Digital Preservation and Access Strategy for Hangeul Resources at the National Hangeul Museum Archives

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Abstract

This paper presents the National Hangeul Museum's (NHM) digital preservation and contextualization initiative conducted from 2015 to 2024. The project focused on high-resolution digitization of Hangeul-related cultural materials—such as manuscripts, rare books, correspondence, and early publications—and enriched them with expert interpretation and transcription. A structured digital archive was developed to provide thematic access and advanced search capabilities. Case studies, including handwritten letters, early Korean Braille documents, and the full digitization of the 1920s children's magazine *Eorini*, demonstrate how historical narratives were reconstructed and made accessible to both researchers and the general public. The digitized content has been actively used in exhibitions and educational programs, enhancing public engagement while minimizing handling of fragile originals. Future directions include archive expansion, integration of AI technologies, and development of collaborative and interactive features. This work offers a model of museum-led digital heritage preservation aligned with international best practices.

1. Introduction

Preserving the documentary heritage of Hangeul, the Korean writing system, is crucial for both scholarship and public cultural access. The National Hangeul Museum (NHM) in Seoul has been at the forefront of digitizing Hangeul-related artifacts to prevent physical deterioration and to make their contents widely accessible. In 2016, the NHM launched an online repository titled the "NHM Archive". This launch marked the start of a systematic digital preservation program aimed at "online service as a substitute for physical access to originals, minimizing wear and maximizing preservation". By converting fragile manuscripts, rare books, and archival documents into high-resolution digital images, the NHM provides a platform where researchers and the general public can explore these materials without the constraints of location or handling the delicate originals.

1.1 Contextual Reconstruction and Interpretation

A distinguishing feature of NHM's initiative is its emphasis on contextual reconstruction — that is, going beyond mere imaging to include expert interpretation and transcription of historical texts. Each digitized item is accompanied by scholarly annotations that explain its content, significance, and historical context, as well as transcriptions of archaic scripts into modern Korean for readability. This approach transforms the digital archive into an educational resource, not just a collection of images. By 2025, the NHM's archive included nearly 4,000 artifacts and over 200,000 pages of digitized Hangeul manuscripts, all enriched with expert-curated metadata and narrative descriptions.

1.2 Project Overview and Structure of This Paper

This paper presents the National Hangeul Museum's digital preservation initiative through systematic examination of its key components and outcomes from 2015 to 2024.

We first examine the **NHM Digital Archive Architecture**, focusing on the Original Texts collection that hosts nearly 4,000 artifacts comprising over 200,000 digitized pages. Next, we detail the **Digitization Methodology** covering material selection,

high-resolution imaging standards, and expert interpretation integration. The core contribution lies in **Interpretation and Contextualization** case studies—handwritten letters and Korean Braille documents—illustrating how expert transcription transforms digital images into accessible narratives. We then analyze **practical applications** through the 2023 *Eorini* magazine exhibition, demonstrating how digitization enables new curatorial practices. Finally, we present **outcomes and future directions**, including technological innovations and collaborative opportunities for digital heritage preservation.

2. NHM Digital Archive Architecture

2.1 Original Texts

To maximize public and research access, NHM developed a dedicated online platform for its digitized collections. The NHM archives preserve valuable records related to Hangeul and its culture, including a diverse range of materials such as documents, books, audiovisual content, artifacts, and digitized information. The archives are divided into two main categories: collected records, which include materials obtained both domestically and internationally, and produced records, which are primarily digital formats of the museum's collections. As a museum specializing in writing systems, NHM has accumulated a significant proportion of rare books and manuscripts.

The produced records of the NHM are anchored in two pillars: Original Texts and Oral Histories. This paper primarily focuses on Original Texts. This is a core feature of the archive, offering high-resolution images of original Hangeul manuscripts and publications. As of early 2025, it hosts 3,961 items comprising over 200,000 page images, each accompanied by an expert's interpretation text and, where applicable, a transcription of the original script into a modern Korean. This means that a user viewing an old document can not only see the scanned pages, but also read a summary of its content and a line-by-line reading (for handwritten or classical texts) in contemporary language. This dual presentation greatly enhances understanding for non-specialist audiences.

3. Digitization Methodology

The digitization of Hangeul materials at NHM is carried out with careful planning and adherence to preservation standards. The database construction is carried out in compliance with the DB Construction Methodology 4.0 of the National Information Society Agency (NIA) of Korea. Each year's project typically focuses on specific categories of materials and follows a workflow.

3.1 Selection and Preparation

At the start of a project, curators select the target items for digitization, often based on material type or historical significance. For instance, early project years(2015-2018) focused on classical novels and historical manuscripts, 2019 prioritized rare books, 2020-2022 covered a large volume of old documents and even Braille texts, and 2023-2024 targeted modern magazines and books. Once selected, each item is assessed for condition. Any necessary conservation (surface cleaning, flattening of folded pages, minor repairs) is performed prior to imaging to ensure the best possible capture and to avoid damage during handling.

Year	Focused Materials	Output Highlights
2015-2018	Classical novels,	Tens of thousands of
	manuscripts	pages digitized
2019	Rare books	Expanded rare book
		collection coverage
2020-2022	Archival documents,	Inclusion of Braille,
	Braille	5,030 pages
2023-2024	Modern books and	324 items
	magazines, including Eorini	19,600 pages

Table 1. Summary of yearly digitization focus and outcomes

3.2 Imaging (High-Resolution Photography)

Items are carefully transported to the studio and handled by trained personnel. The standard for resolution has been set at 600 DPI or higher in true color, using high-end digital camera backs. Pages are shot in sequence, including covers, and output as raw image files. For certain bound volumes, non-destructive scanning techniques or cradle systems are used to avoid spine damage. The output of the imaging phase is a complete set of page images for each item.

Following capture, images undergo processing such as cropping, de-skewing, and color correction to ensure they accurately reflect the original source and are comfortable to view on screen. Noise removal and adjustment of contrast may be applied to enhance legibility, especially for faint texts or aged paper. The final approved images are then generated in multiple formats for different purposes: archival masters(Tiff or Raw), access images (JPEG), and thumbnails, as well as PDF compilations for convenient reading. This multi-format approach ensures both long-term preservation of the raw data and immediate usability for the public interface.

3.3 Interpretation and Transcription Integration

Unlike many digitization projects that end at imaging, NHM's workflow integrates content interpretation. For materials like letters, archival documents, or old literary works, subject-matter experts are commissioned to produce interpretation texts and, if needed, transcription of the original script. These texts are reviewed and edited by NHM staff for accuracy and consistency with the archive's style. In some cases, translations into modern Korean or annotations explaining archaic terms are also prepared.

The final approved interpretive content is then linked to the corresponding digital images.

Throughout the process, preservation of originals remains a priority. The use of photography over flatbed scanning, for instance, avoids excessive handling. By digitizing, NHM not only creates a surrogate for users, but also reduces the need to expose the original artifact to light and touch, thus prolonging its life. All digital files are backed up on multiple storage media and integrated into the museum's digital repository for safekeeping.

3.4 Metadata and Online Publication

Parallel to imaging, domain experts prepare descriptive metadata for each item. This includes bibliographic details (title, author, date, provenance), physical descriptions, and content summaries. A table of contents for each manuscript or book is often compiled by specialists, which is crucial for lengthy documents like novels or ledgers, enabling users to jump to sections. The metadata schema is integrated with NHM's archive management system and the online database so that each digital item on the website is richly described and searchable by various fields.

Metadata is categorized into five domains: the Identity domain (including registration number, title, and project year), the Background domain (including date of production, place of origin, and source), the Contents and Structure domain (including imaging information, subject, period, and quantity), the Conditions of Access and Use domain (including access conditions and physical characteristics), and the Related Materials domain (indicating the location of the original). Additionally, metadata fields exclusive to Original Texts include whether an interpretation exists, detailed period, interpretation text, transcription text, and modern Korean translation text.

Once images and texts are ready, they are batch-uploaded to the NHM's Online Archives. Each item's record is updated with the digital images and attached interpretation/transcription texts. After internal verification, the new content is published on the public website. NHM typically aimed to release the digitized content by the end of the project year or early the next year (e.g., content from 2021's interpretation project went live in the second half of 2022). Press releases or site announcements accompany these releases to inform researchers and the public of the newly available materials. The online website is developed in accordance with Korea's "Framework Act on Intelligent Informatization," ensuring that information provided on the site is accessible and usable by people with disabilities on equal terms with non-disabled users. Annual ICT accessibility inspections are conducted to confirm compliance with these standards.

Over the 2015–2024 period, NHM's digitization drive produced a substantial body of digital content. Early years saw tens of thousands of pages of classical novels digitized, while later years ramped up to include hundreds of shorter archival documents and specialized materials like Braille. Notably, by 2023 the project had digitized 2,913 items (14,266 physical pieces) totaling 257,010 pages of Hangeul materials. In parallel, a total of 2,225 items have been provided with interpretive texts and 1,417 items with full transcriptions, reflecting the large scholarly effort accompanying the imaging.

4. Interpretation and Contextualization Case Studies

A pivotal aspect of NHM's project is the interpretation of digitized materials – essentially the scholarly annotation and contextualization that accompanies the digital images. This

process transforms raw scans into meaningful resources by answering the questions: What is this document? Why is it important? What does it tell us? In many cases, it also involves transcription, i.e. reading the original text (often written in archaic scripts or obsolete orthography) and rendering it in modern Korean script for clarity. Below, we present case studies illustrating how this played out for two types of materials: historical handwritten letters and early Korean Braille documents.

4.1 Case Study 1: Handwritten Letters from the Past

- 4.1.1 Background: Korean epistolary documents, especially those written in Hangeul, are invaluable for linguists and historians as they offer insight into vernacular language, personal relations, and daily life of their period. However, they often pose challenges: the handwriting may be in a cursive, old style of Hangeul that is not easily decipherable, and the content assumes historical context that modern readers might not know. In 2021, NHM undertook a major effort to interpret a large corpus of unpublished old Hangeul letters as part of its archive enrichment. Over 500 letters from various family collections (totaling 571 individual pages/items) were assigned to external experts for transcription and interpretation. These included correspondences passed down in prominent households, documents like estate inventories and lists, and other personal records in Hangeul script.
- 4.1.2 Interpretation Process: Specialists in Korean paleography and history were engaged – experts in fields ranging from Joseon dynasty documents to early 20th-century Korean language were contracted to work on these letters. Each expert received high-resolution images of the letters (captured in advance) and produced three main textual outputs: (1) a transcription of the letter's content into typed Hangeul (2) a translation of the letter's content into modern Korean in modern orthography, and (3) an interpretation write-up that explains the letter. The interpretation typically includes the date and place (if known), identification of the writer and recipient, a summary of the letter's content, and notes on historical or linguistic significance. For example, a letter from a mother to her son studying abroad in the 1880s might be accompanied by an explanation of the historical context (such as the education of Koreans in that era) and a discussion of the language style used by the writer.
- **4.1.3 Challenges:** Many letters required careful reading due to archaic spelling or damage. Some were written in mixed Hangeul and Chinese characters. Before interpreting or translating a document into modern Korean, experts must first decipher the characters and transcribe the content according to the orthography of the period—this transcription process requires substantial time and effort.
- **4.1.4 Outcome:** The interpreted letters now form a richly annotated collection in the digital archive. Users can not only view the images of these century-old letters but also read the plain-text Korean transcription and a concise expert essay about each letter's significance.
- 4.1.5 Making the Past Accessible: These interpretations reveal personal stories: some letters describe family events, others petition local officials, some are educational, like letters teaching moral lessons to younger relatives. Through the archive interface, a reader can see, say, a late 19th-century letter written in beautiful cursive Hangeul, read its content in modern form, and understand who wrote it and why. This contextual reconstruction breathes life into the digitized images, connecting users with the human voices of the past.

Moreover, scholars analyzing language change have data on orthography and vocabulary from these transcriptions, while cultural historians gain primary source excerpts ready for citation. The project thus turned what were once obscure pieces of paper in museum storage into accessible narratives of Korean history and culture.



Figure 1. A partial image of a handwritten document

Original Transcription of Figure 1.

Excerpt from Expert Interpretation about Figure 1.

This is a list of items sent as part of a dowry for a wedding. Since most of the items are skirts and jackets, and others include hairpins, rings, a dressing table mirror, and face powder, it is presumed that the recipient was a woman. Among the recorded items are "seryu skirt, one piece" and "merins skirt, one piece." The term "merins" derives from the Spanish word merinos and refers to "muslin," a fine, soft woolen fabric woven in plain weave using worsted yarn. An advertisement for the "clearance sale of merins" appeared in the Dong-A newspaper on February 7, 1926, and it was found that this fabric was produced by the Toyo Woolen Company in Japan and sold in Korea. The term 'seryu' refers to 'seru', which is the Japanese pronunciation of 'serge', a woolen fabric made from worsted yarn. 'Seru' is recorded in a 1916 dowry list from the Mido Folk Museum. Additionally, a 1929 article in the Dong-A Ilbo noted that, due to a trend of extravagance among young schoolgirls, it became fashionable to make skirts from suiting fabrics like serge. Therefore, this dowry list is also presumed to date from the first half of the 20th century.

4.2 Case Study 2: Early Korean Braille Materials

4.2.1 **Background:** An often overlooked part of Hangeul heritage is the adaptation of Hangeul for the visually impaired – i.e., Korean Braille. The first Korean Braille system was developed in the late 19th and early 20th centuries, enabling blind Koreans to read and write using raised dot patterns representing Hangeul letters. NHM holds several historically significant Braille items, such as early Braille textbooks and letters in Braille. However, interpreting these requires specialized knowledge. In 2021, the NHM project explicitly included Braille documents in its scope, expanding the range of materials to be transcribed and interpreted. This was one of the first concerted efforts to digitize and interpret Korean Braille archival materials.

- 4.2.2 Interpretation Process: NHM collaborated with experts in Braille and visually impaired education history. The process began by photographing the Braille documents with raking light to capture the dot patterns clearly. Braille experts then examined the images to decode the dot sequences. For each Braille item, the expert provided a transcription into Hangeul and an interpretation describing the document. For example, one item might be a Braille letter written in the 1920s by a teacher at Korea's first school for the blind. The expert would identify the Braille system used, transcribe the letter's content into Korean script, and then write a background note about the author, the recipient, and the significance of the letter (perhaps it could reveal how Braille was taught or personal experiences of blind students of that era).
- **4.2.3 Challenges:** Decoding old Braille is a painstaking task. Unlike visual scripts, Braille has no "ink" variation only presence or absence of dots. Faint or damaged dots can lead to ambiguity. The experts cross-referenced known Braille encoding charts from the period to ensure accuracy. Additionally, if a Braille document contained technical content (e.g., an arithmetic textbook for blind students might include special symbols), those had to be correctly interpreted. Another challenge was that Braille documents often did not include easily identifiable metadata (like dates or titles) on the document itself, so contextual research was needed to date and describe them. Despite these difficulties, the project successfully interpreted numerous Braille items, integrating them into the archive alongside sighted-world documents.
- 4.2.4 **Outcome:** For the first time, these Braille artifacts are presented to the public in a comprehensible form. A user browsing the archive can find, for instance, a 1920s Braille letter[Figure 2.1] and see the original raised-dot image, read the decoded Korean text of the letter[Figure 2.3], and learn who wrote it and why. The interpretations also shed light on the broader context of early blind education and the adaptation of Hangeul into tactile form - an important chapter in Hangeul's history as a writing system. By including Braille, NHM's archive underscores the inclusivity of cultural heritage preservation: not only the mainstream printed or handwritten texts are important, but also the alternative formats that enabled universal literacy in Korean. This case study exemplifies contextual reconstruction in a literal sense: converting a tactile code back into readable text and narrative, thus reconstructing the communication that was originally intended by and for a marginalized group (the visually impaired) in society.

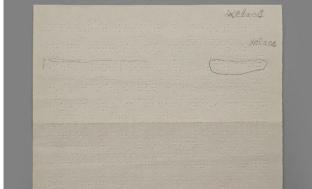


Figure 2.1. A partial image of a 1920s Braille letter

Figure 2.2. Transcription of the Braille text shown in Figure 2.1

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. . . . . . . . . . . . . . . .
 ㅂㅏㄱㅅ건ㅅㅐㅇㄴㅣㅁ ㄱㅜㅣ하
   선 생 님
         귀
소 생
         의 무
            례
             함
人 | 1 ⑧ こ 1 L 1 1 2 ⑨ C 11 C 1 ア 人 1 日 山 1 日 T | ロ 1 人 か
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            한 장 에서 신
         CC.
ㅗㄹㄴㅣㅓㅆㅡㅁ글 사ㄱ꽈ㄷㅡㄹㅣㅂㄴㅣ다 ㄱㅡㄷㅎㅏ
  올 니 었 음 을 사과
           드 립
               니 다그 동
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Figure 2.3. Korean transcription alongside the original Braille text

Excerpt from Expert Interpretation about Figure 2.

A letter sent by Yang Jeong-shin, a visually impaired woman studying abroad in the United States, to Mr. Park Du-seong. In the letter, she apologizes for not being able to visit him before leaving Korea and for the delay in writing after her arrival. She also shares updates about her life as an international student. After visiting a Braille printing facility operated by the Red Cross, she explains that the Braille dots are treated with a transparent, colorless coating applied to the back of the paper, which is then bound once dry—information Mr. Park had been curious about. She also mentions the high cost of sending Braille letters from the United States to Korea, as such letters do not receive any postal discount or special consideration.

5. Applications in Curation and Public Engagement

One of the ultimate goals of digitizing cultural heritage is to enable new forms of access and engagement. The NHM has actively used its digital archive in designing exhibitions, educational programs, and collaborative projects, thereby demonstrating the practical utilization of digitized Hangeul materials. In particular, the year 2023 provided a showcase example: the digitization of the entire run of the historic children's magazine *Eorini* and its integration into a major exhibition and related educational activities.

5.1 Exhibition Case: Centennial Exhibition of the Hangeul Magazine *Eorini*(Children)

In 2023, the National Hangeul Museum hosted an exhibition titled "Children in a Happy World of Their Own" to commemorate the 100th anniversary of the founding of *Eorini* magazine. *Eorini* (meaning "Children") was first published in 1923 by the pioneering children's writer Bang Jeong-hwan, and it played a crucial role in shaping modern concepts of childhood

in Korea. The magazine ran from 1923 until 1935, producing a total of 122 issues in that period, of which 120 issues have survived to the present. These surviving issues contain a treasure trove of early 20th-century children's literature, poems, illustrations, and articles written in accessible Hangeul for young readers



Figure 3. Exhibition poster for "Children in a Happy World of Their Own"

In preparation for the centennial exhibition, NHM undertook a project in 2023 to fully digitize all available issues of *Eorini*. Over 13,600 pages from 174 physical copies (120 issues) were photographed at high resolution, capturing everything from cover art to interior illustrations and text. This constituted a significant portion of the year's digitization output. Because *Eorini* is a printed magazine (with relatively legible typography), the focus was on imaging quality and faithful color reproduction of the aged paper and ink.

Exhibition Planning Phase: The availability of complete digital scans of Eorini greatly influenced the curation of the "Children in a Happy World of Their Own" exhibition. Curators were able to deeply explore the content of the magazine without repeatedly handling the brittle originals. They identified key themes and stories from the magazine's pages - such as the emergence of the concept of the "modern child" (Eorini) in Korea, the promotion of children's rights and imagination, and the use of simple Hangeul in literature for young audiences. High-quality digital images were printed and mounted as facsimiles of magazine pages in the exhibition, allowing visitors to see excerpts of poems or illustrations up close. For instance, colorful cover artworks from various years of Eorini were reproduced from the digital files and displayed in sequence to show the changing design trends of the 1920s-30s. In interactive kiosks within the gallery, visitors could browse entire issues of *Eorini* digitally, flipping through pages on a touch screen. This was a direct way of bringing the digital archive into the physical exhibition space.

5.1.2 Exhibition Implementation Phase: The exhibition narrative itself was enriched by the research facilitated by digitization. It showcased how the notion of "children" (*Eorini*) was established and celebrated in Korea, largely through Bang Jeong-hwan's influence and the magazine he created. The curators, having access to every page of every issue, could select representative excerpts: for example, an article from a 1923 issue exhorting adults to respect children, or a 1930s story written by a child. These were translated and presented with context so

visitors could appreciate them. The digital archive thus acted as a research backbone for the exhibition team.

The exhibition space is available for virtual exploration via Matterport. In this VR environment, users can navigate the gallery, select individual artifacts, and view their images along with descriptive metadata.



Figure 4. VR view of the exhibition room

5.2 Educational Activities

The impact extended beyond static displays. NHM collaborated with the Bang Jeong-hwan Foundation to create an interactive educational program in conjunction with the exhibition. In this program, children visiting the museum took on the role of magazine reporters and editors: they studied digitized Eorini content on tablets, then wrote and assembled their own "special issue" of a magazine. The fact that the entire archive of Eorini was digitized meant that these young participants could easily access authentic historical content - they could read jokes, riddles, or news from 100-year-old magazines and draw inspiration for their own writing. One photograph from the museum's newsletter shows a child presenting her work in front of a screen displaying the magazine project. This hands-on activity was very well received, as it connected children of today with those of the past through the common medium of a magazine, all enabled by the digital availability of Eorini.

5.3 Summary of Impact

In summary, the *Eorini* digitization and its application in the exhibition exemplify how digitized content can be leveraged for curation and public engagement:

- **5.3.1** Research & Curation: Curators used the digital archive to conduct in-depth research and select content, ensuring historical accuracy and richness in the exhibition.
- **5.3.2 Exhibition Design:** Digital images were reproduced for display and interactive browsing, enhancing visitor experience by allowing direct engagement with historical documents.
- **5.3.3 Educational Programming:** The archive content was transformed into an educational tool, enabling creative activities that resonate with the exhibition's theme.
- **5.3.4 Preservation:** The original *Eorini* magazines, which are rare, did not need to be exposed for long periods; only a few original copies were shown under protected conditions, while most content was shown via digital surrogates, balancing access and preservation.

6. Conclusion and Future Directions

6.1 Achievements and Impact to Date

Over nearly a decade, the National Hangeul Museum's digital preservation and contextual reconstruction project has made remarkable strides in safeguarding and propagating Korea's Hangeul cultural heritage. By 2025, the initiative has digitized thousands of artifacts—ranging from 15th-century manuscripts to early 20th-century magazines—and enriched them with scholarly interpretation, all made freely accessible through a modern online platform. This vast digital collection ensures that anyone, anywhere can explore the depth and breadth of Hangeul's legacy, fulfilling the museum's mission to support public enjoyment and academic research without the barriers of time and space.

6.2 Alignment with UNESCO Memory of the World Programme and Best Practices

The NHM's digital preservation initiative demonstrates exemplary alignment with UNESCO's Memory of the World Programme guidelines, particularly in its treatment of materials inscribed on the UNESCO Memory of the World Asia-Pacific Regional Register. Among the digitized collections are several items that have achieved this prestigious recognition, underscoring the international significance of the preserved materials and the responsibility that comes with their stewardship. The project's comprehensive approach embodies all four core principles of UNESCO's General Operational Guidelines for the Memory of the World Programme: Preservation through highresolution digitization that creates permanent surrogates while protecting fragile originals from handling damage; Access via the freely accessible online archive that removes geographical and temporal barriers to scholarly and public engagement; Distribution of derived products through the integration of digitized materials into exhibitions, educational programs, and interactive platforms that transform raw archival content into meaningful cultural experiences; and Awareness raising through collaborative projects that highlight the cultural significance of Hangeul heritage both domestically and internationally. This alignment positions the NHM's work within the broader global framework of documentary heritage preservation, demonstrating how national cultural institutions can contribute to UNESCO's vision of safeguarding humanity's documentary memory while serving local communities and international scholarship.

6.3 Expansion of Content and Partnerships

Moving forward, NHM has laid out plans to expand and innovate. First, there is a commitment to continual content expansion: new acquisitions or previously un-digitized materials (for example, certain categories of prints or ephemera) will be systematically added. The mention of "continuous data expansion and service improvement" in the archive's launch indicates that the museum will not view the archive as a one-off product but as an evolving repository. This may involve partnering with other libraries or archives to include externally-held Hangeul materials, thus moving toward a more comprehensive national (or even global) Hangeul heritage portal.

6.4 Leveraging Advanced Technologies

Second, the NHM is exploring advanced technologies to further enhance and expand the archive's functionality. With the rising interest in AI and machine learning, there are possibilities such as AI-assisted transcription (for printed texts, perhaps automated OCR could be implemented, and for handwritten texts, training

models on the trove of transcribed data to assist experts), or natural language processing to enable semantic search through the content of the documents. Moreover, AI could help in creating automated translations of the Korean interpretive texts to other languages, increasing global accessibility.

6.5 User Engagement and Collaboration

Third, user engagement features might be added to the archive. Future directions may include allowing users to curate their own collections or exhibitions from the archive and interactive teaching modules for schools to use archive materials in curricula. NHM's archive could serve as a platform for citizen research—for example, enabling linguists around the world to collaboratively study Hangeul manuscripts directly on the website, sharing annotations or insights.

Another envisioned direction is increased inter-institutional collaboration. NHM intends to position its archive as a central hub for Hangeul resources by working with relevant institutions. This could involve linking data with the National Library of Korea's digital collections Korea Memory ensuring that users navigating Korean historical sources have a seamless experience. It might also mean cooperating with international museums that hold Korean artifacts, to feature their Hangeul-related items in the NHM archive (with permission), thereby presenting users with a more global view of Hangeul's influence.

In conclusion, the NHM's digital preservation project demonstrates how a museum can successfully adapt to the digital era, bridging the gap between preservation and access, scholarship and public interest. By digitizing and contextualizing Hangeul cultural heritage, the museum has created a living archive that not only protects the past but also inspires the present and future generations. As the project continues, it stands as an exemplary model for other cultural heritage institutions aiming to preserve their collections digitally and make them flourish in the collective knowledge space.

References

National Hangeul Museum, 2025: Press Release: National Hangeul Museum Archive Website Renewal – Online Access to Hangeul Cultural Resources. 4 March 2025.

National Hangeul Museum, 2023: Summary of Original Text DB Construction (2015–2023). Internal report, 20 November 2023.

National Hangeul Museum, 2020: Procedure for Building Original Text Image Database of Collections. Internal Guide, Exhibition & Operations Division.

National Hangeul Museum, 2021: Results Report: 2021 Collection Original Images Construction and Transcription/Interpretation Writing Project. 30 December 2021.

National Hangeul Museum, 2016: "Digital Hangeul Museum moves to a new home". *Museum News*, 18 July 2016.

NHM Achive. Available at: https://archives.hangeul.go.kr/ko/M 000000591/archv/ot/list [Accegssed on 2025-06-20]

Virtual Exhibition: Children in a Happy World of Their Own. Available at:https://my.matterport.com/show/?m=g7Jr5P39XSG [Accessed on 2025-06-20]