

The 2nd Conference on Management, Business, Innovation, Education, and Social Science (CoMBInES) Taichung, Taiwan 3-6 March, 2022

HEALTHY LIFESTYLES ILLUSTRATION THROUGH DIGITAL BOOK TO PREVENT CARDIOVASCULAR DISEASES

Diny Anggriani Adnas, Jennifer Chandrinova

Faculty of Information Systems, Batam International University

diny.anggriani@uib.ac.id 1831108.jennifer@uib.edu

ABSTRACT

People who live in urban areas that are stills in their productive ages and generally have busy activities often ignore healthy lifestyles and are less aware of its impacts. Due to busyness, people tend to prefer something instant and fast without considering the impacts on their health. Without realizing it triggers the negative impact of a healthy lifestyle. The most dangerous impact is that it can be one of the things that triggers heart disease. Heart disease or cardiovascular is one of the diseases that is quite feared because it can endanger lives. The statement that heart disease only occurs in people aged >50-60 years is now invalid because of the fact that in recent years many young people have suffered from this chronic disease. Problems in big cities in Indonesia have the potential or problems of an unhealthy lifestyle due to an unhealthy lifestyle, and an information media is needed to convey a message about how important a healthy lifestyle is. However, there is still a lot of inaccurate information that is spread on the internet so that it often gives rise to the wrong understanding and mindset for people who read it. Therefore the author wants to design a learning media that can provide accurate information about the importance of a healthy lifestyle. The final result of this research is the design of a media in the form of a digital illustration book about a healthy lifestyle which was created and developed using the four-d method.

Keywords: *E-book, Illustrations, Healthy lifestyles, Cardiovascular diseases, FOUR-D method*

INTRODUCTION

An unhealthy lifestyle is one of the things that triggers heart disease. But unfortunately, there are still many people who don't care about their lifestyle because of their hectic activities. Heart disease is one of the diseases that is quite feared because it can endanger lives. Currently, heart disease does not only occur in old people, but many young people are also affected by this chronic disease. Data obtained in 2019 the death rate due to heart disease worldwide was 18.6 million, the proportion of men who died was 9.6 million, while women were 8.9 million. More than 6 million deaths occur in people aged between 30-70 years. According to data from the World Health Organization (WHO), more than 17 million people in the world die from heart and blood vessel disease. In Indonesia itself, based on data from the Basic Health Research (Riskesdas) in 2018, the incidence of heart and blood vessel disease is increasing from year to year. At least, 15 out of 1000 people, or about 2,784,064 individuals in Indonesia suffer from heart disease. According to the American Heart Association, based on new research published in the AHA Journal Circulation, heart disease is increasingly occurring in young people, especially women.

People who live in urban areas who have busy activities often ignore healthy lifestyles. Especially people with productive age. As a

result of this busyness, people tend to prefer something fast food without considering the effect or impact on their health. This makes people who live in urban areas often become victims of the negative impacts of a healthy lifestyle.

Currently, information about a healthy lifestyle is very easy to find, especially on the internet. A summary of the healthy lifestyle can be found on various blogs from various sources. However, not all the information displayed on the internet is a true statement. In 2017, the Indonesian Journalists Association released the results of a survey that put health content in first place as much as 27% as the content with the most hoax elements. Political and entertainment content is in second and third position with a value of 22% and 15% (Indonesia, 2017). In addition, based on a survey from the Indonesian Telematics Society, the media used to spread hoaxes were Facebook/Twitter/Instagram with a value of 92.4%, then Whatsapp/Line/Path and websites as much as 62.8% and 34.9%. Hoaxes in the health sector are not only life-threatening but can also spread much faster than valid information. One percent of the most popular hoaxes will spread to 1000-100000 people, while valid information is only less than 1000 people (Haikal, 2020).

From the background of the problem, it is concluded that the problems in big cities in Indonesia have the potential or problems of an

The 2nd Conference on Management, Business, Innovation, Education, and Social Science (CoMBInES)

Taichung, Taiwan

3-6 March, 2022

unhealthy lifestyle and require a program in the form of an illustration book on healthy lifestyles, to make people aware and know about the importance of a healthy lifestyle, which specifically for productive age with the title "HEALTHY LIFESTYLES ILLUSTRATION THROUGH DIGITAL BOOK TO PREVENT CARDIOVASCULAR DISEASES".

PROPOSED INNOVATION

Research by (Utami, 2019) is applied research. In designing a Picture Story Book for the Prevention of Sexual Harassment in Children, the author uses Visual Communication Design Theory, Illustration Theory, Media Theory, Picture Story Theory, Child Sexual Abuse Theory, and Child Psychology Theory. The design method used is the glass box method (Glass Box Method). The author collects data through observation, interviews, and literature study. The data is processed through the SWOT analysis method. The results of the analysis are used as a reference in designing illustrated story books with the Chapter Book genre according to the age of the targeted audience. The image style used is the cartoon style.

Research by (Azelliaswari, 2019) is applied research. This design uses data collection methods through literature studies, observations, interviews, and questionnaires and uses SWOT analysis and similar projects. Based on the data obtained, the information media in this design will be in the form of an ebook or digital book which is expected to help facilitate residents in the process of counseling and finding information. The design of this guidebook will be in digital form or commonly referred to as an e-book as the main media. The choice of digital book media is because it can be carried anywhere, is not easily damaged, and is in accordance with the media used by people today, namely smartphones. The number of pages in this ebook is 20 pages including the front and back covers. With vector illustrations, infographics and simple explanations, it is hoped that it will help residents understand information about preparing for floods.

Research by (Azhar et al., 2020) is applied research. This design uses data collection methods through literature study, observation, interviews, and questionnaires as well as using SWOT analysis and similar projects. Based on the data obtained, the information media in this design will be in the form of an ebook or digital book which is expected to help facilitate residents in the process of counseling and finding information. The design of this guidebook will be in digital form or commonly referred to as an e-book as the main media. The choice of digital book media is because it can

be carried anywhere, not easily damaged, and in accordance with the media used by people today, namely smartphones. The number of pages in this ebook is 20 pages including the front and back covers. With vector illustrations, infographics and simple explanations, it is hoped that it can help residents understand information about preparing for floods.

Research by (Sari, 2020) is applied research. The design was motivated by the large amount of plastic waste caused by the increasingly severe impact of plastic waste on the environment. Various efforts have been made to reduce plastic waste, but public awareness is still relatively low. This final project aims to design an educational media for children aged 9-11 years in the form of a picture story. The approach used is to make this picture story, among others; illustration approach, illustrated story approach, and environmental awareness approach. The design method used is the Four-D method (Define, Design, Develop, Disseminate). Data analysis method The designer chose the 5W+1H method (what, when, why, where, who, how) which means what, when, why, where, who, and how. This method was chosen to solve the problems contained in the background and get a solution. The main media chosen is picture story books. For promotional needs, the selected supporting media are: T-shirts, Totebags, bookmarks, X- Banners, e-Books, posters, and Tumblr.

Design by (Rosiana, 2020) is applied research. The design of the illustration book is as a form of creative educational media that will guide, motivate and provide information to female K-pop fans so that they can make good use of their hobbies. Reflecting on the problem of obsessive and consumptive K-pop fans, it indirectly creates a negative stigma that still exists in society. For this reason, the design is intended so that the illustration book can provide motivation and inspiration to female K-pop fans to be able to use their hobbies creatively. The method used in this study uses qualitative research methods. The main media for this illustration book is A5 size with 59 pages. This book will contain positive things that K-pop fans can do and some creative tips in it. The supporting media for the illustration book is implemented in various forms of merchandise such as x-banners, postcards, bookmarks, keychains, calendars, and daily planners. The illustrated book will also be published online (digital e-book) and offline (printed book) supported by promotional media that will be carried out through social media such as Instagram.

METHODS

The design method used in designing this digital illustration book is the Four-D method.

The 2nd Conference on Management, Business, Innovation, Education, and Social Science (CoMBInES)

Taichung, Taiwan

3-6 March, 2022

4D models are used to develop learning tools. The 4D model was developed by S. Thiagarajan, Dorothy S. Semmel, and Melvyn I. Semmel in 1974. The 4D model consists of 4 main stages, namely Define, Design, Develop, and Disseminate. The work of the four-d method is shown in **Figure 1**.

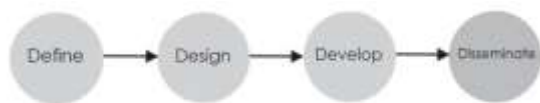


Figure 1 Four-D Methods

1. Define

The stage of defining or analyzing needs can be done through an analysis of previous research and literature studies. Thiagarajan et al (1974) mention that there are 5 steps taken at the define stage, which include:

a. Front-end Analysis

The initial analysis was carried out to identify and determine the basic problems encountered in the learning process so that it was the background for the need for development (Maydiantoro, 2021).

b. Target Analysis

Analyzing the target audience of the digital book that will be designed.

c. Specifying Instructional Objectives

This stage is to analyze the objectives to be achieved for the design of digital books.

d. Concept Analysis

Concept analysis involves identifying the main concepts to be taught, putting them in a hierarchical form, and detailing individual concepts into critical and irrelevant matters (Maydiantoro, 2021). Concept analysis in addition to analyzing the concepts to be taught also arranges the steps that will be carried out rationally.

2. Design

This design stage will produce media in the form of a developed digital book. The purpose of this stage is to design a digital illustration book about a healthy lifestyle. The stages in the design are media selection, choosing the right media format, and obtaining the initial design. At the media selection stage, based on needs analysis, the media chosen to be developed is digital/e-book-based book media. At this stage, it will produce a prototype or book design in which there is a narrative about a healthy lifestyle.

3. Develop (Development)

The third stage in the development of this digital illustration book is development. The goal of the development stage is to get maximum results. With the feasibility test at this stage of development, the designer can improve the quality of the digital book that is designed. This stage consists of two steps,

namely expert appraisal (expert assessment) accompanied by revisions and delopmental testing (trial development).

a. Expert Appraisal

Expert appraisal is a technique to get suggestions for material improvement. By conducting an assessment by experts and getting suggestions for improvement of learning devices developed, then revised according to expert advice. Expert assessment is expected to make learning tools more precise, effective, tested, and have high technique.

b. Delopmental Testing (Development Trial)

Development trials were carried out to get direct input in the form of responses, reactions, comments on the learning tools that had been prepared. Trials and revisions were repeated with the aim of obtaining effective and consistent learning tools.

4. Disseminate (Spread)

The last stage in the development of the digital illustration book design is the dissemination stage. The dissemination stage is carried out to promote the developed media so that it is accepted by individuals, or groups. In addition, the purpose of this dissemination stage is to be able to provide information and insight to the public regarding the topics taken, such as the initial design objectives specified.

RESULTS AND DISCUSSION



Figure 2. Front and Back Cover

This is the display of the front and back cover. This digital book will contain a total of 35 pages.



Figure 3. Page 2 & Page 3

On the next page, we can see the half-title page. This is a back view of the front cover and author credits page.

The 2nd Conference on Management, Business, Innovation, Education, and Social Science (CoMBInES)

Taichung, Taiwan

3-6 March, 2022



Figure 4. Page 4 & Page 5

The next page is the table of contents page. Next to the table of contents, we can read an explanation of the human heart.



Figure 5. Page 6 & Page 7

On this page is a brief explanation of what a healthy lifestyle is and what are the advantages of living the pattern.



Figure 6. Page 8 & Page 9

Next is the title "Bad Lifestyle Habits" with a little caption in it. And next to it, the first to be discussed is about cigarettes.

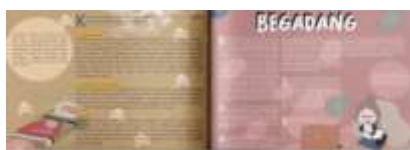


Figure 7. Page 10 & Page 11

On page 10, still discussing further about cigarettes. And next to it is an explanation about sleeping late.



Figure 8. Page 12 & Page 13

The next page is an explanation of the impact of skipping breakfast. On the next page, its an explanation of the dangers of alcohol.



Figure 9. Page 14 & Page 15

Page 14 and page 15 is an explanation about extreme diet and the bad impact of junk food consumption with human's health.



Figure 10. Page 16 & Page 17

Page 16 is explanation about instant noodles and right beside it, on page 17, its an explanation about the danger of a salt. Especially when human over-consump it.



Figure 11. Page 18 & Page 19

Here, in the page 18, we can read the explanation about 'stress' and on the page 19, we can read about the impact of late meal.



Figure 12. Page 20 & Page 21

In page 20, its explain about the effects of human's lack of rest. On the next page, it's a title of tips how to start the healthy lifestyle and it also has a little caption in it.



Figure 13. Page 22 & Page 23

On the page 22 and 23 it's an explanation about the importance of mineral water and what does mineral water contains of.



Figure 14. Page 24 & Page 25

Page 24 is explaining about periodic health checks and the explanation about control blood pressure on the page 25.

The 2nd Conference on Management, Business, Innovation, Education, and Social Science (CoMBInES)

Taichung, Taiwan

3-6 March, 2022



Figure 15 Page 26 & Page 27

Page 26 is explaining about how to reduce human's stress and right beside it, on page 27, we can read the explanation about works out.



Figure 16. Page 28 & Page 29

Page 28 is still an explanation about works out and on page 29, we can read about a healthy breakfast.



Figure 17. Page 30 & Page 31

Page 30 and 31 is explaining about the benefits of sunlight especially the morning sun.



Figure 18. Page 32 & Page 33

Page 32 is contains of book team that has 3 people who help created the e-book and also a thank you page for the reader. On the next page, there's a quote about healthy heart.



Figure 19. Back Cover

The display of back cover of the e-book.

Developmental Testing (Development Trial)

No.	Test Performed	Test Result
1.	Layout, design and content arrangement.	Pass
2.	Characteristics and uniqueness of images and illustrations.	Pass
3.	Clarity of information and content in the e-book.	Pass

Table 1. Developmental Testing Results

The result of calculation User Acceptance Test (UAT) from 105 respondents consisting of 100 people aged 18-40 years, 4 design arts students, and 1 material expert, it can be concluded that the results showed that 54 out of 100 respondents gave a very good rating, 46 out of 100 respondents gave a good score, and 5 other people gave an adequate score. In the category of clarity of information and content, 56 respondents gave a very good score, 43 respondents gave a good score, and 6 respondents gave a moderate score. In the last category of assessment, namely the score for the whole book, 59 respondents gave a score of 5, 41 respondents gave a score of 4 and 5 respondents gave a score of 3. In addition, 100% of respondents agreed and felt that the e-book was worthy of publication. Thus, the author can conclude that the design of a digital illustration book about maintaining a healthy lifestyle with the title "Heart-Healthy Living: Keep Your Lifestyle Positive" is worthy of publication. Digital books that have gone through the due diligence test are then published on the Karyavirtual.com website, which is an e-book buying and selling marketplace.

LIMITATIONS

In the process of designing and deploying the e-book, there are limitations found from the media created that need to be overcome in the future. The limitation of this digital book are:

1. The author only makes the digital book in 1 format, in PDF format.
2. Some people cannot access this digital book because digital books are accessed using gadgets or electronic devices.
3. An internet connection is required to access this digital book and not all people have it.

FUTURE WORK

Based on the results of the design, there are several things that need to be developed in the design of this illustrated e-book to make it even better, including:

1. This e-book can be further developed from the visual aspect by exploring other visual elements related to the chosen

The 2nd Conference on Management, Business, Innovation, Education, and Social Science (CoMBInES)

Taichung, Taiwan

3-6 March, 2022

theme and by an attractive and appropriate communication style for the target audience.

2. This e-book can be developed by exploring and adding other features that are considered specifically according to the needs of the audience or readers.
3. The format for delivering this e-book information can be further developed by exploring, adding other media formats with the aim that it can be reached more widely because there is no limit in obtaining information from this e-book and perhaps a printed book to facilitate the delivery of information to people who do not have electronic devices.
4. The contents of the e-book can also be further developed along with the development of science and information, especially medical science which is increasingly advanced and the information continues to develop so that the maintenance of the book is maintained and the audience remains up-to-date without reducing awareness or awareness of the importance of heart health.
5. With the publication of this digital illustration book, it is hoped that it can become a useful information medium for the community, can help activities by those in need, and increase public awareness or audiences of the importance of implementing a healthy lifestyle, especially to maintain human heart health.

REFERENCES

UTAMI, P. R., Syafwan, M.S., & Trinanda, R. (2019) PERANCANGAN BUKU CERITA BERGAMBAR PENCEGAHAN PELECEHAN SEKSUAL PADA ANAK. DEKAVE: Jurnal Desain Komunikasi Visual, 9(1).
(Azelliaswari, D. 2019). Perancangan Buku Digital Cerita Bergambar 'Trapsila' Sebagai Media Pembelajaran Untuk Berpendapat Berdasarkan Etika Jawa (Doctoral dissertation, Institut Seni Indonesia Yogyakarta).
Sari, E. Y., & Syafwandi, M. S. (2020). Perancangan Buku Cerita Bergambar Diet Plastik untuk Menjaga Kelestarian Lingkungan. DEKAVE: Jurnal Desain Komunikasi Visual, 10(2).
Ni'am Mustain, U. (2020). PERANCANGAN E-BOOK INFOGRAFIS SEBAGAI MEDIA INFORMASI WISATA WADUK GUNUNG ROWO DI KABUPATEN PATI (Doctoral dissertation, UNNES).

Winardi, N. F. (2017). Perancangan E-Book Sebagai Media Informasi Wisata Kuliner Street- food Khas Bogor (Doctoral dissertation, Institut Teknologi Sepuluh Nopember).
Gondokusumo, V. A., Wijayanti, A., & Bramantijo, B. (2017). Perancangan Buku dan E-Book untuk "Metode Swabantu Melawan Fobia". Jurnal DKV Adiwarna, 1(10), 9.
DEWI, I., HAGIJANTO, A. D., & MAER, B. D. A. (2015). Perancangan E-book Fotografi Wisata Kuliner Kabupaten Purworejo. Jurnal DKV Adiwarna, 1(6), 12.
Kamadewi, P. P., Hidayat, S., & Resmadi, I. (2020). Perancangan Buku Resep Berilustrasi Untuk Anak Usia 9-11 Tahun. eProceedings of Art & Design, 7(2).
Al Bahtiar, H., & Nugrahani, R. (2017). IMPLEMENTASI INTEGRATED MARKETING COMMUNICATION (IMC) PADA PERANCANGAN MEDIA KOMUNIKASI VISUAL KUE KAMIR IBU KHALIMAH PEMALANG. Arty: Jurnal Seni Rupa, 6(2), 103-144.
Purdiani, M. (2014). Hubungan penggunaan minuman berkafein terhadap pola tidur dan pengaruhnya pada tingkah laku mahasiswa/i Universitas Surabaya. CALYPTRA, 3(1), 1-15.
Santoso, S. G., Aditia, P., & Koesoemadinata, M. I. P. (2020). Perancangan Buku Ilustrasi Digital Sebagai Media Informasi Tentang Neurosis. eProceedings of Art & Design, 7(2).
Budiana, A. (2021). Perancangan Buku Ilustrasi Manfaat Sayur Dan Buah Sebagai Media Edukasi Pola Hidup Sehat Untuk Anak Usia 6-12 Tahun (Doctoral dissertation, Institut Seni Indonesia Yogyakarta).
Dona, D., Maradona, H., & Masdewi, M. (2021). SISTEM PAKAR DIAGNOSA PENYAKIT JANTUNG DENGAN METODE CASE BASED REASONING (CBR). ZONAsi: Jurnal Sistem Informasi, 3(1), 1-12.
Fadlilah, S., Sucipto, A., & Amestiasih, T. (2019). Usia, Jenis Kelamin, Perilaku Merokok, dan IMT Berhubungan dengan Resiko Penyakit Kardiovaskuler. Jurnal Keperawatan, 11(4), 261-268.
Rosiana, A. (2020). TA: Perancangan Buku Ilustrasi Edukasi Kreatif untuk Penggemar K-pop Perempuan sebagai Upaya Mengubah Stigma Negatif Masyarakat (Doctoral dissertation, Universitas Dinamika).
Janitra, F., & Kartaatmadja, H. (2020). Perancangan Buku Ilustrasi Mitigasi Gempa

The 2nd Conference on Management, Business, Innovation, Education, and Social Science (CoMBInES)

Taichung, Taiwan

3-6 March, 2022

- untuk Anak Usia 7-12 Tahun.
Rupaka, 1(1).
Zakiyah, N. L. (2020). Buku ilustrasi pola asuh yang tepat untuk menumbuhkan emosi positif anak. *Ars: Jurnal Seni Rupa dan Desain*, 23(3), 136-145.
Pratama, R. J., & Yasa, I. N. M. (2020). Perancangan Buku Ilustrasi Sebagai Media Informasi Tentang Stres. *Jurnal SASAK: Desain Visual dan Komunikasi*, 2(2), 59-66.
Sari, M. O., Indika, P. M., Effendi, H., & Putri, L. P. (2020). Pengaruh Kopi Terhadap Daya Tahan Kardiovaskuler Pada Atlet Sepakbola (Petiduran Baru). *Jurnal Stamina*, 3(3), 162-167.
Solihah, I., & Arnis, A. (2020). PENDIDIKAN KESEHATAN PENGENDALIAN FAKTOR RISIKO PENYAKIT KARDIOVASKULER, PENGETAHUAN DAN SIKAP REMAJA. *Quality: Jurnal Kesehatan*, 14(2), 101-106.
Guntara, M., Syakir, S., & Mujiyono, M. (2020). PERANCANGAN GAMBAR ILUSTRASI PERSONIFIKATIF TEKNIK DIGITAL DAN PENERAPANYA PADA MERCHANDISE. *Eduarts: Jurnal Pendidikan Seni*, 9(2), 70-80.