

DESIGN OF ACTIVITY BOOK FOR STUDY TOUR FOR 12-YEAR-OLD CHILDREN AT THE LOKA JALA CRANA MUSEUM

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ABSTRACT

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Received:
30 Agustus 2025
Revised:
22 September 2025
Accepted:
29 September 2025

Loka Jala Crana Museum in Surabaya is an educational destination with the potential to introduce Indonesia's maritime history to elementary school students. However, the lack of engaging supporting materials often causes students aged 11–12 to lose focus during study tours. This project aims to design an Educational Activity Book as an interactive learning tool to support historical education during museum study tours. The design method involves needs analysis using the 5W1H approach and the application of educational graphic design principles. The book is designed with a cartoon and flat illustration style, and is equipped with interactive elements such as stickers, pin buttons, collectible cards, posters, and keychains as rewards. The final product is expected to assist teachers in guiding students, increase active participation, and make history learning more enjoyable while encouraging curiosity and exploration during museum visits.

Keywords: Activity Book; Jala Crana Museum; Study Tour; Elementary School

1. INTRODUCTION

Education has a central role in shaping the character and identity of a nation, especially for the younger generation. Among the various subjects taught, history has a crucial function in building awareness of national identity and fostering a sense of pride in the nation. Unfortunately, in practice, history lessons are often considered boring, difficult to understand, and not relevant to children's daily lives, especially at the elementary school level. This has an impact on children's low interest in learning history and their weak involvement in learning. In facing these challenges, there is a need to innovate learning methods that are more interesting, fun, and in accordance with children's cognitive development. One of the approaches that is considered effective is the use of educational activity books that can accompany the history learning process in a more interactive manner. Activity books equipped with illustrations, games, and exploration spaces are able to increase students' active participation, so that historical material is not only received passively, but also understood deeply through direct experience.

The cognitive development of 12-year-olds shows that they have been able to think logically, analyze information, and solve problems simply. Therefore, it is important to adapt the form of history learning media to their thinking skills so that educational messages can be conveyed optimally. In line with that, experiential history learning such as *study tours* to

museums is one of the effective alternatives in introducing history in a contextual and fun way. Museums as an institution that stores and presents historical artifacts have great potential as a source of direct learning for children. The Loka Jala Crana Museum Surabaya, which is a maritime museum owned by the Indonesian Navy, offers a diverse collection of relevant Indonesian maritime struggle history for students to study. However, visits to museums have not been fully utilized as a structured and meaningful learning medium. Therefore, a companion media is needed in the form of an educational activity book that is able to direct the learning process during *the study tour*, as well as increase children's involvement and understanding of history.

The development of this educational activity book is expected not only to provide benefits for students in understanding the values of the nation's struggle, but also to support the role of schools, museums, higher education institutions, and students in organizing innovative history learning. The book is designed to integrate educational elements with entertainment elements, such as stickers, pin buttons, collectible cards, and infographic posters, which can enrich a child's learning experience and make museum visits more engaging. Thus, this scientific article aims to describe the process of designing and implementing educational activity books as a medium for learning history for 12-year-olds in *study tour* activities at the Loka Jala Crana Museum Surabaya. The main focus lies in how activity books can be designed in accordance with children's cognitive development, as well as how these media can increase children's involvement and understanding during visiting museums as a fun and meaningful space to learn history.

2. THEORETICAL FRAMEWORK

An activity book is a type of interactive book that is designed to engage its readers through various creative activities such as coloring, drawing, connecting dots, or answering interactive questions (Khowraiva & Streit, 2022). This book also functions as an educational medium that helps the development of fine motor skills and critical thinking in children. Rybak (2022) added that activity books present informational topics in a fun and interactive way, complete with short texts, illustrations, and blank spaces that must be filled, so that children are more engaged and understand the material easily.

Jean Piaget states that a child's cognitive development occurs through several stages, and by the age of 12, children are generally in the concrete operational stage towards the formal. At this stage, they begin to understand logical concepts and think systematically (Rahmaniar et al., 2021). In this context, learning materials such as history can be delivered through visual and hands-on experiences, such as museum-based activity books.

Active learning adalah pendekatan pembelajaran yang menempatkan peserta didik sebagai subjek aktif. Anak didorong untuk terlibat dalam aktivitas yang menuntut berpikir kritis, menyelesaikan masalah, dan berkolaborasi (Depita, 2024). Buku aktivitas, yang menyediakan kegiatan seperti menjawab pertanyaan, menghubungkan fakta sejarah, dan eksplorasi visual, menjadi alat yang mendukung pendekatan ini.

According to Raihan (2022), design is a planned process that aims to produce solutions to a problem. In this context, the design of activity books is a solution to the lack of interesting history learning media that is suitable for children's development. The design process includes needs analysis, idea development, production, and evaluation of educational products.

Graphic design is a visual communication process that involves arranging elements such as typography, colors, layouts, and illustrations to convey a message (Ramdani, 2019). In children's activity books, graphic design principles such as hierarchy, balance, emphasis,

proportion, and contrast are essential to present historical material in an engaging, easy-to-understand, and fun way. Typography: Simple letters, large sizes, and loose spacing are important for the text to be easy for children to read (Catherine & Satriadi, 2021). Color: Bright colors are used to create a fun learning atmosphere and stimulate children's visual interest (Ramdani, 2019). Layout: A good layout supports the readability and visualization of the material in a harmonious and structured manner.

Children's activity books often adopt a *playful/kids' style*, with cartoon-style illustrations that are cheerful, colorful, and easily recognizable. This type of illustration is effective in attracting attention and helping children understand the information conveyed (Aji & Ayuswantana, 2025; Hutasuhut et al., 2021). Contextually appropriate illustrations help reinforce the message and facilitate understanding of historical topics.

Several previous studies support the relevance and effectiveness of activity books as interactive learning media: emphasized the importance of activity books in delivering health education through creative activities involving children's motor skills Utami et al. (2021), show that adventure activity books can increase the learning motivation of 1st grade elementary school students, because they contain elements of games and stories Riawan et al. (2020), and highlight that activity books can insert character values such as social care through fun activities, which can also be applied in the context of historical education Nurhabibah et al. (2022).

The three studies, although they have different themes, agree that activity books are able to increase children's motivation, involvement, and understanding in the learning process. This strengthens the reason for the use of activity books in educational study tour activities to historical museums.

3. METHOD

The design of this educational activity book was carried out to accompany 6th grade students of Santo Yusup Karangpilang Catholic Elementary School in a study tour to the TNI Navy Museum Loka Jala Crana Surabaya. The design target is 11–12-year-olds who need visual and interactive learning media during educational visits. The research location was carried out in two places: Santo Yusup Catholic Elementary School as a test site, and the Loka Jala Crana Museum as an object of material exploration and design context.

The design process began with direct observation at the museum, followed by documentation of students' behavior during the tour, as well as interviews with the principal regarding the learning approach used and expectations for accompanying media. Observations showed that students easily lost focus and were less active during the museum's question and answer session due to the absence of exploratory media. This is the basis for formulating the need for educational media that is able to maintain children's involvement during visits.

Data collection is carried out primarily through direct observation and interviews, as well as secondary data from literature references, articles, and information from the museum's official website. The target of the design is grade 6 students from the Surabaya area and its surroundings who have visual cognitive characteristics and like exploratory activities such as quizzes or educational games. Data analysis uses the 5W1H (*What, why, Who, When, Where, How*) approach to articulate the direction and focus of the plan: what is the purpose of the book, why is it important, where is it used, who is the user, when is it used, and how does it work. The design scheme includes: background, problem identification, data collection, concept preparation, prototyping, testing, revision, and final evaluation. The prototype was tested directly on students during the museum visit, and the results were

used as material to improve the final version of the activity book.

4. RESULTS AND DISCUSSION

The design of this educational activity book aims to provide a fun, interactive, and historical learning media in accordance with the characteristics of 6th grade elementary school students who will take a *study tour* to the Loka Jala Crana Museum. This book is designed to not only convey information, but also stimulate children to be actively involved in the learning process through activities such as matching pictures, coloring, answering quizzes, and drawing themselves. This goal is in line with the theory of active learning (Depita, 2024), which states that effective learning occurs when children are directly and actively involved in the process. Activity books are also relevant to Jean Piaget's theory of cognitive development (Rahmaniar et al., 2022), because students aged 11–12 years are at the stage of concrete to formal operations, so they begin to be able to think logically, systematically, and understand cause-and-effect relationships—this condition is supported by exploratory activities in books.

The big theme raised in this book is "Learning History Becomes Fun", which was chosen in response to the lack of child-friendly history learning media. This book aims to change children's perception of museums, which are often considered rigid and boring, into a place of exciting and interactive exploration. This is reinforced by Rybak (2022) who explains that activity books that present informative topics in a fun way—through illustrations, interactive spaces, and light language, can improve children's understanding of the material. In addition, this approach is also supported by Annisa (2024) who emphasizes the importance of museums in shaping the nation's character, especially if presented with a visual and interactive approach.

Visual Concept

This book uses a simple but expressive flat cartoon illustration style. The choice of this style refers to the opinion of Aji & Ayuswantana (2025) who stated that cartoon-style illustrations are suitable for children aged 7–12 years because they are easy to recognize, communicative, and visually appealing. Illustrations of museum guides and other maritime elements not only serve as decorative, but also support the narrative and build the context of the story.

Typography

The fonts used are Grandstander (for the title) and Montserrat (for the content), which is in line with the recommendations of Catherine & Satriadi (2021) on the importance of choosing simple, large, and easy-to-read letters for children. Readability is a top priority in compiling instructional texts and book narratives. Grandstander is used to build a playful impression, while Montserrat was chosen to keep the narrative easy to read.

grandstander
abcdefghijklmnopqrstuvwxyz.
ABCDEFGHIJKLMNOPQRSTUVWXYZ
KLMNOPQRS
TUVWXYZ*#!
0123456789

Figure 1. Font Granstander

(https://all-free-download.com/font/download/grandstander_clean_6907976.html#google_vignette)



Figure 2. Font Montserrat

([zsquaredstudio.com](https://www.zsquaredstudio.com))

Color Palette

Navy blue, maroon, and bright orange dominate the design. The blue color depicts the maritime theme; red gives an accent of history and spirit; while orange creates cheerfulness and visual appeal. This principle refers to Ramdani (2019) and Campbell (2020) who stated that the use of bright colors can attract children's attention and create a positive learning mood. This color selection helps to build a strong and easily recognizable visual identity.

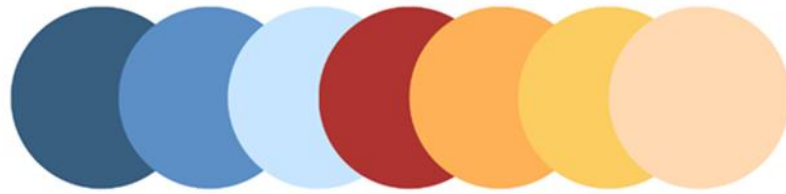


Figure 3. Color Palette

The layout is arranged modular based on a loose grid system to maintain the structure, but remain flexible and does not limit the child's exploration space. The composition adapts to the children's natural reading flow from left to right and top to bottom. This design is in line with the design principles of GameLab (2025) and the definition of layout according to Ramdani (2019) that a good visual structure is able to improve readability, visual efficiency, and guide the user's eyes naturally.

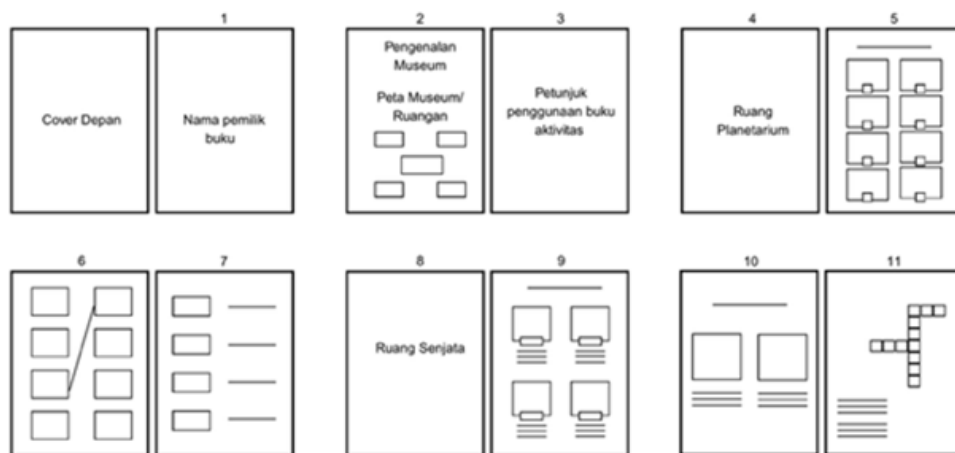


Figure 4. Example Page Layout

Media

The main media is an A5 size activity book, printed on 100 gsm HVS paper with a glossy *softcover*. Equipped with supporting media such as reward stickers, character and ship collection cards, and educational posters.

This strategy pays attention to the studies of Khowraiva & Streit (2022) and Sinaga & Kusumandyoko (2023) which stated that children more easily absorb information through visual, physical, and tactile activities. Therefore, elements such as stickers and cards were developed to enhance the museum's exploration experience. This book is equipped with supporting media such as:

- *Stickers*: Serve as rewards and interactive media during museum exploration.
- *Pin Button*: Exclusive merchandise given after the activity is over.
- *Collectible Cards*: Brief information about a figure, ship, or historical event.
- *Educational Poster*: Visualization of historical infographics and activity hints.

Visualization Process

Moodboard

The visualization process begins with the creation of a moodboard as a reference in determining the aesthetic direction and visual approach of the book. This moodboard contains character illustration style references, color palettes, and page layouts that are tailored to the characteristics of elementary school children and museum themes. Moodboards play an important role in the development of consistent and communicative visual concepts.



Figure 5. Moodboard

This step refers to the design principles put forward by Raihan (2022), namely a structured design process through the stages of needs analysis, idea development, production, and evaluation. *Moodboards* are the initial part of the idea development stage, where visual references are gathered to form the overall design identity. In addition, the selection of visual styles on *the moodboard* also considers graphic design principles such as unity, balance, and contrast as explained by Ramdani (2019).

Character Design and Illustration

The main character shown is a children's museum guide, who is portrayed in an expressive and friendly manner so that they are easily recognizable and able to build emotional closeness with the reader. In addition, illustrations of warships, uniforms, and other typical elements of the Indonesian Navy were presented to strengthen the historical and educational context.



Figure 6. Ilustrasi Karakter Pemandu

The illustration uses a flat cartoon style that is suitable for children aged 7–12 years, in line with the findings of Aji & Ayuswantana (2025) that playful, simple, and expressive visual styles are effective in helping children understand information. Consistent illustrations on each page support the narrative flow of the activity book, while making it easier for children to follow the activity visually.

Cover Design and Sketches

Initial sketches were made to design the front and back cover compositions, including title placement, main illustrations, and additional information areas. These sketches help ensure that the visual composition has met the principles of visual hierarchy and *layout* balance, so that the main elements are immediately clearly read by young readers.



Figure 7. Activity Book Back and Front Cover Preview

The front cover design features the typical icons of the Loka Jala Crana Museum, such as ships and the sea, which aims to visually introduce the identity of historical tourist attractions. Meanwhile, the back cover is designed with a simple look that lists instructions for the use of books, in accordance with the principles of informative design for children (GameLab, 2025).

Layout and Coloring

The page layout is digitally designed using the principle of modular grids, with the aim of creating an orderly yet flexible structure. Each page pays attention to the composition between the text and the illustrations, so that information can be conveyed in a balanced manner without confusing the child.



Figure 8. Preview Layout and Page Design of Activity Books

In the coloring process, bright and high-contrast color tones are used to attract attention and maintain children's involvement when reading and doing activities. Color selection refers to color theory by Campbell (2020) and graphic design principles according to Ramdani (2019), where bright colors are able to create a pleasant learning atmosphere and increase visual stimulus.

Testing and Implementation

The book was tested on 6th grade students of SDK Santo Yusup in a simulated study tour. Children show a high interest in activities and complete quizzes with enthusiasm. The teacher said that books help students understand the contents of the museum independently. These results are consistent with the research of Riawan et al. (2020) and Utami et al. (2022) that activity books are able to increase children's motivation and understanding because of their attractive, colorful, and rich form of creative activities.



Figure 9. Trial Use of Activity Book

Exhibition Booth Documentation

The exhibition booth showcased a full range of products: activity books, supporting media, and additional merchandise. The response from visitors, both students and teachers, was very positive. Many have stated that this book has succeeded in changing the perception of learning history to be more enjoyable.

The final work consists of:

- Prototype and final version of the activity book
- Supporting media (*stickers*, pin buttons, cards, posters)
- Additional merchandise (keychain)



Figure 10. Overall Exhibition Booth



Figure 11. Visitor Documentation

5. CONCLUSION

The design of educational activity books for 6th grade elementary school students in *study tour* activities to the TNI Navy Museum Loka Jala Crana Surabaya has proven to be an interesting, interactive, and appropriate history learning medium for children aged 11-12 years. Through the integration of illustrations, games, and a communicative visual approach, this book succeeds in increasing students' interest, engagement, and understanding of historical material that was previously considered boring. The trials conducted showed that children were more focused, active, and enthusiastic during visits to museums when using this book.

Thus, this activity book is able to bridge the direct learning experience in the museum with the needs of directed and fun learning. This success shows that visual-based educational media is very relevant to be applied in the context of experiential history learning. Therefore, it is suggested that the development of similar activity books can be extended to other museums by adapting the local content that each institution has. In addition, collaboration between educators, designers, and museums needs to be developed so that history learning media is more innovative, inclusive, and easily accessible to students at various levels of education.

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