# Designing An Informative Pop-Up Book About the History of Indonesian Spice Trading Route

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**Abstract.** For a long time, Indonesia had become the center of spice trade. Foreign countries came to Indonesia to get spices straight from its roots. This motivates the beginning of the spice route. A lot of interactions were done when doing spice trading, making the spice route not only a maritime route but also a cultural route. Today's Indonesian culture was influenced by those who came before. The massive impact spices done on our way of life, make the Indonesian government propose the spice route as a world cultural heritage to UNESCO. To support this movement, the knowledge of the spice route will be spread to a wider audience starting at the high school and college level. People's understanding of the spice route doesn't have to be that deep, just the big picture [1]. Unfortunately, only a few sources are talking about the spice route directly, which makes it harder for people to understand the whole thing. The writer proposes designing an information media in the form of a pop-up book that recaps the big picture of spice trade history, the pop-up book is chosen because of its interactivity which affects how information is remembered and received by the audience. The writer used Mike Eisenberg and Bob Berkowitz's method The Big6 because it is widely known as an approach for information and education-based problem.

**Keywords:** Spice Route, Spices, Indonesia, Nusantara, Pop-up book

## 1 Introduction

The need for spices led to the creation of a transcontinental maritime route called the spice route [1]. The spice route plays an important role in the world and importantly Indonesia's cultural diversity through the acculturation of local culture with foreign cultures, the economy, politics, and even religion brought by foreign nations. Given the large role that the spice route has for the world, the Indonesian government will propose the spice route as a world cultural heritage by The United Nations Educational, Scientific and Cultural Organization (UNESCO) [2]. But just like the public's knowledge of batik, keris, and pencak silat, Indonesian need to be familiar about the spice route in general as a requirement from UNESCO. Education has an important role in helping to achieve this target [2]. However, there is not many media that talks about the big picture of spice route history [3]. The Ministry of Education and Culture will apply the spice

route into the existing curriculum. However, this kept the material separated on different chapters and written implicitly [4]. Thus, the author proposes a media that function as a supplementary media that discusses the big picture of the spice route in one media that is informative and interesting, especially for the younger generation in general.

### 1.1     Research Problem

Based on the introduction, the author concludes the research problem for this paper as: How to design an information media about the history of the Indonesian spice route?

### 1.2     Research Target

Male and Female, Age 15-23, High school and college student, and ses A1-B economic level. The target's parents are the decision maker if the target doesn't have their own income. Living in Jakarta/Bogor/Depok/Tangerang/Bekasi area.

### 1.3     Research Psychographics

a. Efficient, expecting to understand the spice route big picture only in one media.
b. Visual Learner, not too fond of reading and prefer seeing pictures.
c. Imaginative, capable to imagine the historical event through the information provided to the media.

## 2     Research Methods

The author uses The Big6 method by Mike Eisenberg and Bob Berkowitz. The Big6 method is used for information related problems [5]. The 6 steps used begins with Task Definitions, Information Seeking Strategies, Location + Access, Use of Informations, Synthesis, and ended with Evaluations.

The author chose to do interview with the head of the Negeri Rempah Foundation, visit and observe the Jakarta Maritime Museum, and read existing journals. The author also observe media about the spice route that existed before such as virtual museums, and book from the Negeri Rempah Foundation. The design process was influenced by focus group discussions with the target audience, visual reference studies, as well as technical reference studies.

## 3     Designing Strategy

The author's consideration on choosing the right media is develop from Dale's cone of experience theory. Interactivity level of the reader will affect the amount of informations received [6]. Therefore, pop-up book is chosen as the main media. The author collects information from books and sites about the spice route for the book's content. These are the author's design process:

### 3.1    Keywords

The author gets three keywords after making a mind map. Those keywords are exploring, proud, and interactive. Exploration is obtained from the journey done by the ancestor in spice trading and how the readers explore or interact with the book contents. Proud is associated with the large role of Indonesia and its spices for the world. Interactive is associated with the interactivity of pop-up books.

### 3.2    Big Idea

Keywords developed into the big idea "An interactive way to explore the proud history of the spice trade". The book is expected to be able to convey the message about how impactful the spice trade is on civilizations around the world from various fields. Thus, make the reader proud that Indonesia plays a big role as one of the largest spice-producing countries.

### 3.3    Communication Concept

The tone of voice in this pop-up book is communicated in a storytelling style. The reader is invited to imagine the past and explore the history of the spice trade through the selection of narrative texts. The narrative is told from an Indonesian point of view to give the reader a sense of pride with a light delivery. The author conducts a Focus Group Discussion (FGD) with the target audiences, the participant agrees that historical events explained formally and seriously will create a distance between the reader and the content [7]. Readers will find it boring and don't feel involved in these events, supported by the FGD participants that prefer semi-formal approach. However, it should be noted that the use of semi-formal language needs its limits, to prevent the readers misunderstood the contents.



**Fig. 1.** Focus Group Discussion as an Attempt to User Test the Pop-up Book

### 3.4      Visual Concept

The author uses a stylized realism visual style. The stylized realism is suitable for presenting non-fictional topics to young audiences [8]. The author adds small details on the pop-ups and illustrations. The author uses shading and highly saturated colors. This pop-up book aims to give the impression of fun, exciting, and far from boring.



**Fig. 2.** The Mood Board Used by The Author. The Author Tries to Convey the Fun And Exciting Feeling Of Exploring The Spice Route.

The author uses these colors to represent things related to the spice route. The secondary colors are used for shading. The neutral colors are used as outlines and backgrounds on several pages. The use of colors with high saturation also helps one FGD participant who has color blindness [7].
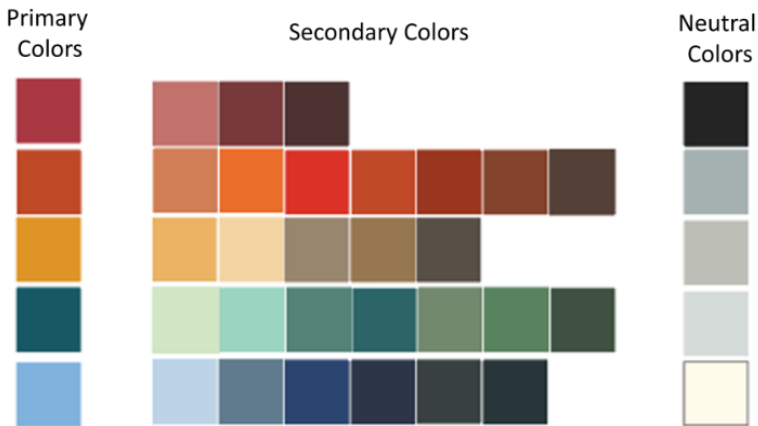


**Fig. 3.** The Author's Color Palette.

Reality Check typeface is chosen for the headlines. It represents the danger and excitement of the spice trade history while having a good legibility. Made Tommy Soft is chosen for the body text because of its legibility and soft shapes. Text size with the best legibility level is 9 to 12 points for a reading distance of 30 centimeters [9]. Supported by this statement, the author uses a size of 12 points and a spacing of 16 points between lines.

**REALITY CHECK**

**REALITY CHECK**

**REALITY CHECK**

Made Tommy Soft

Made Tommy Soft

Made Tommy Soft

**Fig. 4.** Typefaces The Author Use. Reality Check Used as Headline; Made Tommy Soft Used as Body Text. Both Are Displayed In 50 Point, 30 Point, and 12 Point.

## 3.5    Book Specification

The pop-up book is 21 centimeters wide by 28 centimeters high when closed. This size provides the area for a large pop-up to be closed perfectly, and provides enough space to fit more text with visuals. The author uses an art paper with a thickness of 210 gsm. Without being laminated, 210 gsm art paper already has a plastic layer on it so it has better protection against glue and water errors.



**Fig. 5.** Comparison between 210 GSM (Left) and 250 GSM (Right). Opened (Top), Closed (Middle), and Spine Wrinkle Comparison (Bottom).

### 3.6     Pop-up Book Contents

The content must be relevant to the target and capable to describe the big picture of the spice route to young audiences [3]. The content for the pop-up book was obtained from the Negeri Rempah Foundation book combined with articles on the Ministry of Education and Culture's spice route website and arranged chronologically.

**Table 1.** Content for the Pop-up Book

| Spreads | Theme | Details |
|---|---|---|
| First Spread | The history of the spice trade in pre-literate Indonesia. | Sailings of the pre-literate Austronesian peoples |
| | | Cloves and camphor usage in pre-literate Indonesia |
| | | The beginning of the Indonesian maritime activities |
| Second Spread | The use of spices in ancient civilizations around the world and how spices affect people's lives. | The use of spices in health, beauty, and religious fields |
| | | History and usage of frankincense and cinnamon in ancient civilization around the world |
| | | Spices effect on people social status |
| Third Spread | The spice trade in the Hindu and Buddhist era | The spice trade influence on the development of sailing technology |
| | | Hindu-Buddhist kingdoms effort in maintaining the security of spice trading |
| | | History and usage of sandalwood |
| Fourth Spread | The spice trade in the era of the Nusantara Islamic empire | Malacca as the center of the spice trading |
| | | Nusantara visited by world famous explorers |
| | | History and usage of black pepper |
| | | The role of spices in the culinary field |

| Fifth Spread | The arrival of Europeans and their motivation to get spices | Efforts and impact of the spice monopoly by the Europeans |
| --- | --- | --- |
| | | History and usage of nutmeg |
| Sixth Spread | Usage and potential of spices and their route in the present day | Development of spice route tourism by the ministry |
| | | Examples of processed spice products |
| | | Spices as a tool for Indonesia's cultural diplomacy |

## 3.7    Pop-up Techniques

Techniques are developed from the pop-up books used as the discussion topic for the author's FGD [10]. The complex pop-up technique has greater appeal to the target audience and helps them visualize historic objects [7]. This book contains a small spread that acts as an add-on spread. This system strengthens the exploration keyword by enhancing the reader's curiosity about what the add-on spread contains. The topic of each add-on spread is still related to the main spread. In total, the author uses 8 basic pop-up techniques which are as follows:

1. Spheres. This technique is used to describe round objects like the globe in the first spread that shows the spice routes around the world or the inside of a nutmeg in spread five.



**Fig. 6.** Sphere Pop-Up Technique Implementation

2. Multiple layers. This technique uses several layers of paper and works by pivoting on 90 degrees bent. This technique used to describe Austronesian voyages, spices

for mummification, war ransom gold and silver which were equivalent to spices at that time, and also the spice market during the Islamic sultanate period.



**Fig. 7.** Multiple Layers Technique Implementation

3. Rising v-fold. This technique gives the pop-up a motion toward the reader when opened. The author implies this technique on camphor, frankincense, and pepper pop-ups.
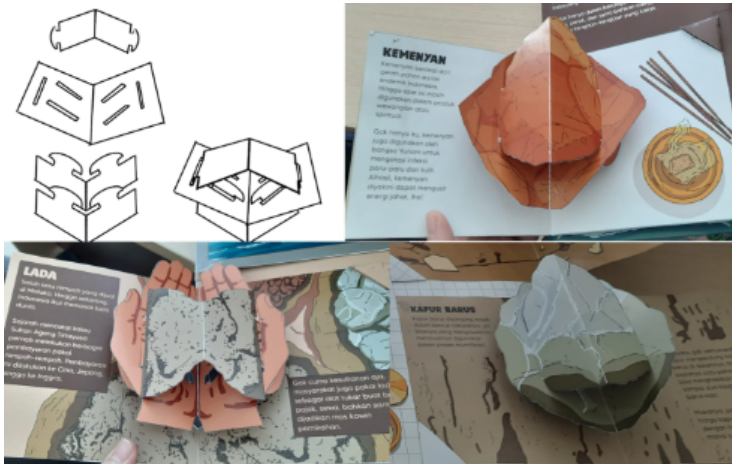


**Fig. 8.** Rising V-Fold Implementation

4. V-fold/zig-zag fold. The v-fold technique uses an angled part placed on the spine of the book, while the zig-zag fold technique uses 2 v-folds that are placed crosswise. This technique gives the pop-up a standing motion when it is opened.

**Fig. 9.** Normal V-Fold Technique (Above) and Zig-Zag Fold (Below) Implementation

5. Arm/wing extensions. This technique uses v-fold as its platform. This technique gives wing-like movement when opened. The author implies it for long objects to save space, like cinnamon for example.
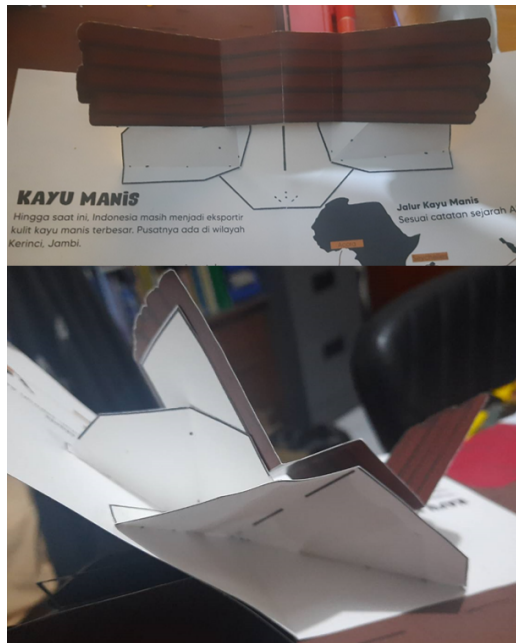


**Fig. 10.** Arm/Wing Extension Pop-Up Is Combined with A V-Fold as Its Platform

6. Moving arm. The moving part of the pop-up is attached to another moving part of the pop-up. In this pop-up book, the author uses the moving arm technique to describe Indonesian sailors at that time scooping food. In this case, rendang as their sailing meal.
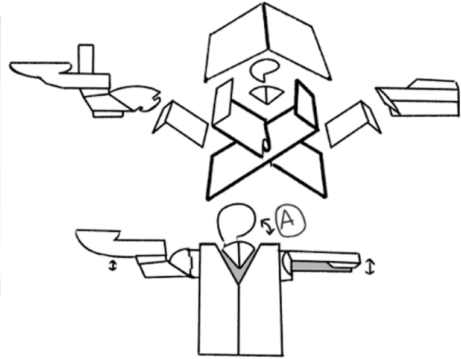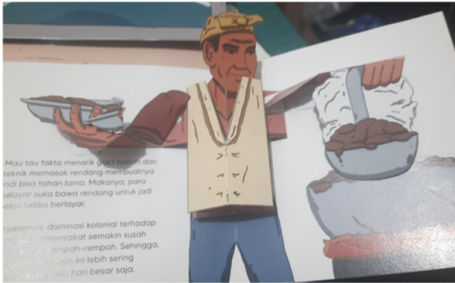


**Fig. 11.** Moving Arm Technique Implementation and Technique Movement Visualization

7. Diagonal floating plane. This technique provides a rotating motion when the pop-up is opened. The author uses this technique to portray a document box in the past. Inside is a top-secret map of the spice trade. In addition, this technique also automatically opens the box lid when the spread is opened.



**Fig. 12.** Diagonal Floating Plane Technique Implementation

8. Magic box. This technique is very rigid, so the authors use this technique for com-
   plex pop-ups. For example, the djong ships, rendang and soto dish, also as a frame
   for the sphere technique.
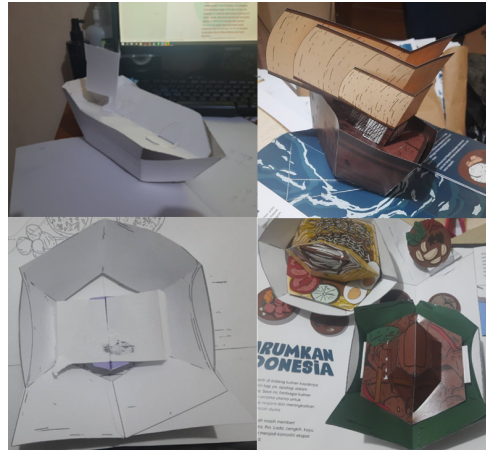


**Fig. 13.** Magic Box Pop-Up Technique Implemented. The Magic Box Act as A Frame (Left)

### 3.8    Illustration Process

The illustration style that the author uses refers to the previous visual references. Not
only applied for the spreads, illustrations are also applied to pop-up parts that are going
to be assembled. After scanning the prototype part, the author traces the shape and begin
to add illustration. The outline helps to give details even on a small scale.
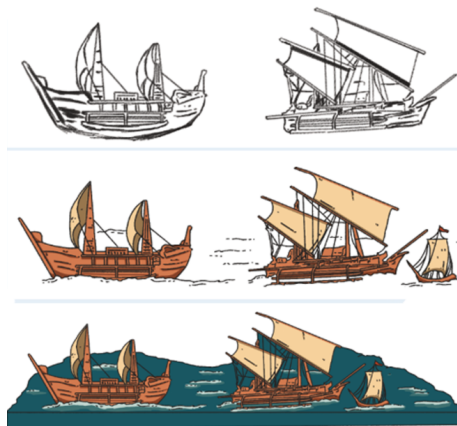


**Fig. 14.** Illustration  That Are Implemented as A Pop-Up Part for The Fourth Spread About
Malacca

## 3.9    Grid

The writer uses a modular grid for the main and add-on spread. The margins that the author uses are 1 centimeter. The author uses a module with a size of 1x1 centimeter with a 0.2 centimeter gutter. This grid makes the placement of content and visuals more flexible. Thus, giving a chance to develop the pop-up shape and size [11].
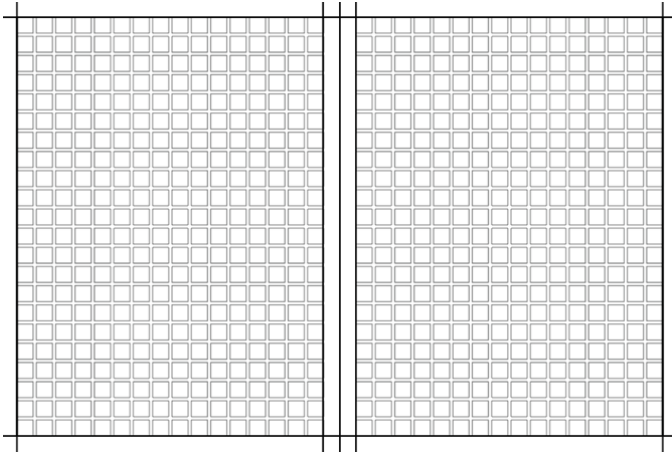


**Fig. 15.** Modular Grid Used for The Main Spread

The add-on spread has three pages with 1 centimeter margins in it. One page has ten columns and ten rows. Each module has a size of 1x1 centimeter and 0.2 centimeter gutter.
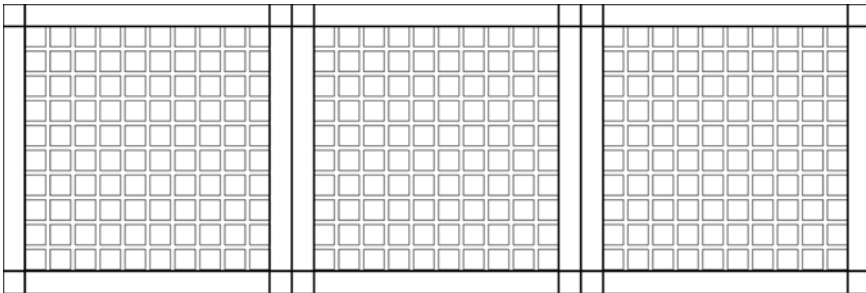


**Fig. 16.** Modular Grid Used For Add-On Spread

## 3.10    Layout

The spread designs differ from one another according to the topic. Headlines and text are always put on the left side of the spread, following the Indonesian common reading flow. The design of the headline made to attract the reader's attention and set to be the

highest text hierarchy. The illustration sizes vary to provide a visual hierarchy between add-on spreads and help provide a reading flow.
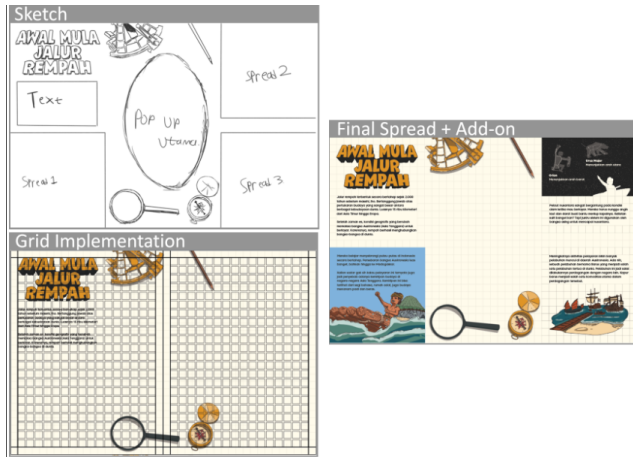


**Fig. 17.** Author's Process in Designing The Main Spread

The add-on spread has a size of 13 centimeters x 39 centimeters. This spread will be divided into three pages, with one page being the front. On spreads three, four, and five. The front page becomes the headline and text area for the main spread.
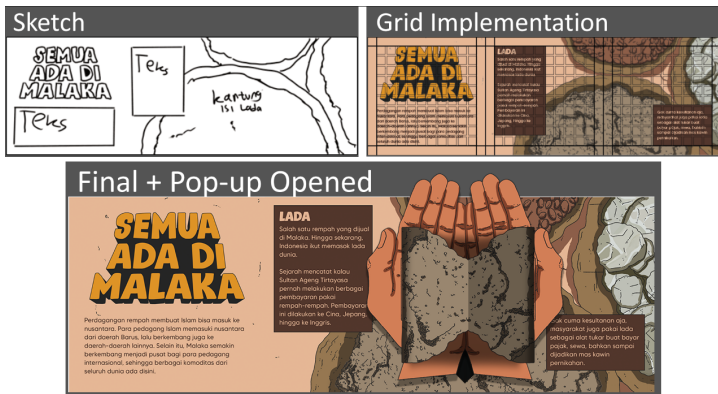


**Fig. 18.** The Author's Add-On Spread Designing Process

### 3.11   Cover Design

The author uses a different modular grid in designing the cover. The cover measures 49 centimeters long by 29 centimeters high. On the bottom of the back cover is an area to put the copyright text and the ISBN barcode. The spine of the book is 5 centimetres wide. On the front cover there is the author's name, the publisher logo, and also the Negeri Rempah Foundation logo which helps with content. Inside the front cover is a

copyright spread, and the author's profile inside the back cover. The pop-up book will use accordion binding with a width of 5 centimetres and a height of 28 centimetres per fold area. these folds will be made 7 times.



**Fig. 19.** The Author's Cover Designing Process

## 4      Analysis

### 4.1      Technique, Material, and Contents of the Book

The author still has difficulty perfecting all the pop-ups to have the same quality. Also, a folding and gluing pattern guide is a must to prevent quality and performance issues between pop-ups. The use of add-on spreads allows writers to include more content and more pop-ups. Thus, increasing the interactivity and playability of the book. The use of art paper able to reduce the production cost of one book to only IDR 230,000. The target audience is willing to pay more than IDR 250,000 for a pop-up book [7]. The author must filter what information will be included in the pop-up book because of the area limitation.

### 4.2      Layout Analysis

The modular grid provides flexibility for content placement [11]. Thus, making contents still readable and not blocked by the pop-up even when it's opened. The layout is done by placing the pop-up in the middle of the page, this provides a symmetrical balance in the design. However, in the third and sixth spread, the pop-ups give an impression of asymmetrical balance and give dynamic feelings in the design. The placement of the main pop-up in the middle also emphasizes the topics discussed in the spread in question. Visual hierarchy is achieved by using different illustration sizes and headline starting from the left side.

### 4.3      Visual and Typography Analysis

The small details in the illustrations support the exploring keyword by inviting the reader to explore and see the small details. In addition, the visuals help create a comic-like scenario that invites readers to imagine the historical event. Following the target's psychographics, which are imaginative and visual learners. However, the colours are not screen correct. So, adjustments are needed by increasing the brightness and contrast to reduce the errors.

The majority of the spreads in this pop-up book have a solid colour background. Thus, giving a white space for the readers. Contrast is shown by the illustrations or fully illustrated pop-ups compared to the solid plain background. In addition, this design also provides emphasis on what topics are discussed in the spread and increase the legibility of texts.
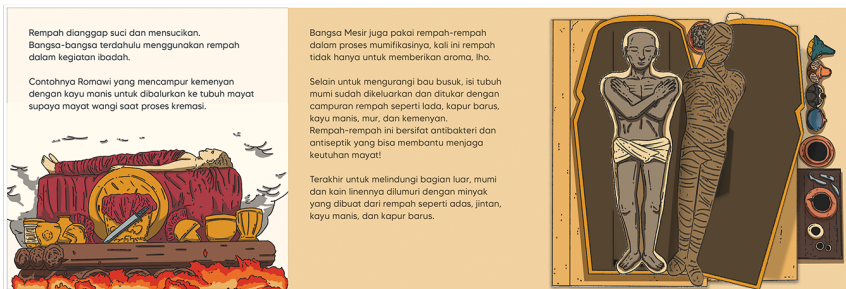


**Fig. 20.** White Space and Contrast Achieved In An Add-On Spread

## 5      Summary

There are very few media that explain the big-picture of the spice route [3]. The pop-up book is chosen because the more interactions a person does while learning, the more information will be absorbed and stored in their memory [6]. "An interactive way to explore the proud history of the spice trade" is the big idea of this study. The Big6 method is used for the design process in creating an edutainment media that provides the spice routes narration into one medium.

Modular grid system is implemented to give flexibility in the design process. Thus, balance, white space, hierarchy, and unity are achieved in the design to help the reader enjoy the book. The book uses a stylized realism visual style that suits conveying non-fiction topic to young audiences [8]. Art paper with 210 gsm is chosen because of its thickness and plastic layer. Combined with a hardcover and accordion binding. This book has 6 spreads with a total of 22 pop-ups.

who helps in searching the data needed and provide emotional support. Last but not least, the author's lecturer and second writer Mrs. Rani Aryani Widjono that guide and give input on the writer's decisions.

# References

1. S. Ng, "Sejarah Jalur Rempah: Bukan sekadar perdagangan," 30 Agustus 2021. [Online]. Available: https://www.alinea.id/nasional/sejarah-jalur-rempah-bukan-sekadar-perdagangan-b2c8f96h0. [Accessed 5 September 2022].
2. N. Zubaidah, "Warisan Budaya Dunia Unesco, Sejarah Jalur Rempah Harus Masuk Pembelajaran Sejarah," 2 Oktober 2020. [Online]. Available: https://edukasi.sindonews.com/read/183920/212/warisan-budaya-dunia-unesco-sejarah-jalur-rempah-harus-masuk-pembelajaran-sejarah-1601637037. [Diakses 5 September 2022].
3. D. Kumoratih, Interviewee, *Wawancara Mengenai Jalur Rempah.* [Interview]. 14 September 2022.
4. B. Setiawan, M. W. Nurrochsyam, S. Biantoro, I. Santoso and U. Wicaksono, "Internalisasi kesadaran sejarah jalur rempah sebagai dukungan untuk pengajuan warisan budaya dunia ke unesco," 2020. [Online]. Available: https://pskp.kemdikbud.go.id/assets_front/images/produk/1-gtk/materi/Sesi_II_K4_Internalisasi_Kesadaran_Jalur_Rempah_-_IGM_Budiana_Setiawan_dkk.pdf.
5. J. and K. V. O'grady, A Designer's Research Manual, Rockport Publisher, 2017.
6. S. J. Lee and T. Reeves, Edgar Dale and the Cone of Experience, EdTech Books, 2018.
7. M. R. Fimanditya, Z. Nabilla, T. A'inurrohmah, F. J. and F. , Interviewees, *Focus Group Discussion on Testing Pop-up Book as the Primary Media Choice.* [Interview]. August 2022.
8. A. Male, Illustration A Theoretical & Contextual Perspective, AVA Publishing, 2007.
9. R. Carter, B. Day dan P. Meggs, Typographic Design: Form and Communication, John Wiley & Sons, Inc, 2012.
10. R. Sabuda and M. Reinhart, Encyclopedia Prehistorica Sharks and Other Sea Monsters, Massachusetts: Candlewick Press, 2006.
11. D. Bosler, Creative Anarchy: How to Break the Rules of Graphic Design for Creative Success, HOW Books, 2015.
12. Y. Syukur, D. Kumoratih, I. Nugraha, B. Kushardjanto and P. Wanastri, Tales Of The Lands Beneath The Winds, Negeri Rempah Foundation, 2022