display of a funerary statuette associated with rites of passage in the west cultural group prompts sensitive reflection on death, transmission and ancestral presence. When the mediator places these objects within a situated narrative—articulating uses, symbolism, and regional variations—they become vectors of identification: on one side, intellectual appropriation is strengthened by clarifying meanings and value systems; on the other, emotional appropriation intensifies as visitors recognize in these material forms fragments of their own experience or that of their community.

This encounter between museum heritage and individual memory gives the visit genuine cultural resonance. It turns attention into engagement, curiosity into involvement, and enhances the satisfaction expressed in the empirical data. By highlighting local references that are sometimes marginalized in academic circles, museum narrative helps make plural heritages visible, while giving contemporary meaning to objects that, stripped of context, might seem distant or opaque.
In sum, the observed museums are not only places of preservation; they become spaces for recognizing and promoting of Malagasy identity in all its complexity. Provided they are mediated by sensitive and well-informed narratives—at the intersection of cultural (Davallon), educational (Jacobi) and communicational dimensions (in the sense of the frame used here) — artefacts act as anchors where knowledge, memories and belongings are articulated, and where a shared identification is built without compromising institutional anonymization or contextual confidentiality.

4.5 Recommendations: Immersion & Inclusion: Towards a renewed mediation strategy

Audiences express a preference for a more interactive, immersive form of mediation, where playfulness and tactile stimulation are solicited under clear conditions. The main gaps identified are primarily due to limited interactivity, low digital presence, and insufficient enriched visuals, as well as a lack of extended interactions via workshops or special events. While the two institutions have complementary purposes—Site 1 highlighting biodiversity and national identity; Site 2 extending an academic mission focused on heritage research and cultural outreach—visitors primarily seek authentic knowledge and experiences carried by guided mediation. Despite the quality of the collections and their link to formal education, a persistent lack of interactivity, external visibility and appropriate digital tools currently limits the educational reach and attractiveness of the offerings.

To attract a new generation and broaden audiences, this study proposes a three-pronged strategy—immersion, interaction, participation on the immersive side. Scenographic enrichment would benefit from using more evocative soundscapes, dynamic lighting, and spatialized ambiences capable of punctuating the experience and creating moments of sustained attention.

On the interaction side, the introduction of multimedia devices—augmented reality, discovery tablets, supervised handling stations— would provide concrete support to connect observation, experiment and key notions. Finally, participation can be amplified through co-designed workshops with schools and local communities, where content production (micro-narratives, interpretation cards, bilingual audio capsules) becomes a vector for appropriation and transmission.

In this perspective, targeted easing of some restrictions—especially the taking of photos in defined spatio-temporal windows —would promote social media mediation: relaying thematic challenges on networks, sharing «visitor's eye" and perspectives, asynchronous pedagogical reuse. Training guides in interactive facilitation and a maieutic/Socratic posture (relaunches, reformulation, linking object–idea–experience) constitutes a key lever to stabilize feedback loops and support co-construction of meaning. The whole aim is to close the communication cycle, by closely articulating museum, cultural, educational and communicational mediation, on-site as well as online, and to establish an inclusive experience where linguistic and sensory accessibility accompanies the growth of audience skills.

4.6 Contributions and Implications: models, practice, prospects

Conceptually, the article offers a conceptual clarification and an operational articulation of the functions of language [1], interaction dynamics in action [4], and semio-contextual frames [5] to describe the visit as a composite communication device. This study characterizes the question–validation–narrative (QVR) sequence as an attentional regulator and a converter of curiosity into knowledge, linking capture and encoding within a single mediating movement. By placing phatic and poetic components back at the heart of the museum attention economy, [8–10] the article re-reads the visit as a rhythmic arrangement where form is part of content.

Empirically, the study validates the theoretical frames used—particularly Jakobson's communication schema, Garfinkel-inspired ethnomethodology, and Mucchielli's semio-contextual approach— in a field that remains poorly documented scientifically when it comes to heritage and museums in Madagascar. By closely examining visit interactions, scenographic devices and mediation environments across two anonymized institutions, the research demonstrates how these models help grasp, in situ, the communication dynamics that structure audience experience.

Methodologically, it proposes a reusable observation grid that articulates interaction routines (questioning, validating, reformulating, narrating, making rules explicit), multiple contexts (identity, positional, normative/cultural, spatio-temporal, physico-sensory, relational), and audience engagement modes. It also outlines a qualitative protocol combining interviews, questionnaires and participant observations, easily transferable to other museum or cultural settings, both in Madagascar and elsewhere.

Operationally, the inquiry leads to concrete recommendations for updating communication and education supports: strengthening interactivity; media diversification (enriched visuals, audio, guided tactile devices); reasoned integration of digital (augmented visits, mobile content, deferred interactions); and highlighting local knowledge at the heart of narratives. With these levers, institutions can better meet the expectations of their audiences while modernizing their mediation practice.

Finally, the research highlights the strategic role of museums in promoting cultural identity and scientific education, especially among younger generations. Far from being only conservation sites, they appear as spaces of transmission, reflection and participation likely to become key actors in the evolution of education and citizenship—provided they adopt a dialogic, inclusive approach attentive to the plurality of reception contexts and the concrete conditions of the co-constructing of meaning.

5. Limitations and Future Work

The dataset is small (two observations, seven questionnaires, three interviews) and not demographically diverse; site anonymization prevents institutional comparison beyond broad descriptors. As such, generalizability is limited. Future research should extend to multiple museums, include larger and more varied participant groups, and pilot specific digital tools to empirically assess their effects on attention and learning. Comparative studies across regions and collaborations on digital mediation are promising directions.

6. Conclusion: Rethinking museums as dynamic communication spaces

By approaching the museum visit as a complex communication situation, this study sheds detailed light on the dynamics at work within scientific institutions in Madagascar. The diversity of interactions between mediators, scenographic devices, heritage objects and diverse audiences, the analysis moves beyond simple logic of information transfer to highlight continuous mediation processes in which meanings, emotions and identities are negotiated. Museums are therefore neither mere conservation venues nor showcases of expertise: they emerge as communication ecosystems where links between knowledge, memories and belongings are continually forged.

In this perspective, effective communication models are those that actively engage visitors: an invitation to reflect and question, guided participation, sensory stimulation (visual, audio, tactile under certain conditions), and reinforcement of cultural references relevant to the audience. Structural constraints do remain—limited resources, modest digital tooling, restrictive regulations—but they do not erase the opportunities for improvement: more immersive scenography, graduated interactive devices, lightweight, accessible digital supports, and the development of formats co-constructed with educational and local communities.

An immersive, interactive and participatory mediation strategy constitutes, therefore, a decisive lever for modernizing the cultural offerings, supporting active learning, fostering emotional appropriation of heritage and consolidating Malagasy cultural identity. By positioning museums as facilitators of knowledge and spaces of dialogue between sciences, traditions and audiences in search of meaning, the research suggests a re-orientation of missions towards relationship, experience and co-construction, drawing on the contributions of Information and Communication Sciences. In this way, Madagascar's museums can become dynamic spaces for learning, cultural transmission and civic innovation, aligned with the expectations of a young, connected public in search of identity anchor.

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Conflicts of Interest

The authors declare no conflict of interest.

Data Availability

The qualitative materials (anonymised interview excerpts, observation notes, and coding schema) are available from the corresponding author on reasonable request.

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Field data — anonymized interview (E1), end of visit; 20–35 minutes; verbal consent; anonymization of persons and utterances.

Field data — anonymized interview (E2), end of visit; 20–35 minutes; verbal consent; anonymization of persons and utterances.

Field data — questionnaire/observation (Q/O), in-situ collection; anonymized; no nominative data retained.