

The Use of Children's Book Illustrations as Educational Media can Reduce Animal Scarcity

Esty Wulandari¹, Yemima Putri Mentari Sulistya Arini Daryanto²

¹(Department of Visual Communication Design, SebelasMaret University, Indonesia)

²(Department of Visual Communication Design, SebelasMaret University, Indonesia)

ABSTRACT : Indonesia's large land area makes it home to a wide variety of animals. For personal gain, many animals are hunted and even killed. Body parts of animals are used as accessories, consumed until they are collected, leaving scarcity in their wake. The research aims to make an illustrated children's book that educates children about saving and caring for endangered species. Children's book illustrations combine text and illustrations to tell stories. A descriptive qualitative approach is used in this study. The data obtained were in the form of observations, literature studies, responses of children aged 8-10 years in Surakarta City and interviews with endangered species experts at the GembiraLoka Zoo. The contents of the story raise the topic of threats to endangered species, their rescue and maintenance. The design of the book begins with conducting research, making predictions about the budget for making the book, creating a storyline, sketches and layout for the book "Exploring Time at the Zoo". With children's book illustrations, it is hoped that children will care more about the environment and love animals.

KEYWORDS -children's book, rare animals, illustration, education, rescue and maintance

I. INTRODUCTION

Indonesia is in the tropics and is rich in biological natural resources. Diversity must always be preserved and protected, where this is a shared responsibility between the government and the community. Forests not only provide for human needs, but are also home to countless species. Indonesia is in the world's spotlight regarding the trade in this endangered species. The trade in endangered species is still rife, being hunted for consumption or kept as exotic animals. The profits derived from the trade in endangered species are very tempting. There is a lot of demand and interest from within and outside the country for parts or organs of these endangered animals which can be used as medicine, cosmetics, accessories, fashion, or for personal consumption or collection (Puspitasari, 2022: 3).

The orangutan is a protected species under Indonesian and international law. Research by the Center for Biodiversity of the Max Planck Institute for Evolutionary Anthropology recorded that around 148,500 orangutans died over a period of 16 years. In addition, the population of this endangered animal is expected to shrink by 45,000 in 2050. When people feel afraid that orangutans will enter plantation lands to eat crops, killing and hunting in plantation areas is responsible for 70% of orangutan deaths (www.wwf.id/spesies/orangutan). The Sumatran tiger is on the verge of extinction due to being in an uncontrolled habitat, reduced number of species, and search. A 2008 report issued by TRAFFIC, a collaborative program of WWF and the World Conservation Agency, IUCN, to monitor wildlife trade found an open domestic market in Sumatra trading tiger parts. In the study TRAFFIC revealed that at least 50 Sumatran tigers were hunted each year in the period 1998-2002. The image of the Sumatran tiger, which is tough and dignified, carries a bad threat to it. Tigers are hunted for all parts of their body, from their skin, whiskers, nails, tusks, to their meat (<https://www.wwf.id/spesies/harimau-sumatera>).

Banning hunting activities by the government is not enough. Providing understanding to the community and awareness to protect the forest, preserve the environment and save animals is very important to

reduce animal extinction. Books about endangered species that are distributed widely in society mostly explain why animals experience extinction, threats to endangered species, and types of endangered species. As for children's story books, most of them contain stories about characters from rare animals. Based on this background, picture story books are the right choice as learning media for children to learn and understand the beginnings of animals experiencing extinction until they are rescued and cared for. This is intended so that children understand the importance of protecting the environment and loving animals.

II. LITERATURE REVIEW

2.1 Children's Book Illustration

Children's books have a very broad term. Children will develop cognitively, so each stage requires a different structure and organization of these children's books. Adapting to each stage and cognitive ability of this stage is important if we want the book we want to make meaningful, educational, and fun (Jones, 2018: 16).

2.2 Visual Communication Design Theory

According to Ibnu Teguh Wibowo in the book *Learning Graphic Design* published by BukuPintar Yogyakarta (2013: 96). Designs that emphasize beauty will be unattractive and therefore not communicative. Interesting or beautiful can be seen with the eyes (outward) or with the heart (inner), so a design will be attractive if it is beautiful to look at or the concept is creative. The beauty that is discussed here is more emphasized on the ability of the eye as a judge. In order to attract the eye (eye catching) knowledge of the elements in graphic design is needed. The sign system or sign system is a set of information media systems consisting of information signs, directions, and appeals. Providing image/visual elements can facilitate and provide convenience to visitors in finding information (Masnuna, 2021).

2.3 Endangered Animal Rescue

Animal rescue is one of the national programs in assisting the handling of wild animals as a result of law enforcement efforts in accordance with P.106/MENLHK/SETJEN/KUM.1/12/2018 concerning protected plants and animals. The campaign is directly carried out through wildlife rescue and coaching. Thus, hopefully there will be awareness from all parties to care so as not to hunt and harm animals so that the ecosystem chain remains sustainable.

III. METHODS

The type of research used is descriptive qualitative research. This type of qualitative descriptive research displays data as it is without manipulation or other treatments. The purpose of this research is to present a complete picture of an event or is intended to expose and clarify a phenomenon that occurs. Nothing but by describing a number of variables relating to the problem under study. This study interprets and describes data related to the situation that is currently happening, attitudes and views that occur in a society (Rusandi, 2021: 3).

IV. RESULT AND DISCUSSIONS

4.1 Interview Result

In Indonesia alone there are various kinds of endangered animals including the Sumatran Elephant, Sumatran Tiger, Bornean Orangutan, One-horned Rhinoceros, Komodo Dragons and so on. Pak Andi as the Education Section of the Department of Conservation at GembiraLoka Zoo explains:

“Sumatran tiger, Sumatran elephant and Bornean orangutan. The obvious threat is poaching, such as elephants for their ivory, tigers for their skin. In Sumatra and Kalimantan, there is often land clearing for oil palm. Orangutans are like pests. They are not migratory animals, so they will be there all the time. Even though the forest is turned into oil palm land, they are still there (Andi, personal interview, 1 October 2022)”.

There are many threats to animals, wild animals are being hunted and trapped for personal gain. In fact, in Sumatra tiger hunting is a separate job. There have been some hunters who have stopped as well. Orangutans, Sumatran tigers, Sumatran elephants are top predators so only humans hunt them.

GembiraLoka Zoo often cooperates with other parties who care about animals. If there are animals caught by residents or caught, they will be given to the WRC (Wildlife Rescue Center) to save animals. WRC will rehabilitate the animals for release. If it cannot be returned to its natural habitat, it will be treated because it is dependent on humans. Can go to captive ex-situ conservation institutions or zoos. As insurance, if the original habitat is extinct. Still have animals that are in conservation institutions.

“As much as possible returned to their habitat. Even if the BKSDA confiscates it, it will be deposited first for health checks, not for display. We'll check if it can be released into its natural habitat or not, whether it's still worth releasing or not. The zoo remains a place to educate and conserve (Andi, personal interview, 1 October 2022)”.

Rare Animal Care

Based on direct observations and interviews at the zoo, the maintenance of endangered species is structured as follows.

Table 1. Rare Animal Maintenance (Source: personal interview)

Name	Foods	Animal Maintenance
Sumatran Tiger	Buffalo 2 kg and pork 3 kg total 5 kg for one day and for one Tiger. Drinking water from the well and there is a break or fast food one day a week.	Cleaning of the cage is done every day. Observe the food eaten. Stool check is monitored during bowel movements, whether the texture is good or not. There is also a provision of play, if there is a ball in front (display). Inside is dry grass. The main thing is for this animal to show its original behavior. Or even given a new object such as blood ice or frozen meat, so that the tiger takes a while to find food so there is a natural response. Six months of deworming and once a year vaccine.
Sumatran Elephant	Leaves, grass, bark, coconut fronds, fruit. Sumatran elephants spend 16 hours a day consuming an average of 150 kg of food and drinking 180 liters of water.	The elephant is bathed 2 times a day. Every day, the small Sumatran Elephant's body temperature and blood pressure are measured. For the entire Sumatran Elephant, from the nails, eyes, trunk to the oral cavity, it is examined whether there is a problem or not. The male elephant checks the meat area. Elephants are also able to meet their own vitamins from what is consumed. If someone has problems with their legs during activities or kicking, new wounds will occur, they will be treated by a veterinarian. At night the

		Sumatran elephant is entered. During the day they will be released and then given a game. For examples the Keeper puts the food up there (high place), later the Elephant will look for it himself so he doesn't get bored.
Bornean orangutans	Fruits and vegetables. More often corn, sweet potatoes, bananas for variety. Feeding is once a day and for animals around 30-50 for one orangutan or depending on needs.	Feeding orangutans is done once a day and it depends on the animal. Every three months the orangutan's feces will be checked for worms or not, and if there are worms they will be given. For weighing, the long term is usually around 2-3 years, as well as check your teeth, and so on. The problem is orangutans must be anesthetized first. For baby orangutans, for example, if there is a mother who doesn't want to take care of it, GLZ will take care of it. Keepers usually take turns 24 hours a day, giving milk and so on. But not all orangutans will be like that, there are also those whose parents want to take care of them.

4.2 Demographics of Research Respondents

The results of the study also showed that 20% of children did not know what types of endangered animals there were. When asked to name rare animals, most of the children could only answer one type of rare animal, while the others could name two to three rare animals. The results of the questionnaire on 30 children at SDN Ngoresan showed that 50% of the children knew how to save endangered animals and the rest did not. The children had read and were interested in reading picture story books about endangered species.

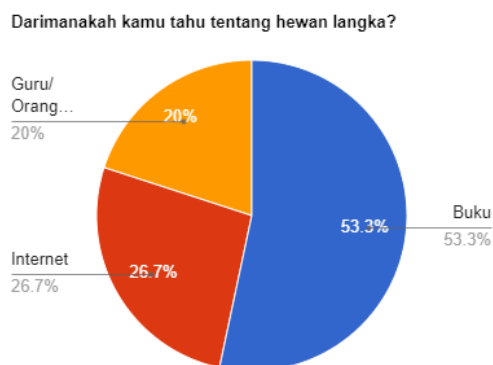


Figure 4. 1 Response results from elementary school children (source: personal research results)

The results show that 53.3% of children know about endangered animals from books. While 26.7% from the internet and the rest know through teachers or parents.

Ada berapa jenis hewan langka yang kamu tahu? Coba sebutkan! (10 anak tidak tahu)

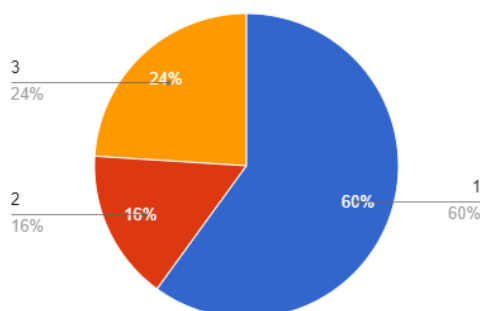


Figure 4. 2 Response results from elementary school children (source: personal research results)

The results show that 60% of children can only name one type of rare animal. Meanwhile, 16% could name two types of rare animals and 24% could name three types of rare animals.

4.3 Children's Book Illustrations educational media

Through this book, children can find out the causes of the scarcity of animals from the contents of the book's stories. The contents of the book's story also explain the care of endangered animals. Parents, families and teachers can also accompany and explain more about rare animals to children. The book "Exploring Time at the Zoo" is structured with a storyline that leads the reader to follow the story of every endangered animal in the zoo, from hunting to losing their homes. The point of the book is that human actions cause animals to become scarce, but humans can also preserve animals so they don't become extinct.

This book will be made with attractive illustrations complete with details or textures. The colors used are also bright colors but still look solid and warm. In addition to illustrations with warm colors, the character designs are made attractive and funny so that children will enjoy reading this picture story book. The texts that are made are also not too long so that they are easy for children to understand. Layouts are made varied to adjust the contents of the story so that it is not monotonous and does not bore children. At the end of the book, questions are also inserted to hone children's understanding and at the end there are also facts about endangered animals. This book is also equipped with a GembiraLoka map, so it gives a special impression for children. Apart from getting education or knowledge, children can also explore the zoo and learn about the animals that are there.

4.4 Children's Book Illustration Concept

The concept of the book is based on research results so that the visualization of the book will be adapted to the interests of children aged 8-10 years.

Illustration

The results of the illustrated questionnaire that children are interested in show balanced results. So that the illustration style used in making the book "Exploring Time at the Zoo" was combined as a minimalist but still textured illustration with warm colors.



Figure 4. 3 Sketches of the characters (source: personal work)

Typography

The typography chosen in the design of picture story books takes into account the ease with which children can read stories as well as typography that still attracts attention. The font used as the headline in this book is Berkshire Swash. While the font used as body text is Ruluko.

A	B	C	D	E	F	G	H	I	J	K	L	M	A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
a	b	c	d	e	f	g	h	i	j	k	l	m	a	b	c	d	e	f	g	h	i	j	k	l	m
n	o	p	q	r	s	t	u	v	w	x	y	z	n	o	p	q	r	s	t	u	v	w	x	y	z
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9						
.	,	;	:	@	#	'	!	"	/	?	<	>	.	,	;	:	@	#	'	!	"	/	?	<	>
%	&	*	()	\$	%	&	*	()	\$														

Figure 4. 4 Font Berkshire Swash and font Ruluko

Color

Illustration color is an important element in making book visualization. The colors used in the making of the book "Exploring Time at the Zoo" are warm colors to show the color of the forests in Indonesia. The color in the illustration will be dominated by green. The color palette below will be the main colors and will be further developed to make the illustrations in storybooks more colorful and attractive for children aged 8-10 years.

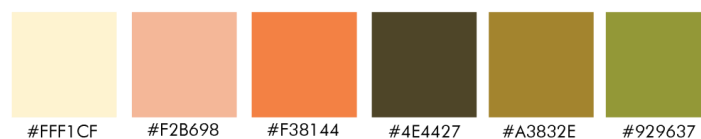


Figure 4. 5 Book color palette

Layout

Layout in a picture story book is very important to attract the attention of the audience, especially children. Layout in making a book can help or regulate the composition of illustrations with text or story content on the page. The layout technique that will be used will utilize white space/negative space to create an attractive page composition. Layouts will also be made neatly so that readers are not confused when reading the book "Traveling Time at the Zoo".



Figure 4. 6 Layout reference (source: id.pinterest.com)

Visualization of the book "Traveling Time at the Zoo"

Menjelajahi Waktu di Kebun Binatang



Figure 4. 7 Children's book visualization (source: personal artwork)



Figure 4. 8 Some pages from the book (source: personal artwork)

V. CONCLUSION

The Children book illustrations “Exploring Time at the Zoo” was designed with the aim of educating from an early age that caring for animals and the environment is important to reduce animal scarcity. Every book that has been distributed to the public certainly has its own characteristics and strengths. However, this book has the advantage of knowledge about saving and caring for endangered species which is packaged in a story that is rarely found on the market in Indonesia. This book is equipped with interesting facts about rare animals, questions to hone knowledge, and a zoo map from the GembiraLoka Zoo. Having a map will make children experience and enjoy exploring the zoo. With this book, it is hoped that children will be able to learn more about endangered species, not only to get to know their characteristics but also to know how to care for them. The limitations of this study are in the illustration section which is less textured and lacks more specific explanation of endangered species.

REFERENCES

- [1] Puspitasari, DE, Maraknya Perdagangan Satwa Langka Di Era Pandemi Covid-19 Di Indonesia, PAMALI: Review Magister HukumPattimura, 2 (1), 2022, 3.
- [2] WWF Indonesia. Orangutan. <https://www.wwf.id/spesies/orangutan> (Accessed on 4 October 2022 at 10.50 WIB).
- [3] WWF Indonesia. Harimau Sumatera. <https://www.wwf.id/spesies/harimau-sumatera> (Accessed on 6 October 2022 at 16.30 WIB).
- [4] Jones. Eevi, The Ultimate Guide to Writing and Illustrating Your First Children’s Book (Amazon, 2018).
- [5] Wibowo. Ibnu Teguh, Belajar Desain Grafis (Yogyakarta: Penerbit Buku Pintar, 2013).
- [6] Masnuna, and Prameswari, N. Sigi, Environmental Graphic Design of Sam Poo Kong Temple: How Effective and Impact on Visitors?, International Journal of Arts and Social Science, 4(3), 2021, 46.
- [7] Undang-Undang Pasal 1 Undang-Undang Nomor 5 Tahun 1990 tentang Konservasi Sumber Daya Alam dan Hayati dan Ekosistemnya.
- [8] Undang-Undang Pasal 20 Undang-Undang Nomor 5 Tahun 1990 tentang Konservasi Sumber Daya Alam Hayati dan Ekosistemnya.
- [9] Rusandi, and Muhammad Rusli, Merancang Penelitian Kualitatif Dasar/Deskriptif dan Studi Kasus, Al-Ubudiyah: Jurnal Pendidikan Dan Studi Islam, 2(1), 2021, 3.
- [10] Yuko, Judithzz. How to illustrate a children’s book: Creating, Printing & Exporting E-book Data. <https://www.clipstudio.net/how-to-draw/archives/160469> (Accessed on 26 September 2022 at 21.50 WIB).
- [11] Soedarso, Nick, Perancangan Buku Ilustrasi Mahapatih Gajah Mada, Humaniora. Vol. 5, No. 2, 2014, h. 561-570. Jakarta Barat: Universitas Bina Nusantara.
- [12] Purnomo, Agus and Adji Samekto, Perlindungan Satwa Langka di Indonesia Dari Prespektif Convention on International Trade in Endangered Species of Flora and Fauna (CITES), Diponegoro Law Journal, 5(4), 2016, 1-17. Semarang: Fakultas Hukum UNDIP.
- [13] Erwin, Muhammad, Hukum Lingkungan Dalam Sistem Kebijakan Pembangunan Lingkungan Hidup (Bandung: PT. Refika Aditama, 2011).
- [14] Saldana., Miles and Huberman, Qualitative Data Analysis (America: SAGE Publications, 2014).
- [15] Tinarbuko, Isidorus Tyas Sumbo, DEKAVE: Desain Komunikasi Visual Penanda Zaman Masyarakat Global (Yogyakarta: CAPS, 2015).
- [16] Mantei, J. and Kervin, L, Interpreting the images in a picture book: students make connections to themselves, their lives and experience, English Teaching: Practice and Critique. Vol. 13, No. 2, 2014, 76-92.
- [17] Suharto, Studi Tentang Keamanan dan Keselamatan Pengunjung Hubungannya dengan Citra Destinasi (Studi Kasus Gembira Loka Zoo), Media Wisata, 14 (1), 2021.
- [18] Dinas Lingkungan Hidup dan Kehutanan. Perlindungan Satwa dan Tumbuhan Liar dengan CITES <https://dlhk.jogjaprovo.go.id/perlindungan-satwa-dan-tumbuhan-liar-dengan-cites> (Accessed on 28 September 2022 at 10.18 WIB).

- [19] Martyanto. Nikodemus, Pengendalian Pencemaran Lingkungan Berkenaan Dengan Pengelolaan Kebun Binatang Gembira Loka diKota Yogyakarta (Yogyakarta: UAJY, 2012).
- [20] Erwin. Muhammad, Hukum Lingkungan Dalam Sistem Kebijakan Pembangunan Lingkungan Hidup (Bandung: PT. Refika Aditama,2011).
- [21] Rustan. Surianto, Layout Dasar dan Penerapannya (Jakarta: Penerbit Gramedia Pustaka Utama, 2010).
- [22] Wiyadi. Bilal and Johan Wahyudi. Rancang Bangun Game Edukasi 3 Dimensi Perawatan Orang Utan Berbasis Game Maker:Studio, Pranala Vol 14.No. 1. 2019. Banjarmasin: Teknik Informatika STMIK.