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Designing a Zine as a Preventive Campaign Media for Digital Eye Strain in Urban Teenagers

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Abstract:
The increasing use of gadgets among urban teenagers caused eye health risks like Digital Eye Strain (DES). Even though this issue has been discussed in medical studies, communicative educational approaches that are easy to understand by teenagers are still limited, especially in visual communication design. This study aims to design a zine as a preventive campaign medium to increase teenager's awareness of DES through an illustration based visual approach. This study uses the Research and Development (R&D) method with the Planning, Production and Evaluation (PPE) model. The planning steps include interviews with ophthalmologists and psychologists, a literature review and the distribution of questionnaires to teenagers who actively use gadgets. The production steps include the development of visual concepts, illustrations, typography, color schemes and zine layouts. The evaluation step is carried out through expert reviews and trials with the target audience. The reported findings suggest that the zine has potential as a preventive educational medium. Expert feedback addressed the suitability of the visual and informational content, while audience feedback indicated positive initial responses to the presentation of DES-related messages. The illustration-based and interactive approach was designed to encourage engagement and reflection on digital habits. Therefore, the zine serves as an alternative visual communication medium for preventive eye health campaigns targeting teenagers.

Introduction

The development of digital technology has changed teenagers' behavior especially for them who are living in urban areas with high access to smartphones and the internet. In Indonesia recorded about 356 million active device connections and 212 million internet users in early 2025, it shows a high level of digital uses by people with different ages (Kemp, 2025). Even though digital devices give many benefits such as easier communication, learning and entertainment (Fitriana et al., 2020), the increasing amount of screen time has raised concerns about eye health, especially among teenagers.

In recent years, digital eye strain (DES) has become an eye health issue that has received increasing attention in health and digital research (Yandi, 2017; Pucker et al., 2024). The 2023 Tear Film & Ocular Surface Society (TFOS) Lifestyle Report, as summarized by Pucker et al. (2024), defines DES as the development or exacerbation of recurrent ocular symptoms and/or signs specifically related to digital device screen viewing. Symptoms such as tired eyes, dry eyes, blurred vision, and headaches usually appear after prolonged screen use without adequate breaks (RS Jakarta, 2022). Research shows that teenagers are a group vulnerable to DES. Saputra and Inayah (2023) found that mobile phone use

is associated with eye strain among students, while Mohan et al. (2021) reported that using digital devices for more than five hours a day can significantly increase the risk of DES.

Based on a study conducted by Aqila et al. (2022) at SMP Al Azhar Syifa Budi Surakarta, 41.3% of seventh-grade students and 42.9% of eighth-grade students used smartphones for 1-2 hours per day, while 30.2% of seventh graders and 14.3% of eighth graders reported usage exceeding 4 hours per day, indicating that a substantial proportion of students fall within durations associated with risk of digital eye strain. Ganie et al. (2019) investigated the association between smartphone viewing distance, duration, and eye-fatigue complaints in university students. Their findings indicate a relevant concern but cannot be used to estimate the prevalence of clinically diagnosed DES among adolescents in Surakarta.

The research above focused on an academic agreement that high screen use among teenagers is directly linked to lower visual comfort and a higher risk of eye problems. This is supported by behavioral studies showing that teenagers often have low awareness of healthy screen habits, such as keeping a proper viewing distance, taking regular eye breaks, and using good room lighting (Setyaningsih & Setyowatie, 2023). This situation shows a clear gap between knowledge and eye-health behavior among digital-age teenagers.

On the other hand, the academic discussion about prevention strategies of DES is still limited. Most of it still focuses on medical aspects or traditional health while alternative visual communication media that are close to teenager behaviour are still rarely explored. Because of this situation, zines appear as an interesting medium because they are short, expressive, and function as alternative media for young people (Akbar, 2020; Argindo & Sihombing, 2022). Zines can be an effective educational tool to deliver complex information through simple illustrations and light storytelling (Argindo & Sihombing, 2022).

The zine design "Saatnya Kalian Tahu" by Maulana and Hidayatullah (2019) still focuses on delivering information through text and does not fully explore the use of illustrations as the main element. The study does not examine how illustrations can help increase visual appeal, emotional engagement and ease of understanding for young audiences. The target audience is limited to people aged 20–24 years and located in Jakarta. This makes the design results very specific to one context and less general, as they do not represent the diverse experiences, backgrounds and visual needs of late teenagers or young adults in other regions. These limitations create opportunities for further research to develop illustration based, non-text visual approaches and to expand audience segmentation, so that zine media can become wider visually and geographically.

Based on these conditions, it can be identified that the high intensity of digital device use among teenagers is not balanced with adequate awareness of preventive eye health behavior. Although DES has been widely studied medically, the development of visually communicative preventive media aligned with teenage characteristics remains limited. This gap underlines the need for alternative visual communication approaches capable of translating health information into engaging and accessible formats.

This study aims to design an illustration-based zine as a preventive campaign medium to increase awareness and understanding of Digital Eye Strain among teenagers aged 13-19 years in Surakarta (Diananda, 2019). This group represents junior to senior high school students with active smartphone use and moderate to high levels of digital literacy, making them particularly relevant to the issue of digital eye strain. Illustrations are used as a form of visual storytelling to help readers understand the information easily, in a way that feels close to daily life and not as stiff as typical informative text. The intended application of the zine may extend beyond Surakarta, although the empirical audience sample is limited to adolescents aged 13–19 years in Surakarta. As a result, the educational message delivered through the zine is expected to reach a broader audience and remain relevant to everyday life.

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Methods

The type of research is Research and Development (R&D). Sugiyono (2013, p. 297) explains that the R&D method is an approach that focuses on developing a product and also testing its practicality or usefulness. This approach is in line with the view of Sukmadinata (2015), who states that research and development is an effective method for improving and refining existing practices.

The design method uses the Planning, Production and Evaluation (PPE) model adapted from Richey and Klein (2007). This model is chosen because it helps guide the research process from problem identification and data collection to media design and evaluation. The use of the PPE method in this study includes three main stages that are closely connected to each other (Yulistania, 2022). The three-stage sequence is illustrated in Figure 1.

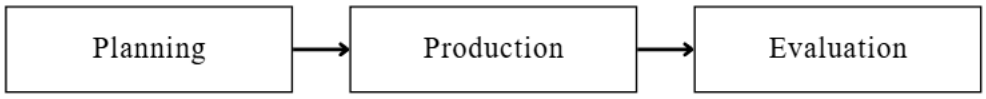


Figure 1. Diagram proses PPE

Stages of PPE Method

Planning

The planning stage is understood as a structured process for determining future actions, organizing available knowledge and resources, and setting the steps needed to achieve the intended design objectives (Ermalena et al., 2023). In this study, planning is operationalized through expert interviews, literature review, and questionnaires, which together provide the empirical and conceptual basis for developing the zine.

1. Expert In-Depth Interview

   The first planning steps are carried out through deep interviews with an eye specialist as the main source to gain a professional view on eye health, and with a psychologist to better understand teenagers' habits in using gadgets. These interviews focus on mapping the characteristics of Digital Eye Strain (DES) among urban teenagers. This includes the most common symptoms, triggering factors, risk patterns based on the intensity of gadget use, and both short-term and long-term effects on visual and psychological health. The discussions also explore the experts' views on the importance of preventive education and visual approaches that are considered effective for reaching teenagers as the target group.

   An in-depth interview was conducted with Dr. dr. Senyum Indrakila, Sp.M, at Rumah Sakit Umum Moewardi, Surakarta, on 6 October 2025 with following items:

   a. Conceptual Understanding of Digital Eye Strain
      1) How do you define Digital Eye Strain (DES) or Computer Vision Syndrome?
      2) What age groups are most vulnerable to experiencing DES?
   b. Risk Factors and Behavioral Causes
      1) What digital habits most commonly contribute to eye fatigue?
      2) How do screen exposure duration and ergonomic posture influence DES?
      3) Is there a recommended viewing distance when using digital devices?
      4) How significant is the 20-20-20 rule in preventing DES?
   c. Clinical Conditions and Examination
      1) Can uncorrected refractive errors (e.g., myopia or hyperopia) worsen DES symptoms?
      2) What clinical procedures are typically conducted when patients present symptoms of DES?

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3) What is the normal range of tear production, and how is it measured (e.g., Schirmer test)?

d. Prevention and Management
   1) What preventive measures are most effective in reducing DES among adolescents?
   2) What is your perspective on the effectiveness of blue light filter glasses or artificial tears in managing DES?

e. Educational Message for Adolescents
   1) What key advice would you emphasize to adolescents in maintaining digital eye health?
   2) How important is balancing screen time and outdoor activity (green time) in preventing DES?

The interview aimed to obtain expert insight regarding the definition, risk factors, clinical symptoms, and preventive strategies related to Digital Eye Strain (DES). The findings from the interview were used to validate and contextualize adolescents' responses, ensuring that the design recommendations for the illustrated zine were grounded in medical perspectives as well as user experiences.

2. Literature Review

The next step is a literature review, which aims to strengthen the theoretical basis of the design. The reviewed literature includes academic journals, research reports, and theoretical sources related to the topic. The results of this review are used to compare and confirm the findings from the interviews, as well as to identify research gaps that have not been widely explored, especially in terms of visual aspects and the media used. The literature review will help define the research boundaries, determine the content focus, and develop a message framework that matches the characteristics of teenage audiences.

3. Questionnaires

The last step of the planning stage is done by sharing questionnaires via Google Form to teenagers who actively use gadgets. The questionnaires are used as supporting data to check the early findings from the interviews and the literature review. The questions focus on daily gadget habits, how long they usually spend looking at screens, the digital activities they do most often, and their personal experiences with eye discomfort. The data are then looked at in a qualitative way to get a more realistic picture of how teenagers use digital devices in their daily lives. These findings later help shape the content, visual style, and communication approach of the zine, so it feels more natural, relatable, and close to the audience.

This study employed a qualitative approach with data collected through open-ended questionnaires distributed online via Google Forms and completed by 53 adolescents aged 13–19 years residing in Surakarta. The participants were active students who used smartphones for at least one hour per day in their daily activities. The analysis focused on exploring respondents' narratives and perceptions regarding symptoms of digital eye strain through thematic categorization, indicating that the study does not aim for statistical generalization but rather seeks to identify recurring patterns of experience within the context of urban adolescents in Surakarta.

The questionnaire was distributed online via Google Forms and consisted of the following items:

a. Gadget Usage Behavior
   1) How frequently do you use digital devices (smartphones, tablets, or other gadgets)?
   2) On average, how many hours per day do you use digital devices?
   3) What activities do you most frequently perform on your digital devices?
   4) Do you often use digital devices in the same position for several consecutive hours?
   5) Do you frequently use digital devices before going to sleep at night?

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b. Awareness and Experience of Digital Eye Strain
   1) Have you previously heard of the term Digital Eye Strain (DES) or digital eye fatigue?
   2) Have you ever experienced symptoms such as tired eyes, dryness, blurred vision, or headaches after prolonged screen exposure? Please describe your experience.
   3) Do you know any methods to prevent eye fatigue caused by prolonged digital device use?

c. Perception of Digital Eye Health Education
   1) In your opinion, how important is digital eye health education for adolescents? Please explain your answer.

d. Media Preference and Zine Familiarity
   1) Are you familiar with the term "zine" (independent mini-magazine with flexible design)?
   2) If you have encountered or read a zine before, where did you learn about it?
   3) How appealing would digital eye health education be if delivered through an illustrated zine format? Please explain.
   4) What type of content would you expect or prefer to see in the proposed zine design?

The open-ended questionnaire was developed based on three primary indicators: patterns of digital device usage, symptoms and awareness of Digital Eye Strain (DES), and adolescents' perceptions of educational media preferences. The items were designed to explore participants' daily screen exposure habits, experiences of visual discomfort, preventive behaviors, and their familiarity with zine as an alternative educational medium. The structure of the questionnaire aligns with the research objective of identifying behavioral patterns and media expectations to inform the design of an illustrated zine as a preventive campaign tool.

Production

The production stage refers to the process of translating the results of analysis into visual form. At this stage, the campaign concept is formulated, followed by the development of the illustration style, the selection of typography and color schemes, and the layout design of the zine. All visual elements are deliberately designed based on audience needs and the principles of visual communication design, so that the resulting zine is able to deliver information in a communicative, engaging, and relevant manner for adolescent audiences.

1. Moodboard

The first activity in the production stage is the creation of a moodboard. A moodboard is a visual medium used to organize iconographic elements in a consistent manner in order to represent the direction and concept of a particular design. At the same time, it remains adaptive, allowing designers to project users' emotional responses and sensory experiences toward the designed object. Moodboard as a compilation board containing images, text, and sample objects that function to stimulate and develop creative ideas within the design process (Verganti & Celi, 2016). The use of moodboards helps guide the entire design process, from the initial stage to the creation of the final outcome. This process begins with determining a theme or title, followed by searching for and collecting images relevant to the selected theme, and culminates in the production of the final design work (Bestari & Ishartiwi, 2016).

In this process, the moodboard shown in Figure 2 was compiled using the Pinterest platform, with careful consideration given to the suitability of the digital illustration style and the selection of colors that support the intended visual concept. The mood board functions to summarize the overall depiction of the zine product and serves as a reference for maintaining consistency in the design direction.

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Figure 2. Moodboard
Source: Personal Collection

2. Layouting

Layout is the arrangement of design elements within a specific medium to strengthen the concept or message being conveyed (Rustan, 2009; Suprayitno, 2012). As it develops, the notion of layout has become broader and is often equated with the design activity itself. The process of organizing a layout is understood as an integral part of design practice. Layout is not merely concerned with placing content or materials on a media page, but also involves managing and organizing space as a whole (Suprayitno, 2012). A designer's skill and sensitivity become key factors, as designers are required to fully understand the content and message before initiating the visual design process.

As summarized by Suprayitno (2012), Bob Gordon and Maggie Gordon argue that in designing text-based page layouts, such as brochures, magazines, or newsletters, there are two main elements that must be managed: content in the form of text and images, and the remaining empty space. The effectiveness of a layout is largely determined by the balance between these two components. Furthermore, the grid system helps designers establish a basic structure prior to the design process. The grid functions as a supportive yet invisible element th at plays a crucial role, as it provides a structural framework for positioning all layout elements, including the determination of margins and the distance between the edges of the medium and the areas where visual elements are placed (Suprayitno, 2012).

During the layouting stage, Adobe Illustrator was used to arrange visual elements such as text, images, and graphics. The process began with the creation of a grid to ensure a structured layout, after which the elements were positioned by considering spatial balance, information hierarchy, and readability. A symmetrical layout was applied to enhance readability, as illustrated in Figure 3.

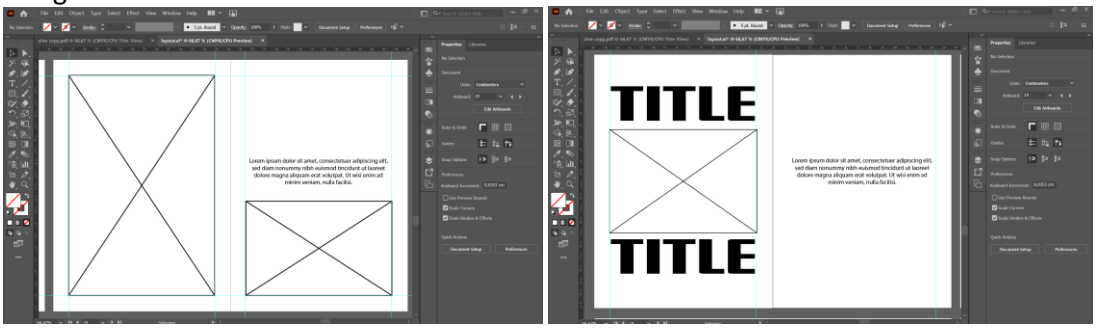


Figure 3. Layouting Process using Adobe Illustrator

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3. Sketch

Sketching is understood as one way of thinking that plays a role in giving meaning to project-based cases in design education (Nurcahyo, 2022). In design education, sketches can function as a visual language that brings new interpretations and perspectives during the design process. Sketching is also a dynamic production activity, which can appear and be used at different stages of the overall design process. This activity is not static or limited to one specific phase, but continues to develop throughout the design stages (Nurcahyo, 2022).

At the sketch stage, Procreate was used to create rough sketches of the character illustrations, as shown in Figure 4. These initial sketches function to explore the placement of objects, body proportions, gestures, and character expressions in order to match the predetermined concept. This process also helps to test the composition flow, determine the visual focus, and evaluate the suitability between elements before moving into the refinement stage.

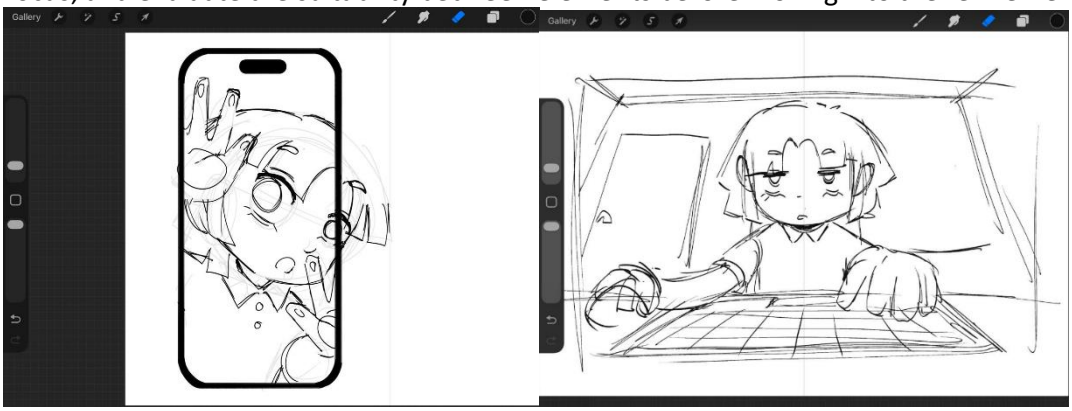


Figure 4. Sketching

4. Lineart

Line art is an illustration form that focuses on the use of lines as the main visual element (Utama et al., 2022). The lines can be long or short, straight or curved, which are arranged on a plain background without using color gradation to create two dimensional or three dimensional visual representation. Generally, line art uses a monochrome color palette such as black, white, and gray. However, in practice, there are some illustrators or designers who add color on certain objects to make the visual appearance more unique and interesting (Utama et al., 2022).

At this stage, the rough sketches that have been made before are traced again to produce images with lines that are more neat, consistent, and firm. The tracing process is done by using various brush options available in the Procreate application, with adjustment of line thickness and pressure so the visual character of the illustration can be seen clearly and more controlled. The resulting line art functions as the main structure of the illustration, therefore the accuracy of shapes, proportions, and visual details become the main concern in this stage. This line art then becomes an important foundation for the next process, especially in the coloring stage and further visual processing. Figure 5 shows the stages of creating line art, starting from strengthening the sketch lines until forming an illustration that is ready to be colored.

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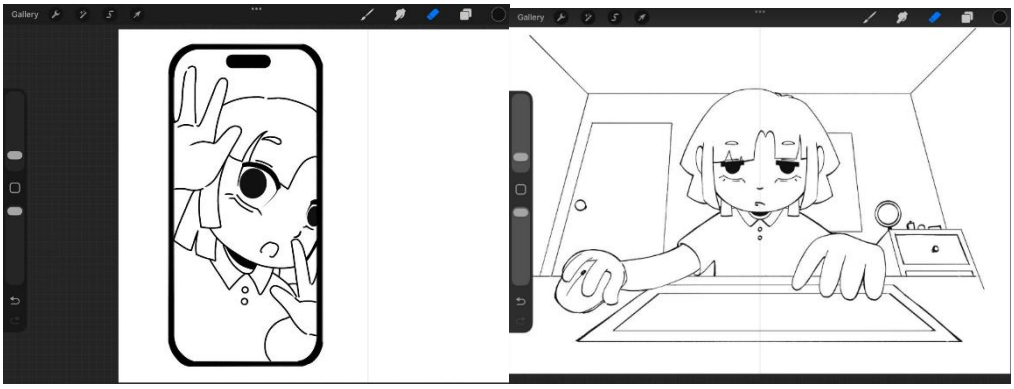


Figure 5. Lineart Process

5. Coloring

The coloring process in graphic design can be defined as a stage of applying color to visual elements that is carried out after the outline or line art has been finished (Wijaya et al., 2021). This stage uses several supporting tools, such as live paint bucket and color palette, with the purpose to create visual harmony and also to strengthen the mood and dramatic effect of the design.

The coloring stage is started in the pre-production phase through the arrangement of color palette that refers to color harmonization theory, such as complementary, analogous, and triadic (Damayanti, 2023). In this design, the selected colors consist of five main colors that form a contrasting visual impression, as shown in Figure 6.

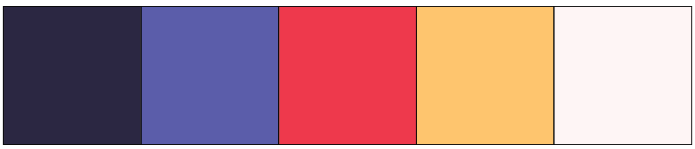


Figure 6. Color Palette
Source: Personal Collection

After determining the appropriate color palette, the coloring process is carried out by using various types of brushes to apply color to the characters and background gradually (Figure 7). The coloring is started from the base color to build the main visual form, then continued with shading that adds shadow and depth to the image. The use of layers is applied to separate the base colors from supporting elements such as shadows and highlights, so it makes the color adjustment and correction easier.

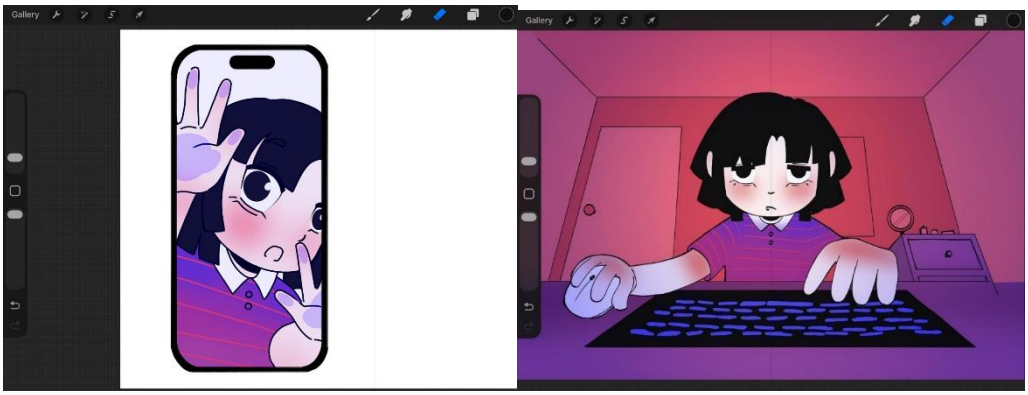


Figure 7. Coloring Process

6. Finishing

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At this stage, all images and illustrations that have been completed in the Procreate application are imported into Adobe Illustrator as a further step in the design processing. This process aims to integrate the visual elements with the text elements that have been designed in the previous layouting stage. Each illustration is adjusted again in terms of size and proportion so it fits with the zine page format, while also maintaining the overall consistency of the visual style.

Next, the positioning between illustrations and text is arranged by considering visual hierarchy, readability, and the reading flow of the audience. Adjustment of spacing and alignment is applied to create a balance between empty space and content, so the page appearance does not feel too crowded. The process shown in Figure 8 illustrates the stage of layout refinement, where all elements are arranged in a harmonious way to support the delivery of information clearly, structured, and easy to be understood by the readers.

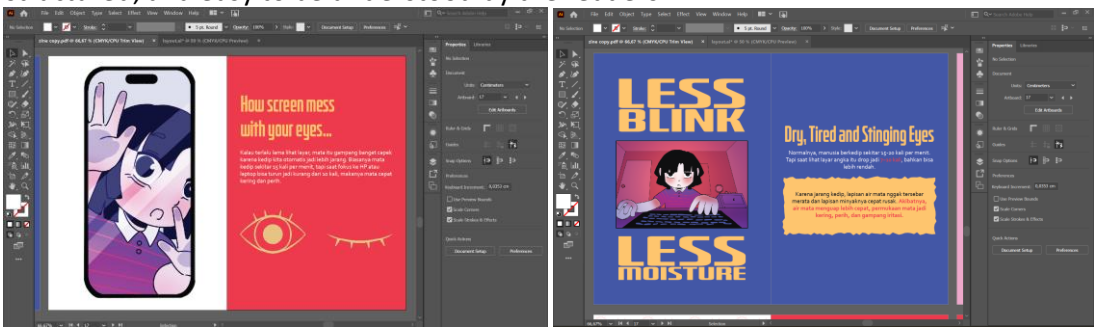


Figure 8. Finishing using Adobe Illustrator

Evaluation

Evaluation in the PPE method is the final stage that is oriented toward assessing the feasibility of the product. This stage is carried out through a validation process by experts and users in order to assess the level of effectiveness and the suitability of the product with the predetermined needs (Alia & Rizqi, 2023).

The evaluation stage is directed to examine how far the designed zine is able to function effectively as a preventive campaign media. This evaluation aims to ensure that the delivered message is not only attractive, but also appropriate to the target, easy to understand, and in accordance with the intended health education objectives. The assessment is conducted comprehensively on content aspects, visual elements, and media function in supporting changes of audience awareness toward the addressed issue.

The evaluation process involves two main groups, namely health experts and adolescents as the target audience. Health experts, particularly ophthalmologists, play a role in assessing the accuracy of information, the suitability of educational materials with medical principles, and the clarity of message delivery. The evaluation by adolescents is focused on text readability, clarity of illustrations, visual attractiveness, information flow, as well as the relevance of content to their daily digital habits and experiences. This approach allows the researcher to obtain functional perspectives and direct user experience.

The feedback results obtained from both groups are analyzed to identify the strengths and weaknesses of the designed media. The evaluation findings are then used as the basis for making final improvements to the content, visual, as well as the layout of the zine. The final product produced does not only have good aesthetic quality, but also supported by strong content validity and optimal usability as an educational media and preventive campaign in the health field.

Result and Discussion

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Result

This research focuses on the use of zines as a campaign tool to increase awareness about digital eye strain (DES) among urban teenagers.

Zine Content

The content of this zine is arranged through tables with the purpose to build readers' understanding of the Digital Eye Strain (DES) issue in a gradual and contextual way. The zine is designed into 40 pages with the following content (see Table 1):

Table 1. Zine Content

No	Keterangan	Konten Narasi	Halaman
1	Front cover	Includes title *'Overlooked'* and *tagline 'Pause for Your Eyes'*	1
2	Introduction	Introduction	2-3
3	Background of teenagers' digital habit that causes DES	Opening statement	4-5
		Explanation of how teenagers are close to gadgets	6-7
		Teenagers' habits of using gadget in term of position and duration	8-9
		Explanation of eye tension	10-11
4	Introduction and explanation of DES	"What is *digital eye strain* (DES)?"	12-13
		General explanation of DES	14-15
5	Penyebab dan dampak DES	Effects of gadget screen to eyes	16-17
		Explanation of dry eyes	18-19
		Explanation of red eyes	20-21
		Explanation of headache and statement that DES not only effects eyes	22-23
		"What should we do, then?"	24-25
6	Solution and explanation of how to prevent DES	Explanation of fixing body posture and improve visibility	26-27
		20-20-20 rule	28-29
		Explanation of room light and how it is related	30-31
		Explanation of 'greentime'	32-33

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7	Interactive pages	Invitation of 'Pause for Your Eyes'	34-35
		'Screentime Tracker'	36-37
8	Closing	Message from ophthalmologist	38-39
9	Back cover	-	40

The background section functions as an introduction that links the phenomenon of gadget usage in teenage daily life with eye health conditions that are often overlooked. After that, the zine presents an introduction and brief explanation about Digital Eye Strain (DES), covering the definition, characteristics, and common symptoms that are often experienced. The information delivery is designed using a combination of illustrations and text, so the medical concepts which are technical can be received more easily by the target audience, as well as increasing reader attraction and engagement.

In the next section, the zine discusses the causes and impacts of DES that are viewed from teenage gadget habits, such as screen viewing duration, device usage position, and the lack of eye resting breaks. This discussion is strengthened by information about potential short-term and long-term impacts on visual comfort and productivity. As a solution to this issue, the zine provides DES prevention guidelines that are practical and relevant to daily activities, accompanied by interactive pages that encourage active participation from readers. These interactive elements not only function as a reflection medium, but also as a communication strategy to increase awareness and encourage sustainable preventive behavior changes.

Zine 'Overlooked'

The zine is arranged with the title 'Overlooked', and carries the theme "Pause for Your Eyes" as an invitation for the audience to be more aware of their own health. The zine is designed with a content flow that is arranged in a systematic and narrative way. The presentation of the content begins with the depiction of teenage habits in using gadgets in their daily life as the initial context of the problem. After that, the discussion leads to the introduction of Digital Eye Strain (DES), including commonly experienced symptoms and the causative factors related to digital activities.

To strengthen the delivery of the content, the zine "Overlooked" uses an expressive visual approach through two-dimensional hand-drawn style illustrations. This illustration style is chosen to create a personal, communicative, and close impression with the character of the target audience. The typography used is a sans-serif type, with Bitcrusher as the title font, and Corbel as the body text font with the purpose to support readability and reading comfort. The combination of illustration and typography is designed to deliver information in a light but still informative way.

In terms of visual layout, this zine applies a primary color palette consisting of blue, red, and yellow as the main foundation. Blue color is used to build a calm and focused impression, red as a visual emphasis element, and yellow to give a warm and energetic nuance. A symmetrical layout is applied by placing text and illustrations proportionally to create order, clarify information hierarchy, and make the visual scanning process easier. The entire process of illustration and layout design is carried out digitally using Procreate and Adobe Illustrator, then arranged into a print-ready format to ensure visual consistency and quality in the final result. The printed mockup and examples of the interior page designs are presented in Figures 9 and 10, respectively.

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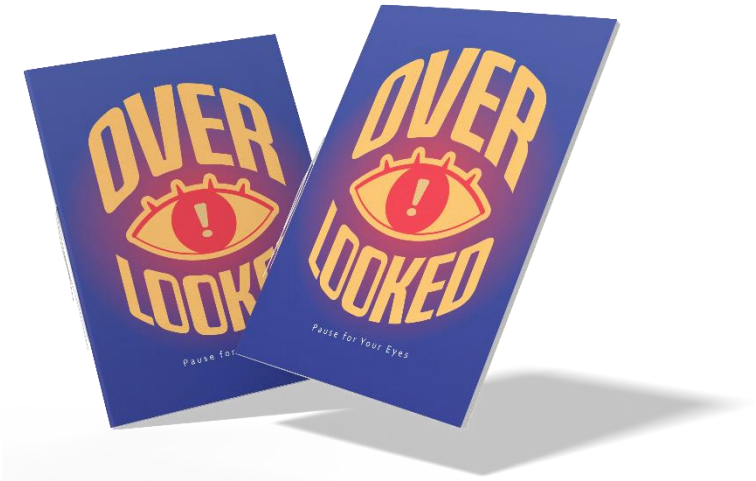


Figure 9. Mockup Zine Overlooked

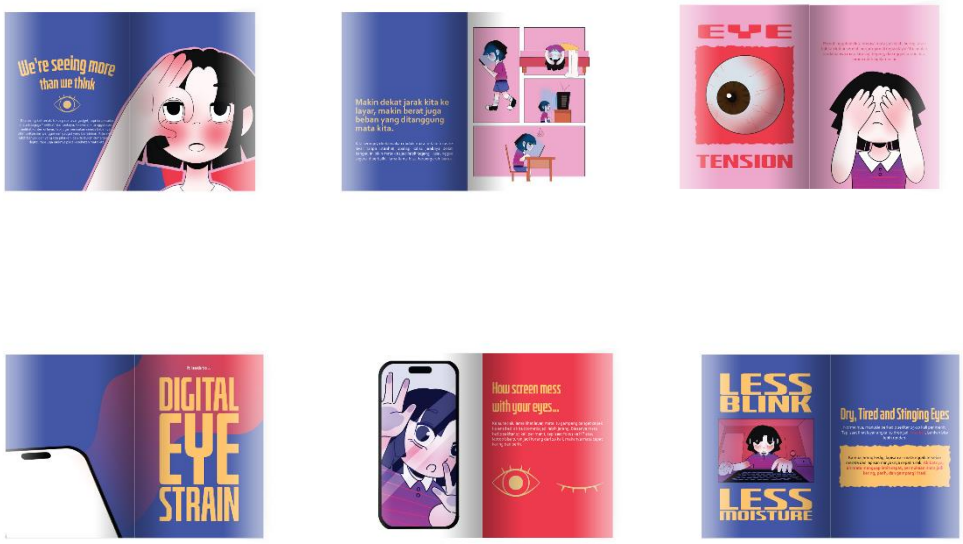


Figure 10. Sample of Zine Page

E-zine 'Overlooked'

The zine Overlooked is also developed in digital format or e-zine as an effort to expand the audience reach. The digital presentation allows the zine to be accessed more flexibly through electronic devices such as smartphones, tablets, and computers, so it is in line with the media consumption habits of adolescents which are dominated by digital activities. This e-zine format also functions as a more efficient distribution alternative and adaptive to the development of online-based campaign media.

The e-zine Overlooked is published through the platform heyzine.com which supports an interactive display that is similar to the experience of reading a physical zine. The selection of this platform is based on considerations of ease of access, responsive visual appearance, and the ability to display illustrations and layout optimally without reducing the design quality. With this format, readers can still enjoy the visual flow, illustrations, and layout composition as designed in the printed version. The e-zine reading interface is shown in Figure 11.

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Access to the e-zine Overlooked can be done through the following link: https://bit.ly/zineoverlooked. The existence of this digital version is expected to strengthen the function of the zine as an educational and preventive campaign media, as well as reaching a wider audience without limitation of space and physical distribution.

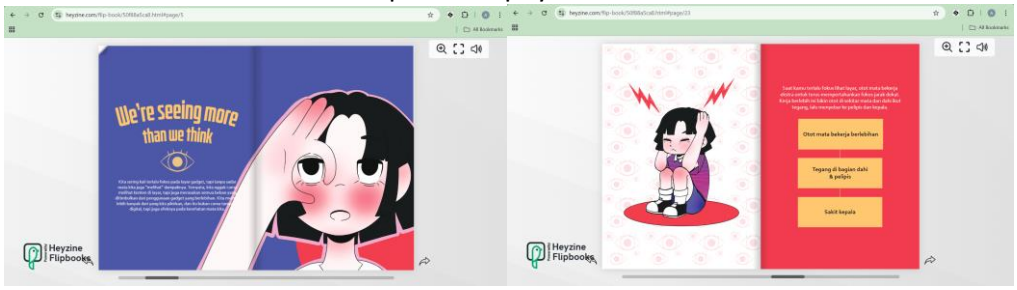


Figure 11. E-zine Overlooked

Discussion

Teenagers' Vulnerability to DES

Teenagers generally use digital devices for many activities such as online learning, entertainment, and social communication often for prolonged periods (Nursyiam et al., 2024). Several studies also indicate that adolescents often use gadgets for multiple hours per day, creating conditions for visual fatigue (Nursyiam et al., 2024; Prayudi, 2023). High duration of gadget usage can cause decreased blinking frequency, eye muscle tension, and tear layer instability, which become the main factors of digital eye strain (DES), with symptoms like tired eyes, dry eyes, blurred vision, and pain around the eye area (Nursyiam et al., 2024).

Research results also show that university students are included as a group that has high vulnerability to eye fatigue as the impact of excessive handphone usage intensity (Saputra & Inayah, 2021). Previous studies have examined relationships between device-use patterns, viewing distance, and reported visual complaints among adolescents (Prayudi, 2023; Sindi & Sulistiowati, 2023). A clinical review identifies reduced blink frequency and ocular-surface dryness among mechanisms associated with DES (Pucker et al., 2024).

Through questionnaires distributed to teenagers, around 30% answered "often" experiencing DES symptoms and almost fifty percent answered "ever" experienced DES symptoms. These self-reported complaints suggest that visual discomfort is experienced by some respondents; the questionnaire does not establish clinical DES prevalence or a causal relationship with device-use intensity. Therefore, educational efforts are needed regarding healthy gadget usage habits in order to minimize the risk of eye health problems.

Teenager's Knowledge and Preventive Behavior toward DES

The questionnaire results with 53 respondents from Surakarta, shows that most respondents actually already have basic knowledge about Digital Eye Strain (DES), either from personal experience or previous information exposure. Respondents generally are able to recognize the term DES and relate it with common symptoms such as tired eyes, sore feeling, dryness, or blurred vision caused by long duration of digital device use. This finding indicates that the main problem is not the lack of information, but more on the low level of reflective awareness toward the condition experienced in daily life.

Even though respondents understand the concept of DES, more than 50% do not realize that the visual complaints they feel are part of DES symptoms. This condition makes the symptoms considered as something normal or as a common effect of digital activities, so it does not create urgency to take preventive action. In addition, the questionnaire results also show that respondents tend to not apply preventive steps in an effective and consistent way. This situation shows a gap between knowledge

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and practice, which becomes an important reason for the need of educational media that is not only informative, but also able to raise awareness, encourage reflection, and motivate preventive behavior change related to eye health.

Selection of Educational Media for Teenagers

Media has an important role as a tool for delivering information, therefore the choice of media form and how the message is presented needs to be considered carefully (Mataram, 2022). One of the media that can be used for educational purposes is zine. Zine is able to bring serious issues in a lighter way, so the reading process does not feel too heavy for the audience. This makes readers more comfortable when engaging with the content. Zine also gives freedom for the creator to express ideas, thoughts, and personal experiences through visual form (Argindo & Sihombing, 2022).

Stephen Duncombe (1997) defines zine as a non commercial and non professional printed media with limited distribution. In many cases, the creator of a zine takes multiple roles, such as designer, publisher, and distributor at the same time. Duncombe also explains that the most effective way to introduce zine to beginners is not through strict theoretical definition, but through direct reading experience. By reading various zines, readers can build their own understanding and meaning of what zine is based on personal experience (Winni & Mataram, 2024).

One of the most used media for educational purposes is digital infographics. Digital infographics are visual media that combine text, illustrations, icons, and other graphic elements to present information in a concise and structured manner. This medium is effective for delivering procedural and conceptual content because it organizes material systematically, making it easier to understand (Kharisma et al., 2025). Digital infographics have been used in health campaign designs intended to increase awareness and facilitate understanding among young audiences. For example, an infographic-based anti-smoking campaign design proposed the use of simple illustrations, contrasting colors, and structured layouts to communicate health risks to students (Wahid & Setyanto, 2025).

Despite its strengths, infographic media also presents several limitations. The restricted layout space often requires information to be overly condensed, which may result in the omission of important details. In addition, the complexity of visual composition demands strong design competence, as poorly structured infographics can create confusion, and not all types of content are suitable to be effectively translated into this format (Wati, 2025). Infographics also play a role in presenting data through visual illustrations that help readers understand information (Saptodewo, 2014).

Reading preferences tend to be different compared to adults. Teenagers usually prefer media that is visual, personal, and not too formal. They are more attracted to content that feels close to their daily life and easy to access (Argindo & Sihombing, 2022). Because of this, zine is considered relevant as an educational media since it can deliver information in a more relatable and approachable way for the teenage audience.

Zine can be seen as an effective visual educational media. Zine is able to communicate complex information and issues using a simple, personal, and communicative approach. Its flexibility also allows creators to adjust the content according to the topic being discussed, which can increase engagement, understanding, and emotional connection between teenagers and the educational material presented.

Zine as Educational Media for DES

Teenagers usually respond more to educational media that combine illustration and text with light and narrative language, compared to scientific media which is dense and formal (Argindo & Sihombing, 2022). Zine is considered able to increase reading interest and engagement of teenagers because it presents information through expressive visuals and story flow close to audience

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experience, so the message receiving process becomes more fun and does not feel lecturing (Serenita & Octavia, 2025).

Based on questionnaire results spread to the target audience, more than 90% respondents said they are already familiar with zine media, which show that zine is known and has high acceptance among teenagers. This high familiarity became the main reason to choose zine as educational media for DES, because media that are already familiar are usually easier to catch attention and push reader engagement. On the other hand, many health issues have been discussed through zine-based educational media, but discussion especially about eye health, especially DES in teenagers, is still quite limited. Therefore, zine was chosen as strategic media to fill this gap by presenting eye health information visually, narratively and contextually, so preventive messages can deliver more effective and relevant to teenager digital experience.

This zine works as preventive educational media that discuss Digital Eye Strain (DES) with visual and narrative approach suitable for teenagers. Through illustration, typography, and story flow close to daily life of gadget users, zine's role is to increase teenagers' awareness about symptoms, causes, and risk of DES which is often ignored. Information delivered with daily language so readers can understand eye health issues without feeling heavy because of complex medical terms. Figures 2–8 document how the moodboard informed the layout, sketches, line art, color scheme, and final composition.

Besides as a tool to deliver information, this zine also works as campaign media to push attitude and preventive behavior change. By raising teenagers' digital habits and ending with reflective invitations like “Pause for Your Eyes,” zine expected can trigger self-awareness and push application of healthier gadget usage. So, zine not only serves as informative media, but also as a visual communication tool which builds emotional closeness and strengthens eye health education. The progression of planned content is summarized in Table 1, while Figures 9–11 illustrate the printed and digital forms of the resulting zine.

Competitor Zine Comparison

Referring to Argindo and Sihombing (2022), this comparison highlights zines as media that provide space for expression and creative experimentation, both visually and verbally, without being constrained by rigid academic or commercial conventions. This approach examines how zines utilize visual freedom, illustration styles, personal narratives, and symbolism to construct deeper and more subjective meanings. Table 2 compares the reference zines with “Overlooked” in terms of visual approach, narrative content, interactivity, and freedom of expression.

Table 2. Comparison of Competitor Zine

Zine Element	Zine ‘Overcome Burnout’	Zine ‘Melek Diri’	Zine ‘Overlooked’
Visual Approach	Combine text and illustration to support content. Composition was made flexible but remains organized.	Using a conceptual visual that combines text and illustration in a balanced manner.	Using a combination of illustration, contrast colors, and static layout to support the educational campaign.
Narrative Content	Use an informative style with short, direct sentences. The narrative structure is	Using an organized text structure and not emphasizing emotional elements.	Using a casual and communicative style with a bilingual touch to create a narrative

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	designed to facilitate gradual understanding of the content.		that is close to the way today's youth communicate.
Interactivity and Reader Engagement	Include reflective activities such as writing, drawing, or answering questions.	Include light activities using a variety of media.	Encourage reader engagement by inviting them to participate in simple activities that are reflective and applicable.
Freedom of Expression	Free composition in the arrangement of elements, such as a combination of large typography, illustrations, and empty spaces that are not always symmetrical. However, the rhythm remains controlled through measured arrangements, so that the entire page remains hierarchically and consistently readable.	Applying a uniform composition to almost every page, in terms of text placement, illustration orientation, and space proportions. Color variations and visual forms are used consistently, although this reduces the dynamic visual rhythm between pages.	Applying static visual elements, with a combination of illustrations, text, and contrasting colors that interact with each other to create an expressive visual rhythm. This freedom remains focused through balanced composition and consistent style, so that the campaign message can be conveyed effectively.

Conclusion

Digital eye strain has become quite an important eye health issue among urban teenagers, because of increasing use of digital devices in many daily activities. In designing zine as preventive campaign media, zine was used as visual educational media to raise teenagers' awareness about risk of digital eye strain and possible impact to eye health. With a visual approach that matches with teenagers character and habits, this zine can deliver information about not ideal gadget use patterns and at same time push for preventive steps, like managing screen time, setting proper viewing distance, and taking eye breaks regularly.

In conclusion, the reported evaluation findings suggest that the zine *"Overlooked"* has potential as a preventive educational medium for Digital Eye Strain (DES) among teenagers. Expert feedback identifies promising interactive elements, while also emphasizing the need for more structured preventive guidance, such as gadget nomenclature, screen-time duration limits, and age-based usage recommendations. Audience feedback suggests the zine's communicative appeal and educational relevance, though refinements in typography and color application are required to enhance visual comfort and readability. Collectively, these findings indicate that integrating clearer

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preventive instructions with optimized visual design may improve the zine's suitability as an informative and engaging visual communication resource. Sustained changes in awareness or behavior require further evaluation.

References

Akbar, A. M. (2020). Eksistensi zine sebagai media alternatif bagi komunitas Lingkaran Solidaritas Surabaya dalam pendekatan ruang publik. The Commercium, 3(2), 1-5. https://doi.org/10.26740/tc.v3i2.35772

Alia, R. N., & Rizqi, M. A. (2023). Pengembangan media promosi kesehatan buku diary mengenai pencegahan anemia pada remaja putri di SMAN 1 Ciparay. Jurnal Kesehatan Siliwangi, 3(3), 653-659. https://doi.org/10.34011/jks.v3i3.1034

Aqila, P. Y. N., Nugroho, H. W., & Nur, F. T. (2022). Hubungan jarak dan durasi penggunaan smartphone dengan digital eye strain pada anak sekolah menengah pertama di masa pandemi COVID-19. Plexus Medical Journal, 1(6), 206–218. https://doi.org/10.20961/plexus.v1i6.549

Argindo, F. S. E., & Sihombing, R. M. (2022). Penggunaan zine sebagai media pengenalan stage of grief kepada remaja. Wimba: Jurnal Komunikasi Visual, 13(2), 28-42. https://doi.org/10.5614/jkvw.2022.13.2.3

Bestari, A. G., & Ishartiwi, I. (2016). Pengaruh penggunaan media mood board terhadap pengetahuan desain busana pada mahasiswa pendidikan teknik busana. Jurnal Inovasi Teknologi Pendidikan, 3(2), 121–137. https://doi.org/10.21831/jitp.v3i2.8006

Damayanti, S. (2023). Metode penciptaan desain kerajinan menggunakan Adobe Illustrator. Fashion and Fashion Education Journal, 12(1), 54-61. https://doi.org/10.15294/ffej.v12i1.58371

Diananda, A. (2019). Psikologi remaja dan permasalahannya. ISTIGHNA: Jurnal Pendidikan dan Pemikiran Islam, 1(1), 116–133. https://doi.org/10.33853/istighna.v1i1.20

Duncombe, S. (1997). Notes from underground: Zines and the politics of alternative culture. Verso.

Ermalena, S. S., Wening, S., & Budiastuti, E. (2023). Tunik menggunakan pengaplikasian teknik colet-boshi shibori pada wanita karir dengan bentuk tubuh pendek gemuk. Fashion and Fashion Education Journal, 12(1), 91-104. https://doi.org/10.15294/ffej.v12i1.64613

Fitriana, F., Ahmad, A., & Fitria, F. (2020). Pengaruh penggunaan gadget terhadap perilaku remaja dalam keluarga. Psikoislamedia: Jurnal Psikologi, 5(2), 182–194. https://doi.org/10.22373/psikoislamedia.v5i2.7898

Ganie, M. A., Himayani, R., & Kurniawan, B. (2019). Hubungan jarak dan durasi pemakaian smartphone dengan keluhan kelelahan mata pada mahasiswa Fakultas Kedokteran Universitas Lampung. Majority, 8(1), 136–140.

Kemp, S. (2025, February 25). Digital 2025: Indonesia. DataReportal - Global Digital Insights. https://datareportal.com/reports/digital-2025-indonesia

Kharisma, Y. A., Citraningrum, D. M., Sulistyawati, E., Puspitasari, H., Putera, S. S., Krisdianti, C., & Agustiningsih, L. (2025). Pengembangan media pembelajaran berbasis infografis digital untuk materi struktur dan kaidah teks prosedur kelas XI SMA. Jurnal Pendidikan Tambusai, 9(2), 14036-14039. https://doi.org/10.31004/jptam.v9i2.27463

This work is licensed under a CC-BY

Mataram, S. (2022). Function and aesthetic contexts in disaster mitigation comics. IOP Conference Series: Earth and Environmental Science, 1114, 012095. https://doi.org/10.1088/1755-1315/1114/1/012095

Maulana, R. D., & Hidayatullah, S. (2019). Perancangan zine pengenalan dan penyikapan quarter life crisis untuk anak muda usia 20-24 tahun daerah Kota Jakarta. E-Proceeding of Art & Design, 6(3), 4093-4101. https://openlibrarypublications.telkomuniversity.ac.id/index.php/artdesign/article/view/11076

Mohan, A., Sen, P., Shah, C., Jain, E., & Jain, S. (2021). Prevalence and risk factor assessment of digital eye strain among children using online e-learning during the COVID-19 pandemic: Digital eye strain among kids (DESK study-1). Indian Journal of Ophthalmology, 69(1), 140-144. https://doi.org/10.4103/ijo.IJO_2535_20

Nurcahyo, M. (2022). Kajian peran sketsa dalam proses kreatif dan pendidikan desain: Kasus pengalaman belajar desain di era digital. Lintas Ruang: Jurnal Pengetahuan dan Perancangan Desain Interior, 10(2), 86-97. https://doi.org/10.24821/lintas.v10i2.7199

Nursyiam, M., Laela, R., & Dewi, S. I. (2024). Dampak radiasi gadget terhadap kesehatan mata remaja. Jurnal Kesehatan Masyarakat Indonesia (JKMI), 1(2), 74-78. https://doi.org/10.62017/jkmi.v1i2.707

Prayudi, A. (2023). Pengaruh gadget dalam penurunan tingkat penglihatan pada remaja. Jurnal Pendidikan dan Media Pembelajaran, 2(1), 1-20. https://doi.org/10.59584/jundikma.v2i1.6

Pucker, A. D., Kerr, A. M., Sanderson, J., & Lievens, C. (2024). Digital eye strain: Updated perspectives. Clinical Optometry, 16, 233-246. https://doi.org/10.2147/opto.s412382

Richey, R. C., & Klein, J. D. (2007). Design and development research: Methods, strategies, and issues. Routledge.

RS Jakarta. (2022). Digital eye strain: Kenali penyebab dan pencegahannya. https://rsjakarta.co.id/digital-eye-strain-kenali-penyebab-dan-pencegahannya/

Rustan, S. (2009). Layout dasar dan penerapannya. Gramedia Pustaka Utama.

Saptodewo, F. (2014). Desain infografis sebagai penyajian data menarik. Jurnal Desain, 1(3), 193–198. https://doi.org/10.30998/jurnaldesain.v1i03.563

Saputra, F. F., & Inayah, Z. (2021). Effects of nomophobia and mobile phone use with eye strain in university students. PREPOTIF: Jurnal Kesehatan Masyarakat, 5(2), 1284–1294. https://doi.org/10.31004/prepotif.v5i2.2581

Serenita, A., & Octavia, E. R. (2025). Perancangan zine sebagai media edukasi dampak konsumsi minuman manis berlebihan bagi remaja. In Prosiding SNADES 2025: Desain untuk Akselerasi Pembangunan Indonesia (pp. 241–248). https://snades.upnjatim.ac.id/eprosiding/index.php/snades/article/view/60

Setyaningsih, E., & Setyowatie, D. (2023). Sosialisasi dampak positif dan negatif penggunaan gadget serta media sosial di kalangan anak-anak dan remaja. IJCOSIN: Indonesian Journal of Community Service and Innovation, 3(1), 64-71. https://doi.org/10.20895/ijcosin.v3i1.919

Sindi, D. A., & Sulistiowati, S. (2023). Gambaran durasi penggunaan gawai (gadget) dan tingkat ketajaman mata pada remaja di SMPN 211 Jakarta. Jurnal Ilmiah Kesehatan Keris Husada.

Sugiyono. (2013). Metode penelitian kuantitatif, kualitatif, dan R&D. Alfabeta.

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Sukmadinata, N. S. (2015). Metode penelitian pendidikan. Remaja Rosdakarya.

Suprayitno, S. (2012). Tinjauan anatomi layout halaman Republika Epaper. Humaniora, 3(2), 593–605. https://doi.org/10.21512/humaniora.v3i2.3403

Utama, I. P. A. P., Artawan, C. A., & Indira, W. (2022). Perancangan komunikasi visual sebagai media promosi Silverhand.id Clothing Company. Amarasi: Jurnal Desain Komunikasi Visual, 3(1), 51-60. https://doi.org/10.59997/amarasi.v3i01.1046

Verganti, R., & Celi, E. (2016). Enhancing future driven design education through moodboards . Journal of Futures Studies, 21(2), 19-38.

Wahid, A., & Setyanto, D. W. (2025). Perancangan desain infografis dan kampanye tentang bahaya rokok bagi pelajar tingkat menengah di Indonesia. MAVIS: Jurnal Desain Komunikasi Visual, 7(1), 107-118. https://doi.org/10.32664/mavis.v7i01.1612

Wati, W. (2025). Developing infographic media of physics based on ethnoscience. Edu Sains Jurnal Pendidikan Sains & Matematika, 12(2), 131-142. https://doi.org/10.23971/eds.v12i2.7329

Wijaya, R. G., Ramdhan, Z., & Mahardika, A. (2021). Perancangan palet warna untuk animasi pendek 2D "Apresiasimu" dalam meningkatkan apresiasi masyarakat terhadap desain grafis. E-Proceeding of Art & Design, 8(6), 3090-3098. https://openlibrarypublications.telkomuniversity.ac.id/index.php/artdesign/article/view/16854

Winni, Z. C., & Mataram, S. (2024). Perancangan zine penggunaan transportasi umum guna mengurangi polusi udara bagi dewasa di Jakarta. Tuturrupa, 6(2), 101-110. https://doi.org/10.24167/tuturrupa.v6i2.11373

Yandi, N. (2017). Kesehatan mata pada era layar digital. Cermin Dunia Kedokteran, 44(11), 788-791.

Yulistania, G. (2022). Pengembangan bahan ajar komik pada materi aritmatika sosial berbantuan Flip PDF Professional. Sarjana thesis, Universitas Siliwangi.

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