

# "Little Hands, Big Exhibitions" – Children’s Virtual Curation with Generative MR Toolbox

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## Abstract

Curation has evolved into a multifaceted artistic practice that extends beyond the mere display of artworks to encompass thematic development, dissemination of knowledge, and participation of the audience. Although traditionally seen as a specialist field, children’s innate curiosity and storytelling abilities suggest their potential as active participants in the curatorial process. To address the challenge of adapting complex curatorial concepts for young learners, this study introduces "Little Curator", a generative mixed reality (MR) tool specifically designed to simplify and enrich the children’s curation experience. By integrating creative workflows with interactive environments, "Little Curator" empowers children to conceptualize themes, organize content, and present immersive visual narratives. Through this exploration, children not only acquire more art knowledge, but also gain confidence in the complex exhibition planning and participatory arts. Furthermore, these "embodied paintings" serve as a source of inspiration for professional curators, bridging the gap between emerging and established practices in the art world.

## CCS Concepts

• **Applied computing** → *Media arts; Interactive learning environments; Collaborative learning*; • **Human-centered computing** → **Interaction design process and methods**.

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## Keywords

Curation, Children’s Education, Art Activities, Art Observation, Creative Tools, MR/AR/VR

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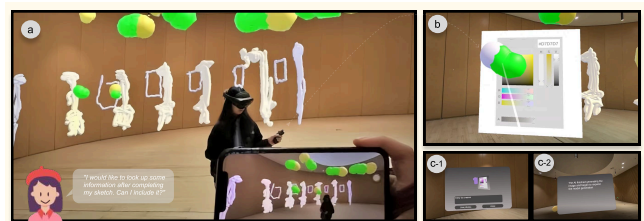


Figure 1: A young girl uses a Mixed Reality (MR) creative tool to become a "little curator," customizing virtual 3D objects in the exhibition and practice of art (a), adjusting colors and brushes (b), and generating new elements with AI assistance and tool(c-1 and c-2).



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## 1 Introduction

Curation has evolved from a traditional museum practice into a dynamic form of artistic activity [21]. Beyond displaying art, it now embodies thematic development, conceptualization, and dissemination of knowledge. Modern curators actively construct dialogues between artworks and audiences, generating new social practices [32] and cultural meanings as "an expression of knowledge transfer and cultural value [33]." In contemporary art, children have become increasingly important subject matter of curation, either as target audiences [44] or as thematic focuses [37, 40]. Curation activities centered on children aim not only to reflect artistic engagement in educational, cultural and social issues, but also to explore how knowledge can be effectively transferred to or produced by children [19].

Unlike other artistic activities, such as painting or music, curation is a multifaceted process that combines creativity, critical thinking, and organizational skills. It requires higher-order cognitive abilities, such as conceptualizing themes, organizing content, and understanding audience engagement, skills that are often seen as challenging for young learners. However, the natural curiosity, imagination, and storytelling capacity of children suggest that they are well suited for participatory and exploratory practices such as "Little Organizer" [26]. The challenge lies not in the potential of children, but in the tools and methods available to support them [25]. Teachers often struggle to simplify abstract curatorial concepts and adapt them to children's developmental needs while managing practical constraints such as limited time, resources, and physical spaces.

Inspired by these challenges, digital tools offer a promising solution [36] to bridge the gap between the educational potential of curation and its practical feasibility. In particular, digital tools have provided methods for children to better receive art education, and these tools have promoted children's quality education. Based on this, we developed an interesting teaching tool, "*Little Curator*", using the 3D generation tool in combination with MR equipment. This tool, with interactive interfaces and intuitive workflows, acts as a creative toolbox that can simplify the curatorial process, allowing children to participate and explore their creativity. This toolbox can support organizing ideas, presenting visual narratives, and knowledge production [43], all while engaging children in a playful and exploratory manner.

Through the art practice course - the curatorial course, we conducted a user study centered on children, and in the structured interviews, we gained inspiration for improving the MR tool. Specifically, this study explores how virtual technologies and curatorial practices can be combined to foster young children's artistic expression and storytelling in the user study. The contributions of this paper are the following:

- The design of a generative MR toolbox that simplifies curatorial concepts and encourages children to create and organize visual narratives.
- An exploratory study of the impact of the toolbox on children's creative expression, curatorial skills, and the ability to construct immersive visual narratives through virtual exhibitions.

## 2 Background and Related Work

### 2.1 Curation in Artistic Practices

Curation has historically been positioned as an authoritative platform for disseminating knowledge, where curators construct narratives by selecting and organizing objects or works of art [18, 30]. Traditional exhibitions, particularly within museums, prioritize linear storytelling and factual precision to educate audiences about historical, scientific, or cultural topics [31, 42]. However, contemporary artistic practices have transformed curation into a more creative and participatory process. Artists and curators now view exhibitions as collaborative spaces where meaning is co-constructed between creators and viewers [29]. This shift redefines curation as an active practice, challenging the traditional hierarchical relationship between curators and audiences. By focusing on themes such as personal narratives, identity, and emotional engagement, curation has become a medium for storytelling and innovation. In addition, recent developments in digital and interactive media have further expanded the curatorial toolkit, enabling dynamic user-generated content, participatory interfaces, and immersive experiences that blur the boundaries between the artist, the curator, and the audience.

### 2.2 Curator with Virtual Technology

The curators were primarily responsible for selecting, organizing, and interpreting art within institutional settings. However, the role of curator has expanded to include advocacy, education, and community involvement [17]. Curators now serve as mediators between artists and audiences, facilitating dialogues that challenge conventional narratives and promote expression [22]. The integration of virtual technologies into curation practices has opened new possibilities for artistic expression and exhibition design. Virtual curation allows dynamic, interactive experiences that transcend the spatial and temporal limitations of traditional exhibitions [18]. Tools such as generative MR brushes enable users to create and curate digital artworks within immersive virtual environments, offering unprecedented creative freedom and accessibility.

Digital platforms, virtual exhibitions, and mixed reality experiences are transforming the way audiences engage with curated content, fostering more personalized and interactive encounters [39]. This trend aligns with the growing emphasis on participatory curation, where users contribute to selection, annotation, or storytelling processes [34]. These technologies enhance the visual and interactive quality of exhibitions and democratize curation, allowing diverse participants, including children, to engage in meaningful artistic practices. By providing tools that simplify complex curatorial concepts, we reimagine the relationship between technology, art, and storytelling in the context of virtual identity.

### 2.3 Children's Nature in Artistic Inspiration

Child-curated exhibitions like *A Shining Secret: Kids Curate Klee* [8] disrupt traditional curatorial hierarchies by foregrounding young voices and agencies. However, does this model truly empower children, or does it merely tokenize their creativity under adult frameworks? Similarly, exhibitions like *Children's Dreams Towards the Future* [13] risk projecting adult-centric visions of 'the future' in

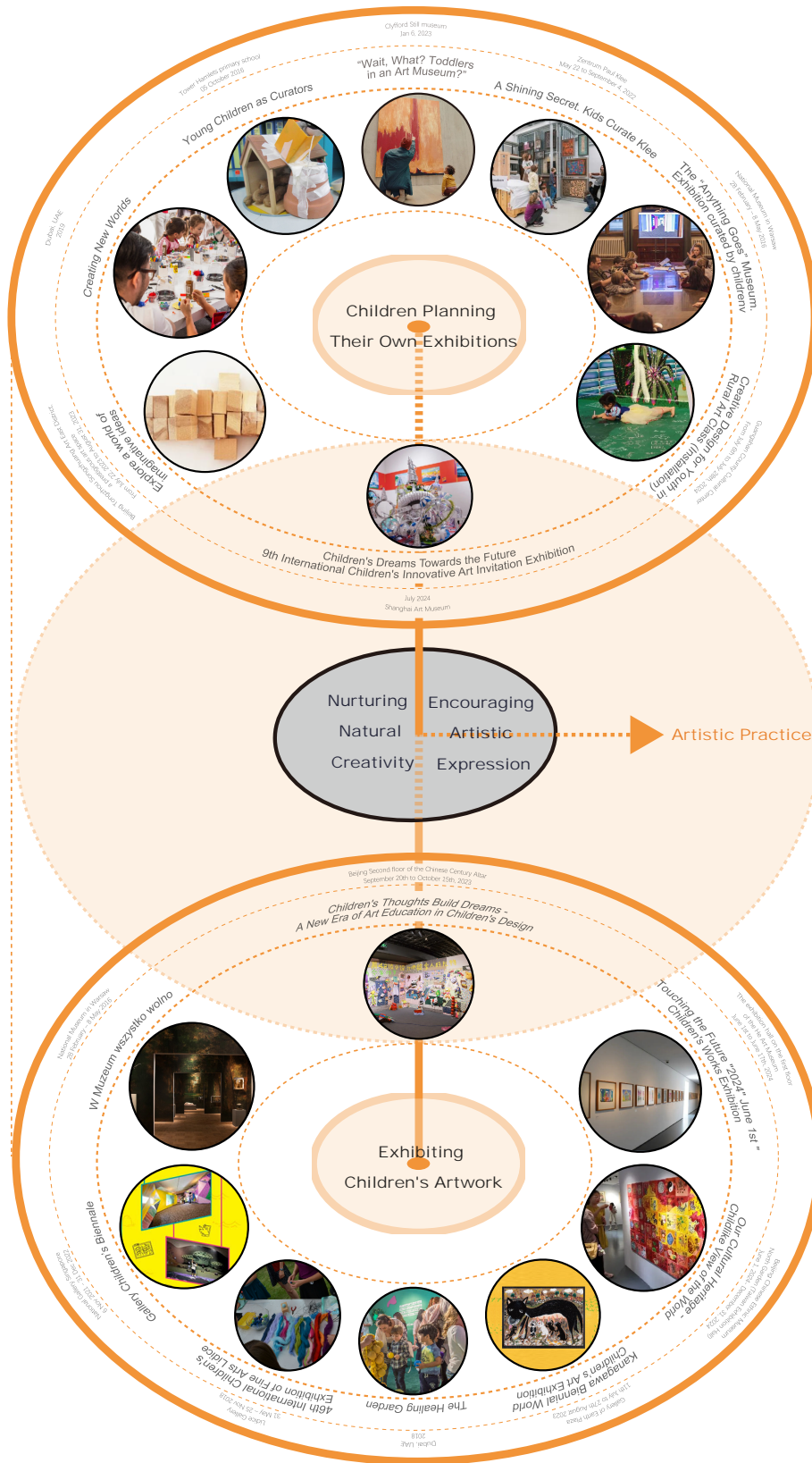


Figure 2: Curation case study: this illustration shows the relationship between children's curated self-exhibitions, exhibited works, and artistic practice, highlighting the importance of children's creativity and artistic expression from recent exhibitions and case studies [1–3, 5–7, 9–12, 14–16].

children’s work. Effective curation should amplify genuine child perspectives while resisting homogenization. Immersive installations like *The Healing Garden* [4] highlight multisensory engagement, but accessibility remains a challenge. Can global children’s art transcend cultural specificity to foster universal empathy? These works showcase "curation" as a valuable aesthetic education activity for children, fostering creativity and self-expression [28]. However, challenges like spatial limitations and engagement efficiency persist [38]. A creative toolbox is needed to support children’s abilities to conceptualize, organize, and present ideas while improving educational and artistic outcomes (see Figure 2).

### 3 Formative Study

As Rothko and López-Remiro [41] noted, children’s participation in curatorial activities introduces new forms of artistic behavior, focusing on spontaneity and playfulness over conventional frameworks. This openness has inspired artists such as Paul Klee and Joan Miró, who drew heavily from the purity of children’s drawings [20]. When children engage in curatorial activities, they reinterpret knowledge through imaginative storytelling, offering new perspectives that challenge traditional norms [24].

To understand the potential for integrating curatorial practices into art education, we conducted semi-structured interviews with 11 participants: four professional museum curators ( $M = 2.5$  years,  $SD = 0.58$ ; 2 out of 4 were female) and seven primary and secondary school art teachers ( $M = 7.43$  years,  $SD = 3.91$ ; 5 out of 7 were female). Conduct a semi-structured interview lasting approximately 30 minutes around the following questions:

- (1) **Current Art Teaching Methods in Schools:** Focus on modern techniques, tools, and how they compare to past approaches.
- (2) **Museum-Based Public Art Education Initiatives:** Explore programs, outreach efforts, and community engagement strategies.
- (3) **Children’s Participation in Artistic Activities:** Examine how children engage with art both in and outside formal education settings.

In the semi-structured interviews, art professionals of different roles highlighted the new discoveries regarding children’s participation in art. The curators (M1 and M3) emphasized the importance of developing accessible frameworks that allow children to participate meaningfully in exhibition planning. Several references to successful initiatives in which children participated in selecting and interpreting art. In contrast, art teachers frequently cited practical challenges, including limited classroom time, large cohorts of participants, and the difficulty of translating abstract curatorial concepts into age-appropriate activities. In addition, both groups converged on the view that child-led exhibitions—such as *The Secret of Clouds: "Rural Art Course" Project*—demonstrate children’s capacity to balance imaginative expression with structured narrative development when supported by appropriate scaffolding (this exhibition guided and organized by T6).

However, barriers remain, including spatial limitations, engagement efficiency, and the need for age-appropriate tools in art education. Moreover, there is an emphasis on using new-tool-based expressive art, especially in the context of AI, while addressing art

education challenges. To address these challenges, *Little Curator*, a creative toolbox, has been proposed. This toolbox incorporates interactive and gamified elements to maintain interest, flexible modules adaptable to diverse educational settings, and collaborative tools, such as shared project spaces and virtual previews. These features aim to improve children’s autonomy while supporting their developmental and educational needs [28].

## 4 Creative Methods: "Little Curator"

### 4.1 MR Brush in Artistic Sketching

In participatory artistic sketching, the brush system bridges creative expression and spatial interaction. Using Surrounding Spatial Scale Perception (SSP), the system enhances users’ spatial awareness, enabling them to intuitively interpret scale, proximity, and relational dimensions in their environment.

To implement these principles of spatial interaction, the brush system employs a dual mapping approach that dynamically connects physical brush movements to the texture atlas. This approach ensures that users’ spatial intentions are accurately reflected in the digital sketching process, creating a seamless and intuitive artistic experience. The brush system uses a dual mapping approach to project the brush vertex  $Q$  from its physical coordinates to the texture atlas using two sequential transformations. First, a projection function  $\pi : Q \rightarrow M$  maps the vertex  $Q$  to a surface point  $M$  on the screen. Second, a texture mapping function  $\phi : M \rightarrow T$  converts the surface point coordinates into texture atlas coordinates. The final transformation is represented as:

$$\psi(Q) = \phi(\pi(Q))$$

Here,  $\psi(Q)$  denotes the ultimate texture coordinates for vertex  $Q$ . This process facilitates dynamic texture updates, allowing precise brush strokes to be rendered onto the surface. When a brush event is triggered, the application projects the brush vertex  $Q$  to the screen point  $M$ , retrieves the texture coordinates from  $\phi(M)$ , and updates texture atlas at the corresponding location  $\psi(Q)$ . This method ensures smooth and controlled texture updates, which is essential for high-quality sketching (see Figure 3).

To further enhance the realism of brush movements, the system calculates the displacement of brush using velocity-based metrics. The updated brush position  $P'$  is determined by the initial position  $P$ , the velocity vector  $\mathbf{v}$ , and the elapsed time  $t$ :

$$P' = P + \mathbf{v} \cdot t$$

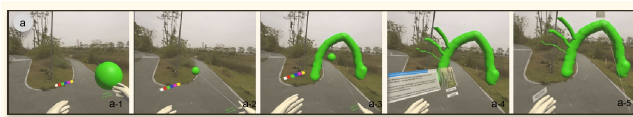
Additionally, the system computes the magnitude of the brush’s movement as:

$$d = \|\mathbf{v}\| \cdot t$$

where  $d$  represents the total distance traveled,  $\|\mathbf{v}\|$  is the magnitude of the velocity vector, and  $t$  is the time duration. These calculations align with the SSP principles by enabling the brush to mimic precise and controlled movements that reflect the user’s spatial intent. This integration ensures a seamless translation of spatial awareness into artistic creativity, allowing users to produce smooth, continuous brush effects in their artistic sketches (see Figure 3).

**Table 1: The professionals involved in theFormative Study**

ID	Group	Gender	Age	Experience in Education	Key Notes
M1	Museum Curator	Male	35	3	Experienced in modern art exhibitions
M2	Academic Curator	Female	32	3	Specialized in children-focused curation
M3	Museum Curator	Female	29	2	Digital exhibition
M4	Museum Curator	Male	38	2	Expertise in historical artifacts
T1	Art Teacher	Female	40	5	Experienced in integrating curation in education
T2	Art Teacher	Female	35	5	Focus on storytelling in art classes
T3	Art Teacher	Male	33	10	Specialized in collaborative art projects
T4	Kindergarten Art Teacher	Female	37	4	Gamified learning advocate
T5	Art Teacher	Female	42	14	Expert in traditional art techniques
T6	Art Teacher	Male	29	4	Innovative teaching methods for young learners
T7	Art Teacher	Female	34	10	Focus on arts tools



**Figure 3: MR distance: this series (from a-1 to a-5) of images showcases an experiment in spatial computing, emphasizing the use of MR brushes to create and interact with virtual objects at a distance.**

### 4.2 Toolbox for Art-model Conversion

Toolbox integrates advanced art model conversion functionality within Unity, designed to transform creative input into interactive 3D models. During the development phase, Unity served as the main platform for building and testing three key features: sketch-to-model, image-to-model, and text-to-model conversion<sup>1</sup>. The sketch-to-model system combines sketch recognition algorithms with voice-assisted input to generate 3D objects, translating hand-drawn sketches and descriptions into digital assets. Additionally, the text-to-model pipeline utilizes natural language processing and generative AI to create 3D models directly from descriptive text. In the demo phase, Unity provided an interactive environment for real-time feedback and customization, allowing users to refine model attributes such as scale, texture, and spatial placement. The seamless integration of the toolbox into Unity enables cross-functional workflows<sup>1</sup>, combining multiple inputs into cohesive curatorial designs. This implementation not only ensures accessibility and flexibility but also demonstrates the potential of MR technology in virtual curation, bridging artistic creativity and digital innovation. The demo showcases a user-friendly interface, where participants can intuitively create and manipulate models, reflecting the system’s effectiveness in fostering imaginative and interactive curatorial practices (see the Figure 4).

<sup>1</sup>Unity: <https://docs.unity3d.com/Packages/com.unity.xr.management@4.0/manual/index.html>

<sup>2</sup>Alibaba Cloud: <https://www.aliyun.com/>

<sup>3</sup>Meshy API: <https://docs.meshy.ai/en/api/quick-start>

<sup>4</sup>Pico 4 PRO: <https://www.picoxr.com/cn/products/pico4-pro>

### 4.3 Education of Curation Art

Beyond spatial tools, the toolbox integrates with other creative platforms, allowing users to import and edit models, textures, and multimedia content. This interoperability enhances the flexibility of curatorial workflows, enabling users to experiment with various artistic and thematic approaches. By combining educational methodologies with practical tools, the system empowers young beginners to explore the art of curation, transforming their understanding of exhibitions from passive viewing to active creation. This holistic approach prepares participants to engage with artistic environments in both educational and professional contexts.

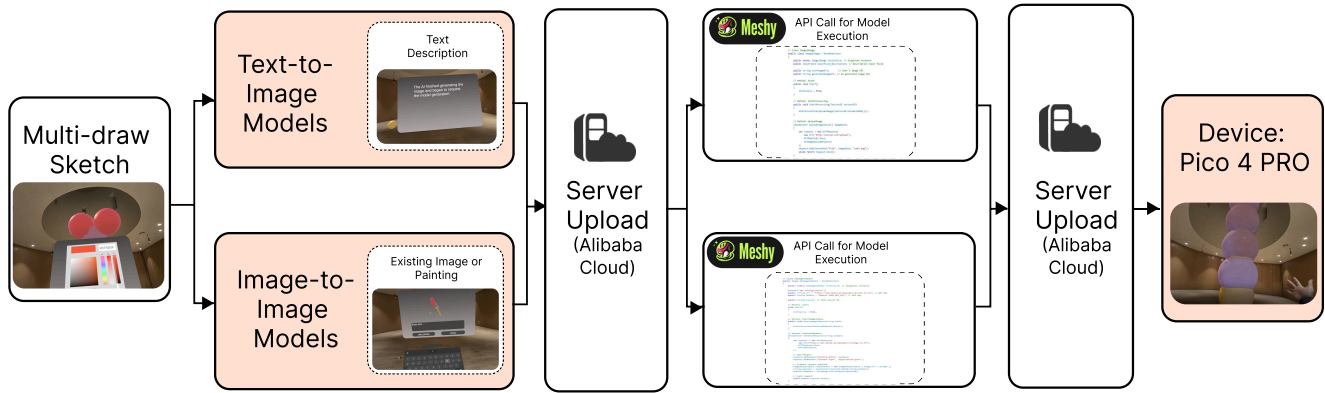
## 5 Curation-centered Activities

To evaluate the effectiveness of the "*Little Curator*" toolbox, we conducted a user study as part of an art practice course (informal teaching courses). The study revolved around a shared theme, "Historical Land," which introduced participants to the history and key events of their local town. The participants explored the theme through an approach: an MR-based curation course using the toolbox. Twelve participants, seven boys, and five girls (average age 11 years) were divided into two groups. After the "curatorial" event was over, we conducted semi-structured interviews with the participants of each group (see Table 3).

In the traditional curation course, participants used physical materials, such as drawings, photographs, and labels, to create their exhibitions. In contrast, the MR-based course used the toolbox, enabling participants to design virtual exhibitions using features such as sketch-to-model conversion, spatial annotation, and text-based object generation. This not only required them to perceive the environment on site, but also required them to evaluate the rationality of their own plans to adopt the approach of embodied painting [35]. Finally, they completed the sketch design of an exhibition through cooperation between their group members (see Figure 5).

### 5.1 Behavior Observation

To gather qualitative insights, semi-structured interviews were conducted with participants after completing their exhibitions. These interviews encouraged participants to reflect on their curatorial decisions, thematic interpretations, and satisfaction with their work. The transcripts were thematically coded to uncover key patterns,



**Figure 4: System workflow of the generative sketch-to-3D pipeline.** Users begin by creating a multi-user sketch, which is processed either via text-to-image or image-to-image generation models. The resulting descriptions or images are uploaded to a remote server (Alibaba Cloud<sup>2</sup>) and forwarded to the Meshy API<sup>3</sup> for model execution. The generated 3D content is then returned to the server and rendered on a Pico 4 PRO<sup>4</sup> headset. Participants can intuitively create and manipulate models within a user-friendly interface, showcasing the system’s ability to foster imaginative and interactive curatorial practices to enhance the paintings by using this tool.



**Figure 5: Top view comparison: 12 children were divided into two groups to carry out curation activities. They wore Pico 4 PRO<sup>4</sup> as the MR headset and practiced art through the knowledge they had learned from curation – ranging from individual exhibit details to overall space layout.**

including creativity, narrative construction, and engagement, providing a deeper understanding of their curatorial processes.

We conducted group interviews with two groups of participants for about 20 minutes each. By integrating quantitative methods, the analysis revealed how MR-based tools foster creativity, improve curatorial understanding, and transform the exhibition process. The findings emphasize the potential of combining traditional and digital approaches to redefine curatorial practices, providing a foundation for future research on innovative art education and exhibition design (see Table 2).

After the course was over, we showed the participants’ works to the art teachers and then conducted interviews based on the 3D sketches and forms of their works, hoping to extract their opinions on the creative MR tools from this.

## 5.2 Key Findings from children

Thematic analysis of semi-structured interviews with participants revealed two core themes that characterized their experiences with the MR Curation Courses: (1) *quick sketching*, (2) *realistic object generation and limits*. These recurring keywords reflect both the creative and the affective dimensions of their engagement and helped structure the interpretation of their reflections. The following sections elaborate on the two dominant themes identified through this qualitative analysis (Questions in Table 2).

**Theme 1: Quick Sketching.** The children expressed enthusiasm about the speed and flexibility of the MR drawing tools. The ability to use virtual rulers and gestures to measure or estimate distance was frequently mentioned, allowing them to quickly plan spatial layouts. Participants used decorations to simulate architectural structures or symbolic meanings, and someone remarked (C2), “*I felt like I could reach really high places*,” reflecting a perceived sense of scale and empowerment within the virtual environment. These tools were not only intuitive but also encouraged spatial reasoning

**Table 2: Questions in Semi-Structured Interviews**

Theme	Objective	Questions
<b>Introduction</b>	Build rapport and collect basic context	- Have you had any prior experience with curatorial or exhibition work?
<b>Process &amp; Decisions</b>	Explore how participants conceptualized, organized, and executed their exhibition	- How did you determine the theme or concept of your exhibition?
<b>Creativity Construction</b>	Understand the expression of creativity and the development of narrative elements	- What curatorial decisions did you make regarding content selection and presentation? - In what ways do you think creativity was reflected in your work? - Did you attempt to construct a narrative? If so, how? - What role did the tool play in enabling your creative ideas?
<b>Self-Reflection</b>	Capture personal reflections, learning outcomes, and perceived self-efficacy	- Are you satisfied with the outcome of your exhibition? Why or why not? - What new skills or knowledge did you gain?
<b>Feedback</b>	Gather suggestions for system improvement	- Do you feel confident curating a similar exhibition independently? - If you curate again, what would you like to improve or change?

**Table 3: Participants Information and Their Exhibitions Created with the MR Tool**

ID	Gender	Age	Exhibition Theme
C1	Boy	10	Volcano
C2	Girl	12	What Did They Imagine?
C3	Boy	11	Teeth, and Mystery!
C4	Girl	13	The Secret Forest of Dinosaurs
C5	Boy	10	Run
C6	Girl	11	A Rainbow Skins
C7	Boy	12	The Flying Kings of the Skies and The Coolest Dino Armor Wars
C8	Girl	13	Wars
C9	Boy	10	Earthquake! Dinosaurs vs. Nature
C10	Girl	11	..... (Vague) with the Ankylosaurus
C11	Boy	12	Ancient Times
C12	Girl	13	The Last Roar

and experimentation with ambitious compositions. In addition, participants expressed positive opinions about the flexibility of the paintbrush as remarked (C9, C11), “It was exciting to learn this way,” reflecting the high level of engagement encouraged by the MR Curation Courses. Another child (C12) emphasized the benefits for retention, stating, “I can still remember what I learned, because it felt like I was there.”

**Theme 2: Realistic Objects.** Children were impressed with the ability of the generative model to produce various outputs from their own descriptions, often noting the immediacy and richness of results (C12)—“It made a lot of things from what I said!” However, a recurring concern was the perceived artificiality of the generated objects. Although visually appealing, some participants (C1, C4) commented that the objects still felt “a bit like a game” or conveyed a sense of “fakeness.” As one child asked (C7), “Can it scan something I saw before into it?”, indicating a desire for more faithful and personalized representations based on their real-world experiences. This tension highlights the importance of balancing generativity with perceived authenticity in future MR learning tools.

Interestingly, while *Challenge Handling* showed the smallest effect size, participants expressed that the MR courses provided a sense of achievement after completing difficult tasks, one child sharing (C1), “It was hard, but I liked figuring it out with the tools they gave us.” The combination of quantitative results and qualitative insights highlights the ability of the MR Curation Courses to foster deeper engagement and lasting knowledge retention, making them a superior approach to improve learning outcomes.

### 5.3 Exhibition Comment from Arts Teacher

After the course, we gave the children’s curated works to the original four curators for comments. The curators acknowledged the impressive creativity exhibited in the MR-based exhibitions. They highlighted how participants used digital tools to innovate beyond traditional formats, incorporating interactive features and experimental layouts, as teacher (T2) commented, “I believe that the use of dynamic timelines and spatial annotations has enhanced the narrative effect of the story, as can be seen from the illustrations.” Some teachers (T1, T3) noted a recurring issue and commented, “While the visual components were engaging, I was struggling to discern a clear and cohesive story in certain exhibitions.” This highlights the challenge of balancing aesthetic appeal with thematic rigor. In addition to the above issues, teachers (T2) identified instances where thematic execution was lacking. “I feel like these kids don’t have enough time. Formal curation activities do not have such a small amount of time... Please give them a thorough thought”. These observations underscore the need for more structured guidance in helping children unify their ideas into cohesive narratives.

The effectiveness of curation and presentation varied significantly between the MR-based and traditional exhibitions. The curators lauded the MR-based projects for their interactivity and dynamic engagement with the audiences. As one teacher (T4) put it, “(I think)... The ability to manipulate virtual objects adds a layer of immersion and brings kids into the storytelling process.” On the other hand, traditional exhibitions were valued for their tactile engagement and sensory richness: “There is an authenticity in working with physical artifacts that digital methods sometimes struggle to capture.” These reflections highlight the complementary strengths of both approaches and suggest that a hybrid method could effectively combine the interactivity of MR tools with sensory impact.

## 6 Discussion and Conclusion

The term “curator” initially denoted only those in positions of authority within art institutions. Serving as the custodians of cultural capital, they were charged with the crucial task of selecting, interpreting, and analyzing artworks in strict accordance with well-defined professional standards. However, the advent of the concept of “child curators” is akin to a revolutionary shift that has the power to reshape the traditional art - curation landscape, completely overturning this long - established paradigm.

**Curriculum-based Education.** The concept of child curators substitutes hierarchical knowledge transmission with dynamic processes that are grounded in creative experimentation, gamified

participation, and the co - construction of meaning. Children undergo a transformation, shifting from passive observers to designers of cultural narratives. Their life experiences and emotional responses become the primary guiding forces behind curatorial decision making. This evolution of child - led curation reflects a broad transformation in contemporary virtual curatorial practices [13]. In the virtual realm, curation is being redefined as an educational tool and a participatory platform. This breaks down traditional power hierarchies, amplifies diverse voices, and makes curation more inclusive – This might be because its comprehensive effect serves as an alternative approach to art education, replacing the traditional sketching method.

**Virtual Tools.** By integrating intuitive interfaces for spatial design, multimodal storytelling, and iterative exhibition building, these platforms transform curation into accessible literacy rather than an elite specialization [23]. Children engage not merely as users but as co-creators, blending physical artifacts with digital layers to forge hybrid narratives that reflect their unique worldviews. As one curator (M1) noted, "The virtual space becomes a sandbox for epistemic agency: Children instinctively remix cultural fragments into exhibitions that resonate with their identities." This aligns with the critical role of curatorship in digital education: no longer an authoritative monologue, but the artistic practice that centers marginalized perspectives and fosters cultural empathy [27].

**Summary, Limitations, Future improvements** The exploratory results of this study highlight the significant potential of combining traditional and digital methodologies to redefine curatorial practices. Through semi-structured interviews, we gain a more intuitive and authentic understanding of the experimental outcomes, enabling us to engage with them on a deeper and more meaningful level. It highlights that "**Little Curator**" as an embodied painting-based MR tool plays a positive role in art education and even in the basic education of curating.

However, several limitations should be acknowledged. Due to reliance on cloud-based processing, real-time generation of 3D content often involved noticeable latency, which may have disrupted the immersive experience and reduced spontaneity in educational interaction. Furthermore, the present study did not incorporate quantitative evaluation methods, which limits the ability to systematically measure user experience or learning outcomes. Future work should consider integrating mixed-method approaches, combining objective performance metrics with in-depth qualitative feedback, to gain a more comprehensive understanding of how MR tools influence curatorial learning and user satisfaction.

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