Garudeya Illustrated Digital Book as a Supporting Media to Children Learning

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Abstract. The lack of children's reading interest in historical heritage books is because the visualization of books provided by the school library is less attractive. This study aimed to design a digital illustrated Garudeya book as a learning support medium for elementary school students in Malang City. This study uses the design thinking method by involving the reader in the empathize, define, ideate, prototype, and test stages. The results of data analysis obtained the word playful as a design concept originating from the target audience of children. This concept is used in most digital book designs illustrated by The Story of Garudeya. The Garudeya Storybook tells the story of Garudeya, who saves his mother, Sang Winata, from being enslaved by his younger brother Sang Kadru because he lost a bet when guessing the color of a horse's tail. The Kadru deliberately cheated by painting the color of the ponytail black to win the bet. This illustrated digital book is essential to use as a learning support medium so students can easily understand Indonesian heritage. In addition, it can also be used as a digital reference to introduce Indonesian cultural heritage globally.

1 Introduction

The lack of children interest in reading books, especially historical heritage books has caused Indonesian culture to be increasingly abandoned. One of the reasons is the books provided by the school library are less attractive. The several research results show that humans can have long-term memory because they often read books. Human visual memory is considered stronger than human echoic memory. Christof Kuhbandner (2020) says that a long-lasting word-for-word representation of a book read can be stored in long-term memory even though subjective phenomenal experiences are absent. In addition, books can also shape children's emotions, motivation, language skills, literacy, and empathy. A researcher in the field of child psychology, books can shape emotions and motivation because children's books often present social and emotional experiences [1].

The books provided by the school library are generally books that contain writing on a white paper background. Children are generally more interested in things that are colorful and have lots of pictures, including books to read. Children will tend to choose books that have unique and colorful pictures on the cover page, rather than books with a monotonous in cover and color, such as the use of illustrations in the Garudeya illustrated digital book. Illustrated books can make it easier for children to read even though they can't read letters yet. Children are free to imagine every story through the illustrated plots and also do not feel bored to read the book over and over again.

Malang is one of the tourist destinations in East Java which has a variety of tourism ranging from nature to historical tourism, such as historical heritage sites. One of the famous historical heritage sites comes from the Singosari Kingdom which is still visited today, namely Kidal Temple. This temple has its own uniqueness compared to others because of the Garudeya relief carved on the temple body which tells the Garuda story. In addition, Garudeya relief has its own characteristics in the ornament section which displays animal ornaments and can still be seen clearly on the Kidal Temple's body to this day. This makes Kidal Temple special and is a consideration for researchers to apply ornaments in the form of illustrations that can support the Garudeya story.

Garudeya relief has an interesting story and moral values that can tell the teachings of good and bad. Children's interest in visual displays makes the application of the form of Kidal Temple ornaments to digital books, which is expected to be able to re-invigorate children's interest in Indonesian historical heritage. This illustrated digital book is also an innovation form of book in the digital era, where children's interest in reading books begins to shift to smartphones. Therefore, this research will use this illustrated digital book with eBook output as the main media which can later be accessed on the East Java
Learning media has various meanings. According to Munadi [2], learning media is something that can convey and channel messages from sources, so as to create conducive learning environment and recipients can carry out an efficient and effective learning process, which is called books. In the midst of technological sophistication, many learning media have been turned into eBooks. eBooks are relied on devices such as computers, laptops, tablets, cell phones, and other media, and use certain software to read them, have not stopped books as informative media that are still popular.

EBooks also have the advantage of being easy to carry, read, anytime and anywhere [3].

Based on the previous description, it is necessary to make a Garudeya illustrated digital book which is intended for children in order to regenerate children's interest in reading books with more interesting visuals and media. It is also to re-popularize the Garudeya story in Kidal Temple to Malang people and other cities, so as to help preserve Indonesia's cultural heritage in the future.

This study is framed by the literature related to cartoon drawing techniques, typography and colors used for children. These three literatures were used in the design of Garudeya's illustrated digital book. The theory of cartoon drawing techniques for children (Wijethilaka, 2020: 3) explains that from an early age a child's brain is always looking for new experiences and cartoon drawing techniques in a child's brain can quickly and automatically follow the plot of a film or book and try to imitate it. Typography in school books and children's literature for primary education prioritizes sans serif fonts because they are considered simpler than serifs (Bessemans, 2016:19). Color (Ravishankar & Kumar, 2020: 227-230) is an important feature in children's lives because children are sensitive and easily attracted to colors, especially bright and warm colors.

2 Methods

To design a digital illustrated Garudeya book as a media to support children's learning is based on the reduced interest in children's reading of books from Indonesian historical heritage, one of which is Candi Kidal. Researchers used the design thinking method to design digital illustrated books, starting from empathize, define, ideate, prototype and test. Design thinking is a user-oriented approach that systematically applies methods for observation, questioning and brainstorming as well as other moderation techniques in individual phases [4]. Within the scope of digital illustration book design, design thinking does not only focus on what is seen and felt but also the reader's experience. It is used to get the most effective and efficient solution to solve complex problems.

As an initial stage, empathize seeks to understand the problems experienced by readers, namely elementary school students, so they can feel and find solutions to these problems. The researcher conducted interviews with the informants, namely the manager of the Kidal Temple in Malang who understands the stories from the temple reliefs and elementary school students. Then make observations at the research location, namely Kidal Temple which is in Tumpang District, Malang Regency. The data that has been obtained is analysed and understood from the various insights that have been obtained at the define stage to determine the problem statement as the main point of view or research concern. The statement of the problem in this study is in the form of an illustrated digital book containing the story Garudeya on the reliefs of Kidal Temple in Malang.

At the ideate stage, the researcher carries out a transition process from problem formulation to problem solving. In this stage the researcher concentrates on generating ideas or ideas as a basis for making a prototype design that is made. The researcher collected several references regarding the design of illustrated books, such as layout, typography, colours, photos or illustrations, and other graphic elements used in conceptualizing Garudeya's digital illustrated books so that they become interesting learning media. From the concept that has been formed, the researcher makes a visualization of the Garudeya digital illustration book in the form of a sketch for each page that is adjusted to the concept.

The initial visualization results are given details, colours and shading as a prototype stage so that Garudeya's illustrated digital book looks more attractive. The finalization of the Garudeya digital illustration book was validated by three experts in the temple community by conducting a Forum Group Discussion (FGD) regarding the temple components used in the Garudeya digital illustration book to obtain appropriate feedback to improve the design. Then the researcher made a research instrument by looking for signs of people's interest in historical heritage from previous studies. The researcher determined the number of people used at the testing stage, namely ten people with a measure of people's interest in historical heritage and people's attractiveness through visuals.

In the final stage, the researcher conducted a test (test) on ten people to collect various readers' feedback from the final design that had been formulated in the prototyping process. This process is life-cycle in nature so that it allows repetition at the design stage if there are errors or some improvements from the feedback that has been given.

3 The design concept of Garudeya illustrated digital book

In designing an illustrated digital book, it is necessary to have a goal that is in accordance with the target audience. The purpose of designing this illustrated digital book is to have an influence on the target audience so the message can be conveyed properly. The values of kindness in the Garudeya story can be an easy learning support medium to introduce cultural heritage by displaying the characters in the story. The Garudeya story is not just a mythological story that exists in the teachings of Hinduism, but there are several parts of the
The design concept is playful and it used comes from the observations of the researchers to fifth graders at Madrasah Ibtidaiyah Manarul Islam Malang who are more interested in the use of illustrations and various colors that support the story on each page of the illustrated digital book. The application of the playful concept can be seen from the use of cartoon image styles, various colors, and easy-to-understand language. When children read this illustrated digital book, they feel happy and can imagine through the images displayed.

Readers are presented with a digital display in the form of a PDF file that is used in the Garudeya illustrated digital book, making it more interactive and efficient when reading. The use of cartoon illustrations in the design is expected to make it easier for students to imagine storylines and stimulate the students' interest in reading books. Also, this is making it easier to remember the story. In addition, cartoon illustrations can help in communicating the message of the story to the audience who reads through digital books that can be read anytime. This helps in growing interest in reading textbooks in elementary school students.

### 4 Creative strategy

#### 4.1 Garudeya illustrated digital book size and pages

- a. Book Type: Learning Book
- b. Dimensions: 21 cm x 29.7 cm
- c. Number of Pages: 33 pages
- d. Page Orientation: Landscape

#### 4.2 Languages

The language used in this illustrated digital book is Indonesian because the main target audience is Indonesian elementary school students and it is the instruction language in all types of education levels, from kindergarten to higher education. The use of Indonesian which is easy to understand and presence of new vocabulary can effect what is conveyed by students, and make it easier for students to read and absorb the messages in the stories conveyed. It could be easier to introduce Garudeya stories as Indonesian cultural heritage.

#### 4.3 Visualization techniques

The visualization technique used in designing this illustrated digital book is to use a cartoon illustration style made digitally. The use of vector cartoon illustrations can be converted into various sizes and printed at different resolution levels without losing detail and image sharpness. According to Wijethilaka, from an early age, children's brains are always looking for new experiences in a cartoon style because a child's brain can quickly and automatically follow the storyline of a film or book and try to imitate [5]. In addition, the character or setting of the place used is adjusted to the pre-selected concept.

In addition, the researcher uses several design software that helps in designing the characters and story of Garudeya illustrated digital book. Some of the software used in this illustrated digital book include (1) Adobe Photoshop and Medibang; used to illustration sketches Garudeya story on each page. (2) Adobe Illustrator; used to complete the drawing and color each illustration sketches of the Garudea story and also add narrative text to support the story. (3) Adobe Acrobat Pro; used to display the results of illustrated digital book and read every story that is on each page.

#### 4.4 Typography

Typography in school books and children's reading for basic education must be clearly defined. Often school books and children's literature prioritize sans serif typefaces because they are believed to look simpler than serifs. Sans serif initially also introduced users to 'baby characters' whose letterforms were believed to be easier for children to read [6]. The typography used in the design of this illustrated digital book is in accordance with the design concept, which is playful. It comes from the intended target audience, namely children so the font type is right to represent them. There are two font types used in designing the Garudeya illustration digital book, namely Amboqia Boriango Regular and Calibri.

Based on the considerations that have been made of the suitability of the type of typography and the concept, the typography used has a slightly rounded shape but has fins that can represent historical elements, but still looks modern. In addition, the selected font type is also adjusted to the story character, storyline, ease of reading and easy to remember by children aged 10 to 12, especially fifth graders of elementary school.

The headline used in this illustrated digital book is "Kisah Garudeya" based on the core story of Garudeya which is dominated by stories about Garudeya and this selection is not just thinking about long or short, but easy to remember, interesting and informative for school students base. Whereas, the tagline uses the words "pada Relief Candi Kidal" which can reflect the location of Garudeya story engraved on the Kidal Temple reliefs in Malang district. In addition, this tagline can clarify the use of the Garudeya story taken from one of Kidal Temple reliefs, Malang district, East Java, Indonesia.

Based on the brainstorming results that has been carried out, the font type used in the headline and tagline of this illustrated digital book comes from Serif font family with modifications to the Amboqia Boriango Regular font character which is adapted to the design concept. This font was chosen because it is easy to read and suitable for elementary school students.

#### 4.5 Colors

Color is an important feature in children's lives because children are sensitive and easily attracted to colors,
especially bright and warm colors. In addition, color can also act as a tool for children to express their emotions. In research conducted by Ravinshankar, the colors yellow, pink and blue are associated with positive emotions. Meanwhile, red and black are associated with negative emotions for children [7].

Researchers used nine different colors in the design of Garudeya illustrated digital book. The choice of this nine is in accordance with the design concept taken, which is playful. It used to draw something fun, with the hope that students who read this illustrated digital book feel happy and can stimulate students’ interest in reading books. These colors can also describe a modern impression on a book that supports learning for elementary school students.

4.6 Synopsis

Once upon a time, there was a Maharsi named Bagawan Kasyapa as the son of Bagawan Marici, the grandson of Lord Brahma. He had fourteen daughters, named Aditi, Diti, Danu, Aristi, Anayusa, Kasa, Surabhi, Kadru, Ira, Parwa, Mregi, Krodhawasa, Tamra, and Winata. Among the fourteen daughters, Sang Winata and Kadru had no children. They begged Bagawan Kasyapa for mercy, Sang Kadru begged for a thousand children while Sang Winata only begged for two.

Bagawan Kasyapa granted the request, Sang Kadru was given a thousand eggs and Sang Winata was given two eggs. A few days later all of Sang Kadru's eggs hatched and snakes were born, while Sang Winata's eggs had not yet hatched. The cause of Sang Winata's impatience, one of the eggs was broken and a half-finished child was seen. The child was named Sang Aruna because he did not have legs and arrows. He was angry and cursed his mother to be enslaved by her own sister, namely Sang Kadru. Later, Sang Aruna’s brother named Garudeya, who will save his mother from slavery.

4.7 Characters

4.7.1 Garudeya

Garudeya is the main character who always appears in every story. He is depicted with a golden body, white face, red wings, beak and wings similar to an eagle but his body is like a human, and his size is large so that it can block the sun. However, researchers modified the colors found on Garudeya's body and wings, which initially had a golden body and red wings to a white body and brown wings. This change was made to make it easier to accept and attract the attention of elementary school students while reading. The visualization of Garudeya which is described as having a large body like a human, having a beak and wings similar to an eagle, using a sign on the head in the form of a royal hat, shorts to cover Garudeya's vital organs so that children can read it and Javanese clothing accessories in the form of a necklace because Garudeya story comes from Java. However, Garudeya's character does not use footwear to look like an eagle in general.

4.7.2. Sang Winata

Sang Winata is Garudeya's mother figure who became the main character before Garudeya was born. Sang Winata is only seen in a few scenes, she is included as one of the main characters and important figures in this illustrated digital book. The depiction of Sang Winata's character is a figure that is beautiful, friendly, polite, kind, but impatient because she breaks one of his eggs. The visualization depicting Sang Winata is beautiful, tall, and slender, she has got a friendly face, long hair on top of which some hair is rolled up, wears clothes and accessories that mark royal attire, such as markers on the head and gold colored accessories.

4.7.3. Sang Kadru

Sang Kadru is Sang Winata's sister who is also the main character who often appears in the story. Sang Kadru is also the mother of the snakes and she described as a beautiful figure, but cunning. The visualization of the depiction of Sang Kadru which is tall, and slender, she has got an evil facial expression, has long hair on top of which some hair is rolled up, uses red lipstick, wears clothes and accessories that mark royal attire, such as markers on the head and gold colored accessories.

4.7.4. Snakes

The ten snakes are Sang Kadru’s children and they are described as cunning, evil, but obedient to Sang Kadru's orders. The character visualization of the snakes is an animal in the form of a snake in general, but the researchers made modifications to the snake's short body shape. The snakes also have evil and cunning faces, which match the characters shown in each scene, namely doing evil and devious thoughts to Sang Winata and Garudeya.

5 Garudeya illustrated digital book

5.1. Storyline

It is said that there was a Maharsi named Bagawan Kasyapa, son of Bagawan Marici, grandson of Lord Brahma. Bagawan Kasyapa had fourteen daughters, named: Aditi, Diti, Danu, Aristi, Anayusa, Kasa, Surabhi, Kadru, Ira, Parwa, Mregi, Krodhawasa, Tamra, and Winata. The fourteen daughters of Bagawan Kasyapa, only Sang Winata and Sang Kadru have no children. Then they both begged Bagawan Kasyapa for mercy to give them a child. Bagawan Kasyapa granted both requests. Sang Kadru was given a thousand eggs, while Sang Winata was given two eggs. Then they take good care of the eggs.

A few days later, a thousand eggs belonging to Sang Kadru hatched, and the Snakes were born. The foremost are the Anantabhoga, the Vasuki, and the Taksaka. When she found out that all of Sang Kadru's eggs had...
hatched, Sang Winata was impatient and broke one of the eggs. Seen a child who is only half-finished, the upper body is complete but from the waist down there is no. He is angry because it was hatched prematurely. He cursed his mother to be enslaved by Sang Kadru excessively. The child was then given the name Sang Aruna, because he did not have legs and thighs. Then Sang Aruna left his mother, and became a courier for Lord Surya's chariot. There is one other item that is hoped to be able to free Sang Winata from the slavery of Sang Kadru, who will be named Garudeya. On the sunny day, Sang Winata and Sang Kadru heard the news of the horse appearance named Uccaihsrawa. Without realizing it, Sang Kadru's children had seen the horse, but did not tell their mother.

Hearing the news, Sang Winata and Sang Kadru made a bet. Whoever guesses wrong will become a slave. Sang Winata guessed that the horse was completely white. Meanwhile, Sang Kadru guessed that the horse had a white body and black tail. Then they planned to see the horse color the next day, as well as determine who would be the winner. Sang Kadru told his children about the bet with Sang Winata. The snakes realized that their mother would lose because the horse body's and tail color was white. But they didn't tell him. Sang Kadru, who was worried because he was afraid of losing the bet, thought of another way to beat Sang Winata. Sang Kadru sent his children to sprinkle snake venom into the horse's tail to turn it black. But the children refused because they felt their mother's actions were inappropriate. Sang Kadru was angry and threatened to curse his children to die in the fire during the snake sacrifice ceremony held by King Janamejaya. Reluctantly, the snakes finally carried out their mother's orders. They sprinkled snake venom into the tail of Uccaihsrawa's horse and instantly the tail color turned black. The next day, Sang Kadru won the bet and Sang Winata had to become Sang Kadru's slave.

Meanwhile Sang Winata's egg hatched, and a mighty bird named "Garudeya" was born. But he did not see his mother near him. Garudeya looked for his mother everywhere. And he found his mother being enslaved by Sang Kadru. He heard Sang Kadru asking his mother to take care of her snakes. Garudeya helped his mother take care of the snakes, but the snakes were very agile running here and there, and he was getting overwhelmed. Garudeya asked the snakes what he could do to redeem his mother's slavery. The snakes replied, if he was able to bring Tirta Amerta before the snakes, then his mother would be freed. So Garudeya agreed, in order to free his mother.

Long story short, Garudeya discovered the whereabouts of Tirta Amerta. When Garudeya was about to take the water, Lord Vishnu came. He said, "If you want the tirta, then ask me. I'll definitely give it to you". The Garuda replied, "It is not appropriate for me to ask you, because you are more powerful than me. That's why give me another gift." Lord Vishnu said, "If so, I ask you to be my vehicle as well as the symbol of my banner". He gave Tirta Amerta to free his mother from slavery on the condition that after that Garudeya would become Lord Vishnu's mount. Then he agreed. When Garudeya was about to go with Tirta Amerta, Dewa Indra did not approve if the Tirta was given to the snakes. He assured that he would immediately return the Tirta Amerta. Garudeya arrived at the abode of the snakes. They were excited to drink the Tirta Amerta immediately, but he said that the tirta could be drunk after the snakes had bathed first. Garudeya placed the Tirta Amerta jar on the grass. Enthusiastically the snakes bathed to clean themselves. Meanwhile, Garudeya secretly took Tirta Amerta to return it to Lord Vishnu.

After bathing, the snakes returned to Tirta Amerta's place to drink it. But Tirta Amrita doesn't exist. The snakes were disappointed and only found a few sparks of Tirta Amerta left on the leaves of the weeds. The snakes licked the leaves so that their tongues were cut and split open. The leaves of the weeds became holy because they got Tirta Amerta. Garudeya returned to Lord Vishnu to keep his promise. Lord Vishnu bestowed immortality on Garudeya for his courage and hard work in fighting for justice. Finally, Kadru lived in peace and the snakes (his children) also lived happily ever after.

5.2 The sketches of Garudeya illustrated digital book

The sketch of this digital book made in A4 size. The concept is playful with using cartoon drawing style, where it can attract children's attention to reading books and make it easier for children to understand Garudeya story which talks about religious things. This is used as a form of virtual literacy implementation which so far tends to be boring and seems rigid. Virtual literacy is able to create a world that is not limited by space and time, so that people can learn from various sources around the world. This unlimited world is often referred to as cyberspace, which is creating a new virtual or virtual space. In the world of literacy, virtual literacy is packaged in various forms of media that are no longer printed but digital, which are more interactive.

5.3 Prototype of Garudeya illustrated digital book

To attract children's attention, this digital illustration book is entitled “Kisah Garudeya pada Relief Candi Kidal” using the appropriate type of font and a cartoon drawing style. This produce pdf file as an output that can be obtained and accessed easily using students' smartphones, computers, and laptops anytime. The illustrations are given color varieties that are able to captivate children's eyes to continue reading. Supporting texts that will be included in each page are placed on the right and left sides, and are shaded behind the text for easy reading for children.
Pengantar


Garudeya dan hewan-hewan di hutan hujan selalu saling membantu untuk mencari makanan. Mereka selalu berbagi bagian makanan dengan satu sama lain.

Kisah Garudeya

Di dalam hutan hujan, Garudeya dan hewan-hewan lainnya selalu bermain dan berbicara. Mereka selalu bertukar cerita tentang kehidupan mereka.

Kisah Garudeya adalah cerita yang mengajarkan tentang kerja sama, persahabatan, dan keberanian.

Terjemahan:

Pengantar


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Kisah Garudeya adalah cerita yang mengajarkan tentang kerja sama, persahabatan, dan keberanian.


Membawa bagi hutan terbuka, Sang Wirasana dan Sang Ratu mendapatkan taman. Taman ini di dalam gambar di bawah ini.

Sang Wirasana membawa kuda tertanam di dalam taman, hanya notul ke hadapan taman. Sementara Sang Wirasana di dalam gambar di bawah ini.

Begitu tiba, setengah perang melawan. Membawa kuda yang berjalan menuju ke arah taman, hanya notul ke hadapan taman di ke arah taman. Sang Wirasana.
The results of Garudeya illustrated digital book were tested on 5C graders of Madrasah Ibtidaiyah Manarul Islam aged 10 to 12. This test was conducted to ensure this illustrated digital books have been made are in accordance with the design concept and are able to stimulate children's interest in reading textbooks. In addition, the researcher also want to get input from 5C graders regarding the advantages and disadvantages through a questionnaire form that is distributed to students after reading this illustrated digital book. The advantages of Garudeya illustrated digital book will be used as a design strengthening factor, while the shortcomings can be input to improve this illustrated digital book better.
6 Conclusion

The digital illustration book of Candi Kidal's Garudea Relief is very important to be used as a media to support learning in elementary schools to help students understand the history of Indonesia's heritage. In addition, this illustrated digital book can also be used as a digital reference to introduce Indonesian cultural heritage to foreign countries. Usually readers who contain culture only get a monotonous experience with a lot of writing and photos or images that are less interesting, but the digital illustration book of Candi Kidal Relief Garudea is able to provide a new and interesting experience for readers by using digital media and the presence of colored cartoon illustrations without losing their identity and original stories from Indonesian culture.

The emergence of a digital illustration book of Candi Kidal's Garudea Relief can create a new virtual space without country and time zone boundaries. By shifting the reality of direct experience of reading physical books into digital books, it produces a post-space phenomenon mediated through computers. This method is proof of the adaptability of academics in the post-pandemic era. A wider audience reach with digital books knows no boundaries and is able to make Indonesian culture known to other countries with a more attractive visual appearance.

Suggestions for the next voyage of illustrated digital books regarding Indonesian cultural heritage is to add audio and movement of objects and characters' bodies so that the display of the illustrated digital book is more interactive, and the contents of the next Garudea story are easier for readers to remember and understand.

References