

DIGITIZATION OF JAVANESE MANUSCRIPTS IN THE STUDY OF ARCHIPELAGO MANUSCRIPTS AT THE REKSA PUSTAKA MANGKUNEGARAN SURAKARTA LIBRARY

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Abstracts

Libraries have an important role in preserving local wisdom treasures. One of the libraries that is massive in carrying out this role is the Reksha Pustaka Mangkunegaran Surakarta Library. Javanese manuscripts are cultural artifacts that contain valuable knowledge that is useful in life. Based on the benefits of the manuscript for future generations and considering the age of the manuscript, it is necessary to digitize it in an effort to preserve knowledge and add to the treasures of Indonesian manuscript studies. This research aims to describe efforts to digitize ancient Javanese archives at Reksha Pustaka. The research method uses qualitative interviews with librarians, the study of related documents, and also observation. The results of the research show that efforts to digitize Javanese manuscripts are carried out by making copies in the form of digital documents so as to increase the collection with better quality and make it easily accessible to library users. The policy for digitizing ancient manuscripts includes selection, storage, and transliteration. The stages of digitizing ancient manuscripts are pre-digitization, digitization, editing, and finalization, namely checking and printing the manuscript.

Keywords: Digitization, Manuscript, Library

INTRODUCTION

A. Background

Indonesia, previously known as the archipelago, is rich in local wisdom. This local wisdom becomes a cultural identity that develops and is known. One of the local wisdom that is still preserved is ancient manuscripts. Ancient manuscripts, also called manuscripts, are printed works in writing containing noble teaching information of cultural and historical value that is useful for future generations. This aligns with

Undang - Undang Number 5 of 2017, which states that manuscripts or ancient texts are one of the ten objects of national cultural progress. In the Library Undang-Undang 43 of 2007, it is also stated that ancient manuscripts are written documents that are not printed and reproduced by other means, are at least 50 years old, and have essential value for national culture and science.

Based on the definition of ancient manuscripts, it can be seen that a manuscript at least 50 years old is vulnerable to various threats and damage. This damage can threaten the body and the information contained therein. The various types of physical materials of ancient manuscripts also have different forms of durability. Suppose we look at ancient manuscript materials, namely lontar, daluwang, and ancient paper. These different materials have their methods and challenges in preserving them. The importance of ancient manuscript preservation activities is in line with the importance of the information content that needs to be inherited and preserved because ancient manuscripts strengthen the identity and character of the nation. Many ancient manuscripts' contents have become references in developing other cultural elements, such as the development of films and educational teaching materials. Considering the usefulness of good ancient manuscripts, many parties have started suitable preservation activities.

One of the institutions that plays a role in preserving ancient manuscripts is the library. The library is an information institution that processes and presents information on the latest collections and those with previous cultural value. The Reksa Pustaka Library is a unique library that serves as a center for preserving Javanese culture. The primary collection owned is the ancient Mangkunegaran manuscript. Many of these ancient manuscripts are old and prone to damage. The preservation activity carried out in the care of ancient manuscripts at the Reksa Pustaka Library is digitization. Digitization transfers media into digital or electronic form to make the collection accessible for users. Based on the background above, the question arises about the policy and process of digitizing ancient manuscripts by the Reksa Pustaka Library. Remember that the Reksa.

Pustaka Library is a national reference for Javanese collections, especially ancient manuscripts. This article will analyze the policy and process of digitizing ancient manuscripts at the Reksa Pustaka Library.

B. Literary Reviews

Several previous studies have the same relevance as the topic of this research study. Muhammad Ilham Nurrahman and Ike Iswary Lawanda's (2023) article explains that the digitization process that has been carried out at the Literary Documentation Center has not yet carried out the final stage in the process, namely packaging digital files from ancient manuscripts and the insight of library employees regarding digitization determines success.

Khadijah et al. (2021) conducted another similar study, which discusses the digitization process carried out at the Bandar Cimanuk Museum from start to finish. It also explains that digitization activities depend on influencing factors. These factors include the value of library materials, the type of library materials, and the needs of museum service users.

The similarities between this research topic and the previous one relate to preserving ancient manuscripts, especially in digitization. Only the research locus is different; in this research, the Reksa Pustaka Library discusses policy issues and the digitization process.

C. Underlying Theories

According to Undang - Undang 43 of 2007 concerning libraries, *libraries* are institutions that manage collections of written works, printed works, and recorded works professionally using a standard system. The library's primary purpose is to meet users' education, research, preservation, information, and recreation needs. Apart from functioning as a place to preserve library materials, the library has special collections, including ancient manuscripts or manuscripts.

Ancient manuscripts contain information about national culture, essential for national culture, history, and science. According to Nindya (2008:1), ancient

manuscripts are a significant cultural heritage from an academic and socio-cultural perspective. This manuscript is a cultural relic that contains various texts created by past societies, which can be used for research in the fields of religion, philosophy, history, literature, language, customs, law, and various other studies. Thus, ancient manuscripts can be concluded as any form of written work that is decades old and needs to be preserved and cared for properly to provide information for future generations.

One way of preserving ancient manuscripts is by digitizing them into works that future generations can still enjoy. Digitization is transferring or converting existing documents and data from analog format to digital form. Digitization begins the digitization process, so in sequence, digitizing a manuscript begins with digitizing the manuscript itself.

D. Research Methods

Mastering special knowledge and techniques is required to convert a manuscript into digital form. Digitizing this manuscript can support efforts to preserve the knowledge of the archipelago's treasures, which the Reksa Pustaka Pura Mangkunegaran Library is pursuing. Apart from that, the results of digitization and digitization also help build infrastructure that makes it easier for the wider community to access knowledge in ancient manuscripts, which the library is currently pursuing.

This qualitative research is used to study phenomena or problems by exploring and understanding the meaning, experiences, and perspectives of individuals involved in the situation. This approach aims to reveal people's subjective views and interpretations of various events or conditions they experience, thereby producing in-depth insights into social dynamics and the surrounding context. Thus, this research method can be used to describe the process of digitizing manuscripts in the Reksa Pustaka Library. The subject of this research is ancient manuscripts found in the Reksa Pustaka Library. The data collection techniques used were observation and interviews. With this observation process, researchers directly observe the process that occurs. Meanwhile, complementary and reinforcing data was obtained by conducting direct interviews with Reksa Pustaka Library officers.

DISCUSSION

Profile of Reksa Pustaka Library

The Reksa Pustaka Library is one of the special libraries under the auspices of the Mangkunegaran Temple, Surakarta City. Located in the center of Surakarta, namely on Jalan Ronggowarsito, Keprabon, Banjarsari District, Surakarta City, Central Java. In the same building complex as the Mangkunegaran Temple, the Reksa Pustaka Library is located on the east side of the royal building and occupies two floors. This library is one of the oldest libraries in Indonesia, founded on August 11, 1867, and the contents are more than a century old. Built during the era of King Mangkunegaran IV, he was famous for his capable personality and high artistic spirit. This is proven by the large number of his works that still exist today and are neatly stored in Reksa Pustaka.

Type of Library Reksa Pustaka is a special library because it has collections with subjects related to Javanese culture, especially Mangkunegaran Temple. The collections held are diverse, namely ancient books, archives, and also ancient manuscripts of various types. The existence of the Reksa Pustaka Library is still sustainable today because it is able and successful in carrying out its role as an information institution. One of these roles is especially the preservation of Javanese culture which is rich in values. The rich collection attracts users, especially researchers from various regions, both nationally and internationally, to come to look for information references. Seeing this, the Reksa Pustaka Library needs to carry out collection management well, so that the collection is maintained and remains sustainable. One form of collection management is preservation, especially the digitization of ancient manuscripts. The Reksa Pustaka Library has a target of digitizing ancient manuscripts. This is based on the collection of ancient manuscripts many of which are old and prone to various types of

damage. This is reinforced by the explanation of one of the informants who are also staff there, the explanation is as follows:

"Yes, here the forms of physical preservation for manuscripts are media transfer, script transfer, and translation. So that information can be known now and in the future."

Efforts to preserve manuscripts are carried out at the Reksa Pustaka Library so that manuscripts are not damaged and become extinct, and can continue to be used by future generations. Digitization is a form of physical preservation which is also called media transfer from printed manuscripts to electronic or digital.

Digitization Policy in the Reksa Pustaka Library

The total collection of ancient manuscripts owned by the Reksa Pustaka Library totals approximately 750 titles. The shapes and materials of ancient manuscripts are very diverse, such as books, sheets of paper, and daluwang, and some are made or written on dried palm leaves. The ages and forms of damage to these ancient manuscripts also vary, so policies are needed in preservation, especially digitization. There is a policy that serves as a regulatory reference in the process of digitizing ancient manuscripts at the Reksa Pustaka Library. This policy is regulated and mutually agreed upon, the policies include:

1. Manuscript Selection

Manuscript selection is a process of grouping manuscripts into several categories based on the level of damage and age of the ancient manuscript. Manuscripts categorized as seriously damaged receive immediate action for their preservation, especially digitization. Ancient manuscripts in the category of heavy damage need to have the damage repaired first. The repairs carried out were by gluing or connecting the manuscript writings with adhesive tape. This is as stated by one of the informants,

"For ancient manuscripts that are cracked or broken, they are usually patched first by gluing them together using femoplast, which is reversible insulating plaster."

Furthermore, the informant also explained one of the steps in repairing ancient manuscripts, namely,

"The most damage to ancient manuscripts in the Reksa Pustaka Library is due to age. Many of these ancient manuscripts are old. "Especially for lontar manuscripts, when treated using candlenut seeds which are burned and then the oil is extracted, the oil is rubbed onto the manuscript using a cloth or soft brush."

For ancient manuscripts with the following general damage submitted by informants,

"Ancient manuscripts that are hundreds of years old, the form of damage is usually the binding is damaged. One example is an ancient manuscript from the 1930s, the binding was damaged, and if it were bound again the paper on the manuscript could be damaged. "So the care is left alone and then put in a box made with Sirio black paper, the size is adjusted to the manuscript, namely the length and height".

Based on information from informants, the main steps taken in digitization, namely carrying out selection and improvements first, are the right steps. This is to the preservation goal according to Sulisty Basuki in Buang (2018), namely that preserving the information content of library materials means preserving the original form as completely as possible so that it can be utilized optimally or transformed using other media.

2. Storage of Ancient Manuscripts

The storage location for ancient manuscripts in the Reksa Pustaka Library collection differs from other collections. Ancient manuscripts are stored in wooden cabinets with glass at the front. The unique location is on the 2nd floor of the Reksa Pustaka Library, namely on the north side. Storage in glass cabinets is carried out to reduce physical contact with library visitors. A special officer usually assists visitors who want to see or look for references to ancient manuscripts in the manuscript department. A unique code, A-R, is used to classify Javanese manuscripts. This classification is to facilitate collection retrieval, which officers usually carry out. The officer will collect the manuscript collection in question using gloves and be very careful. The manuscripts taken are then placed in a soft cushion, and the officer will find information for the user according to the user's needs. This is the same as what was conveyed by one of the informants,

"Manuscript pillows were made as base pads for the manuscript."

Making these manuscript pads is a form of preserving ancient manuscripts. They are placed in a soft place and not too hard to minimize damage to the manuscript. One of the informants said that how officers treated ancient manuscripts

was one of the things they entered the KITLV library. The following is what was conveyed:

"The KITLV Leiden Library provides input on how to treat ancient manuscripts. One of the inputs is that there may be changes in the future, one of which is that visitors are limited and the texts displayed are only copies or digitized manuscripts."

Suppose this rule is later implemented in the Reksa Pustaka Library. In that case, this is an excellent step to maintain the authenticity of the ancient manuscripts and extend their life so that they are minimally damaged and can be used continuously for future generations. However, before these rules are implemented, it is best that manuscripts in digital form can be accessed easily by readers.

3. Transliteration of Ancient Manuscripts

Transliteration of ancient manuscripts is one form of manuscript preservation effort, namely language translation. The steps taken by the Reksa Pustaka Library in transliteration are carried out by officers who are experts in the original language of the ancient manuscripts. Not all officers understand the manuscript's original language, so they need special skills in reading and analyzing it. This is done so that no information content in the manuscript is lost. The following is information from one of the informants,

"The original language in ancient manuscripts uses ancient Javanese script. Only a few people understand and master this ancient Javanese script, so transliteration is necessary to maximize its use and allow it to be used well by users. The transliteration results are printed and stored in a special shelf for transliteration results."

The informant also added regarding the unique skills that transliteration officers must have, namely,

"Digitization officers need special skills, namely careful attention to the characters. This is done to maintain the information content in ancient manuscripts."

The transliteration process is done by changing the script from Javanese to Latin and then changing the language to make it easier to understand. The following are the results of the informant interviews,

"For manuscripts or ancient manuscripts, some are in Javanese, some are in Arabic. Most Arabs are bald. The language is Javanese, but the letters are in Arabic. "With the Javanese language in the manuscript, for its preservation, the script was first transferred from Javanese to Latin (still Javanese), then the translation was carried out."

3. Digitization Process in the Reksa Pustaka Library

Manuscripts stored in the Reksa Pusaka Library cannot be accessed freely by all visitors. Visitors who want to use or study these manuscripts must first obtain special permission. This process is necessary because these manuscripts are valuable documents that require special protection to maintain their authenticity and prevent damage.

Digitization allows these ancient manuscripts to be accessed and read in digital format, protecting them from damage over time. Converting physical manuscripts into digital form minimizes the risk of physical damage due to age or environmental factors. In addition, digitization also reduces the possibility of losing original documents, as digital copies can be stored safely and distributed widely.

Digitization involves scanning or photographing ancient manuscripts to produce digital versions that can be accessed online or via electronic devices. This allows more people to access and study manuscripts without handling physical manuscripts, which are often fragile and susceptible to damage. In addition, with digital archives, information in ancient manuscripts can be disseminated more widely and efficiently, enriching educational and research resources.

Overall, the digitization of ancient manuscripts plays an essential role in preserving culture and history. This process protects the manuscripts from wear and tear and physical damage and ensures that their knowledge and heritage remain preserved and accessible to future generations. Thus, digitization is a strategic step to ensure the survival and relevance of ancient manuscripts in this digital era.

The following is the process for digitizing manuscripts at the Reksa Pustaka Library:

a. Pre-Digitization Stage

The pre-digitization process involves critical physical steps to collect, sort, and reorganize documents before digitization occurs. These steps include several critical stages as follows:

1. Selection of ancient manuscript documents that have experienced significant damage

While digitizing ancient manuscripts, the Reksa Pustaka Library first selected manuscripts that needed to be fixed. Based on direct observations by researchers, many ancient manuscripts in the Reksa Pustaka Library experienced various forms of damage, such as torn pages, mold, dust, and writing that was so faded that it was almost unreadable. This selection is essential to ensure that manuscripts that are most vulnerable and require immediate treatment can be digitized first.

2. Checking the completeness of documents

In order for digitization at the Reksa Pustaka Library to run optimally, the library ensures that each ancient manuscript document to be digitized is unique (one title per copy). To verify this, Reksa Pustaka Library staff thoroughly checks each manuscript to be digitized, ensuring no duplications.

Library staff at the Reksa Pustaka Pura Mangkunegaran Library use careful and systematic steps to digitize manuscripts. Before starting the digitization process, officers first inspect each manuscript collection's physical condition. This initial step is crucial to assessing whether the manuscripts are ready to be digitized or require correction.

If the manuscript collection is in good condition, with no significant damage, such as tears, mold, or faded writing, it can immediately enter the digitization stage. This process involves scanning or photographing the manuscript to produce a high-quality digital copy that can be easily accessed and preserved.

However, if the manuscripts are highly damaged, such as torn pages, barely legible writing, or broken characters, repairs must be made before digitization can begin. One repair method is to glue the pages of the palm leaf manuscript with transparent tape. Isolation aims to reconnect broken writing or characters so that the text can be read clearly and does not lose its original meaning. These repairs must be carried out carefully to avoid further damage to the fragile manuscript.

Further analysis shows that this process of checking and correcting is essential for maintaining the physical integrity of the manuscript and ensuring that the resulting digitization is of high quality. Digitization carried out on manuscripts that have yet to be repaired appropriately can produce incomplete or difficult-to-read copies, which will ultimately reduce the value of the digitization process itself.

In addition, the remedial steps taken also reflect efforts to maintain a balance between physical preservation and digital accessibility. By repairing manuscripts before digitization, libraries ensure that researchers and the wider public can access them in their best condition, both physically and digitally.

Overall, digitization activities at the Reksa Pustaka Pura Mangkunegaran Library involve structured and thorough processes. From initial inspection of the manuscripts' condition, repairs if necessary, and digitization, every step is taken to ensure that the ancient manuscript collection can be preserved and accessed in the most effective and efficient manner. This not only helps in the preservation of culture and history but also allows the valuable information in the manuscript to be disseminated and utilized by future generations.

This pre-digitization process is critical to ensure that ancient manuscripts can be digitized correctly and efficiently so that the digitization results can retain as much of the original information from the manuscript as possible. By following these steps, the Reksa Pustaka Library can maintain the integrity and continuity of these valuable documents while making them more accessible for future research and preservation.

b. Digitization Stage

In scanning ancient manuscript documents, several steps must be carried out sequentially. The following are the steps in question,

First, ancient manuscript documents had to be opened page by page. Each page must be handled carefully to avoid damage. After opening a page, the user needs to click on the camera button available on the laptop screen used for scanning. This step aims to take an image of the page that has been opened.

Once the first page has been scanned, subsequent pages of the ancient manuscript must be opened slowly and carefully. The scanning step, done by clicking

the camera button on the laptop, is repeated. This process must be repeated continuously for each page until all the pages in the ancient manuscript have been scanned. By following these steps carefully, all pages of the ancient manuscript document can be scanned properly, allowing for perfect digitization without damaging the authenticity of the ancient manuscript.

c. Editing Stage

The next stage after the scanning process is editing the manuscript. After the manuscript is scanned, the results may vary in brightness, tilt, and image size. Several factors, such as uneven lighting during scanning or imperfect scanning angles, can cause this variation. At this editing stage, a particular application is used to edit and adjust the composition of the scanned photo. The purpose of this editing is to ensure that each page of the manuscript looks clear and uniform in terms of brightness, slant, and size.

At the Reksa Pustaka Pura Mangkunegaran Library, the application used to make these edits is Photoshop. By using Photoshop, editors can make various necessary adjustments, such as adjusting brightness and contrast, straightening skewed images, and resizing images so they are uniform. This editing process is critical to ensure the scanned manuscript has excellent and consistent visual quality. This way, the manuscript can be stored and accessed digitally with satisfactory results and easily read.

d. Finalization Stage (Manuscript Checking and Printing)

At this final stage, the manuscript completed through the editing stage is checked. This check aims to ensure that the edited manuscripts are ready for printing, that there are no errors in the page order, and that all writing or characters in the manuscript are straightforward and can be read well.

Once the checking is complete and the manuscripts are confirmed to be error-free, the next stage is printing. At the Reksa Pustaka Pura Mangkunegaran Library, manuscript printing is done using a printer. Manuscripts that have passed the checking are then printed according to their respective titles and sorted according to the original order in the manuscript.

After the printing process is complete, the printed manuscript is placed in a folder labeled according to its title. These folders are then placed on a shelf

specifically provided for the manuscript digitization section. In this way, printed manuscripts can be easily found and accessed according to their title and stored neatly to maintain the order and integrity of the library's digital collections.

CONCLUSION

The Reksa Pustaka Mangkunegaran Surakarta Library, in particular, is a library that preserves collections containing Javanese culture, one of which is ancient manuscripts. The number of ancient manuscripts owned is approximately 750 titles with various forms and materials such as lontar, ancient paper, and daluwang. Many of the ancient manuscripts are old and damaged. Seeing this, preservation needs to be carried out, one of which is digitization. Digitization is the process of transferring media from printed form to digital form.

Several policies are implemented in the digitization process, such as manuscript selection, namely by prioritizing manuscripts with heavy damage, storage of manuscripts, namely on a separate shelf, and also transliteration, namely language translation carried out before digitization. The translation results are stored in their storage room and cupboard. The stages of digitizing ancient manuscripts are pre-digitization, digitization, editing, and finalization, namely checking and printing the manuscript.

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