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Optimizing Art and Design Education Through Mobile Apps Development

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Abstrak

Pesatnya pertumbuhan sektor Desain Komunikasi Visual di era digital menyoroti meningkatnya permintaan akan desainer grafis terampil di berbagai industri. Sebagai profesional kreatif, desainer grafis bertugas menyampaikan pesan melalui sarana visual, menyeimbangkan estetika, fungsionalitas, dan keahlian teknis. Namun, banyak desainer menghadapi tantangan dalam menghasilkan karya berkualitas tinggi karena terbatasnya pengetahuan praktis dan teoritis. Penelitian ini mengusulkan pengembangan "Dr. Visual", sebuah aplikasi e-learning seluler yang dirancang untuk meningkatkan keterampilan desain baik calon desainer maupun desainer muda. Dengan memanfaatkan proses pemikiran desain, aplikasi ini bertujuan untuk memberikan pengguna wawasan yang lebih mendalam tentang teori dan praktik desain. Dengan menggunakan metode Deskriptif Kuantitatif, penelitian ini menganalisis minat pengguna terhadap aplikasi, menekankan potensinya untuk mendukung desainer dalam menciptakan karya seni yang unggul. Temuannya menunjukkan bahwa "Dr. Visual" dapat berfungsi sebagai sumber daya yang berharga, menawarkan platform bagi desainer grafis untuk meningkatkan keterampilan mereka dan menghasilkan desain berkualitas lebih tinggi.
Keywords: *e-learning, aplikasi mobile, design thinking*

Abstract

The rapid growth of the Visual Communication Design sector in the digital era highlights the increasing demand for skilled graphic designers across various industries. As creative professionals, graphic designers are tasked with conveying messages through visual means, balancing aesthetics, functionality, and technical expertise. However, many designers face challenges in producing high-quality work due to limited practical and theoretical knowledge. This research proposes the development of "Dr. Visual," a mobile e-learning app designed to enhance the design skills of both aspiring and young designers. By utilizing the design thinking process, the app aims to provide users with deeper insights into design theory and practice. Employing a Quantitative Descriptive method, the study analyzes user interest in the app, emphasizing its potential to support designers in creating superior artwork. The findings suggest that "Dr. Visual" could serve as a valuable resource, offering a platform for graphic designers to enhance their skills and produce higher-quality designs.
Keywords: *e-learning, Mobile Application, design thinking*

1. INTRODUCTION

The concept of the creative industry and the current digital era is believed to be a source of new growth for the national economy in the future. According to Badan Ekonomi Kreatif, creative industries in Indonesia are divided into 16 sub-sectors [1]. According to Bekraf, visual communication design is one of the fastest-growing subsectors. Supported by data from Outlook Pariwisata dan Ekonomi Kreatif Indonesia 2020-2021, it is noted that the Visual Communication Design sub-sector absorbed 29,651 workers during 2020 [2].

Visual Communication Design itself is a science that aims to study communication concepts and creative expressions through various media in conveying ideas and messages visually by managing graphic elements in the form of shapes and images, letter arrangements, and composition colors and layouts. The results of the work are in the form of graphic design which can then be used in various fields of work or services [3]. Etymologically the term design comes from the English word "design" which means design, plan, or design. In the design process, various aspects will be considered, such as aesthetics, function, and various other aspects obtained from research and human thought. Visual communication design is not limited to design for printed media but also for digital media which is time-based (time-based image) [4]. It can be said how important is the role of a graphic designer. Therefore, its existence has skyrocketed due to the many requests for needs such as business, advertising, and educational facilities. They are responsible for an appearance to make it look attractive, which can be applied in various forms of promotional materials related to products and the public. Therefore, if someone wants to focus on this profession, the requirements are related to insight, sensitivity, sensitivity, and creativity. In FI9UR's book, Yongky Safanayong said "Designers must be smart, not only strategic but also tactical" [5].

According to data from Manypixels, it can be concluded that there are still many people, especially graphic designers, who have difficulty producing good quality design work. Design becomes more qualified if there is no cheating or plagiarism in the manufacturing process [6]. This has happened before, in the case of a graphic design report by KlikLegal.com, there was a dispute over the industrial design of the *Geprek Bensu* box packaging, which belonged to culinary entrepreneur *Benny Sujono*. This is due to plagiarism or similar visual ideas [7].

It can be said that the expansion of design science is important to minimize this from happening. The key is especially insight, both theoretically and practically in design. Design theory is important because when designers know design theory such as design principles and design trends based on the era, it makes it easier to plan and project design ideas or visual concepts. It is also balanced with the practice of drawing or designing exercises by applying the learning results of the theory.

Therefore, researchers are trying to make a solution in the form of an e-learning design application that can be used by ordinary people who are just learning and novice designers among new students, especially Visual Communication Design majors and workers aged in their 30s who use and need designs for their work. Why is it an e-learning application? The use of mobile technology at this time greatly supports a person's level of efficiency in one application with a variety of features that can support many things. Today's learning methods have many variations, with convenience and a practical system of learning through mobile applications that can make it easier for prospective designers to process.

At this time, researchers conducted research to analyze the problems or challenges experienced by designers and how interested they are in e-learning design applications. The presence of e-learning design application “Dr. Visual” is designed with the availability of theoretical and video learning, workshops, tips, and tricks, mentoring (expert special design and additional services, mental consultation if designers feel tired or bored and need enlightenment if needed) as well as designing discussion forums. It is hoped that increasing knowledge and skills will have a good impact on the quality of a designer's design work.

2. RESEARCH METHOD

This research uses the Design Thinking Method to describe the design process of mobile apps. 5 stages of design thinking are empathized, define, ideate, prototype, and test.

A. Empathize

In this context, the researcher conducted a review by distributing questionnaires to several people who had just studied design and novice designers, that is, new Visual Communication Design (VCD) students as well as workers aged up to 30 years who were in the process of learning design, in fulfilling either assignments or jobs. Questionnaires were distributed online using the g-form. From the results of the questionnaire, it is known that designers already understand and quite routinely attend classes or workshops on graphic design in theory, but still have problems applying it in practice, often experience art blocks, and cannot fully use digital design media. This is the main problem that causes the quality of the work to be less than optimal.

In addition, an interview process was also carried out with 3 sources. Among them are new students majoring in VCD, VCD lecturers and students majoring in Computer Science. The interview was conducted online. A new student majoring in VCD said that the obstacle in graphic design is the use of design applications or software. Interested in trying this application because he had never found one specifically designed for e-learning. Then agree that this application added interesting features such as F2F with Mentor Design, to be able to consult on design developments that have been undertaken and developed from learning while using the application. Plus, the feature of arranging a schedule directly with the mentor.
VCD lecture was agree with this app because it can make it easier for someone to learn design in a more efficient way. If you do it diligently, such as looking for tutorials or attending seminars regularly, you can understand and be good at making graphic designs.

Computer Science students argue the first thing that needs to be done to make an app is to know what problems and solutions users want. Features that are proposed and are in great demand such as F2F with Mentors can be made for different app views, between users and mentors themselves what is it like (Schedule) it will be good if the schedule is fixed so there is already a database, as long as the contract agreement must be F2F what date, what time is it, and what are you doing next. Requires 4-5 kinds of event menus in this app, Home/Dashboard, Course, Schedule, and Events.

No	Statement	Code (In Indonesian)	Score
1	Strongly Agree	SS	1
2	Agree	S	2
3	Neutral	N	3
4	Disagree	TS	4
5	Strongly Disagree	STS	5

TABLE I. SCORING OF QUESTIONNAIRE REPONSES

The descriptive analysis is translated into the Scale Range as follows:

$$RS = \frac{m-n}{b}$$

Description :
SR = Scale Range
m = Total highest score on scale
n = Total lowest score on scale
b = Number of classes or categories created

Thus the category scale can be determined as follows:
1.00 - 1.80 : Very low
1.81 - 2.60 : Low
2.61 - 3.40 : Moderate
3.41 - 4.20 : High
4.21 - 5.00 : Very high

Indicator	STS	TS	N	S	SS	Average
Understand Graphic Design	-	6	84	63	55	2,08
Understand the things that need to be mastered in Graphic Design	1	10	72	88	55	2,26
Understand the career of Graphic Designer	1	22	69	64	60	2,16
Already adept at making designs	2	36	90	32	20	1.80
Average value						**2.07**

TABLE II. QUESTIONNAIRE RESULT

B. Define

Based on the results of the data, the researchers concluded that the designer experienced difficulties in the direct process when creating a work. Still not fully able to apply the results of learning theory into design practice, difficulties in brainstorming design ideas and using digital design media.

C. Ideate

Researchers provide solutions in the form of making e-learning design applications "Dr. Visual". In the application, theoretical and video learning, workshops, tips and tricks, mentoring (specifically for design from experts and additional mentors for mental consultation if you feel tired or bored and need enlightenment if needed) and also design discussion forums.

D. Prototype

In making a guide, there will be three main parts. The first is the theory. Second, case studies, and the third is solutions. While prototyping, the author will use Adobe Illustration.

3. RESULT AND DISCUSSION

Below is the design for the application that will help ordinary people to novice designers to learn more about graphic design. In this part, the app layout remains on small scales. If there may be any possibility to increase the app on a larger scale, extrude can be had to modify the compatibility of the layout and the way the app works.

The design of this app will apply a flat, minimalistic, and clean design style with two main colors and less effects. However, this style will be easier for users to understand. Design with two types, there are Dark and Light Mode to consider the user's eyesight.

Visual Concept

Color. Color has always played an important role in this world. Color can evoke certain emotions that increase one's level of focus and overall impact on the information. The choice of colors used during the development of eLearning content can make a big difference in terms of understanding the eLearning material delivered. Based on many studies regarding the learning area, it is stated that 80% of information is absorbed in the brain through appearance/sight. To catch the attention of e-Learning materials, use warm colors like yellow, red, or orange.

According to color theory, warm colors are more stimulating. Here "Dr. Visual" uses yellow which has an impact on memory. Cool colors tend to be more comfortable to look at. This is likely to make the user's level of comfort to access the application better. So, this app uses the light blue purplish color as a main color by using color gradients that follow current design trends.

In graphic design, the font also plays the main roles to create mood, and atmosphere. Used sans serif, so this app increase simplicity and minimalism, also the readability.

Fig. 1. The landing screen of Dr. Visual

(Source: Author's documentation, 2024)

The picture on the top defines what happened after users decided to open "Dr.Visual". The logo of the app will show. After that users will be given two choices to use the application. There are sign-up choices and login choices. If users already have an account, they can choose login. If they have not made an account, they can choose sign up button. The reason why the sign-up button is blocked with yellow color is to mark the urgency. It makes the user feel the pressure, in a good way because it makes them understand that to use this app, they must do something first like sign-up to create an account. In contrast to the login button, the pressure feels lighter because the user already has an account previously created, at the first time they want to use the app, so all they need to do is log in to use the app.

Fig. 2. The home screen of Dr. Visual
(Source: Author's documentation, 2024)

After that, users could click login to start using Learn UI/UX Application. It is the home screen of Dr. Visual. Mostly, the home screen of a few applications of a few programs includes the software logo, person profile, and most important content material a good way to be the primary motive of the content material a good way to be the primary motive of the application. For Dr. Visual Application, in the home screen will be shown Greeting, user profile, search bar, suggestion courses, and preview courses. In those preview courses, users can know how much material and how long it will take them to study it all.

Fig. 3. The Users Course screen of Dr. Visual
(Source: Author's documentation, 2024)

Figure 3 is an example of how the users view after they choose the material learning and learn them. On the screen, there will be a title "My Courses" so that the users know what the icon for, there are three menus on the top so that users can control their progress of their studies, below of it will be show the preview all of the materials that users chose with the

percentage of their progress per topic.

Fig. 4. The Users Course screen of Dr. Visual
(Source: Author's documentation, 2024)

Figure 4 shows a schedule of the users when they make an appointment with the design mentor they want and can arrange F2F meetings or want to stay online. In this way, users will be able to arrange schedules more flexibly with their design mentors. There will be pop-up at the top of the calendar that shows their history and the upcoming appointment.

Fig. 5. The Events screen of Dr. Visual of Dr. Visual
(Source: Author's documentation, 2024)

Figure 5 shows a few events that will held. Users can freely choose what they want and need by scrolling the scroll bar. It will be two choices that

users can make, book the workshop or webinar or they can choose “remind me” so that later the app will give users notification to reserve or attend the workshop.

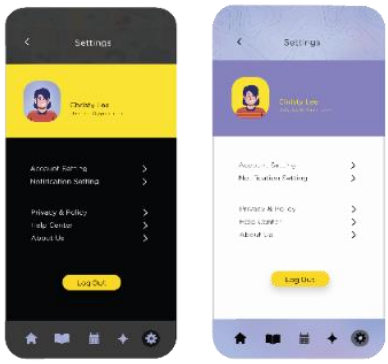

Fig. 6. Setting screen of Dr. Visual

(Source: Author’s documentation, 2024)

Figure 6 shows some settings, where users can choose to set personal accounts, notifications, etc. also they can log out of the account if they want to replace it with a new account or another account.

Graphical User Interface (GUI)

The welcome screen displays the Dr.Visual logo simplified to just a D with visual text below it. It contains a light purple gradient color to emphasize that when studying Graphic Design, we need to be calm to learn optimally and be able to be even more creative in user work.

The next one is the sign-up page, the user who has not made an account must create an account to use the app. While there is a sign-up page, there will always be a login page. The login page is for the user that already has an account and if they want to use the app, they can input their registered email and password. Then users land on the home page, there are usernames mentioned to reach a personal connection between the app and the user. There is search bar and suggestion to the topic also the preview from the amount of the materials and the time. So, users can freely choose the topic that they want. Next feature is my course, where the users can easily control their progression for what they have study, ongoing, and completed. After that users can find a schedule feature that’s they can make an appointment with the mentor F2F or just online. This feature, users can easily discuss problems or developments from the results of their artworks after taking intensive self-learning. The next one is events, this feature provides information about workshops, or webinar that will be held. Users can easily see the preview and choose the topic that suitable with user. After that, there’re two options to choose, book or remind me. The last feature is settings. Users can freely change their account, notification, etc. Also provide log out system if they what to change account or want to make a new one.

Prototype Testing

To evaluate the existing prototype, a semantic differential survey was conducted online via Google Form, consisting of 10 sets of adjectives where user targets may share their views regarding the design between 10 sets of adjectives. Semantic differential itself is a method to process the findings which could be used to set the hierarchy of criteria pertaining to the advantages of engaging in professional activity [17]. Users’ view on the design can be seen in Table 3.

Adjective 1	1	2	3	4	5	6	7	Adjective 2
Passive						■		Active
Inefficient							■	Efficient
Complicated						■		Easy to understand
Boring						■		Interesting
Cluttered					■			Organized
Confusing					■			Informative
Complex					■			Simple
Inconvenient							■	Convenient
Dull					■			Vivid
Varied							■	Consistent
Tiring							■	Engaging

TABLE III. PROTOTYPE TESTING RESULT

The overall evaluation of Dr. Visual mobile application received a positive response from audience. This feedback can be crucial for understanding user satisfaction and identifying the features that resonate most with the audience. A predominance of positive ratings suggests that the prototype aligns well with the expectations and preferences of its target users, thereby providing valuable insights for further refinement or development. Ultimately, positive feedback gathered through the Semantic

Differential Scale offers both qualitative and quantitative data, which can inform design decisions and enhance the product's market readiness.

4. CONCLUSION

In this paper, Dr. Visual is proposed to help people who never had an experience in design But, willing to learn design graphic and novice designers who still need more learning materials about design graphic. It is hoped that this application can help improve the quality of graphic design work. It is equipped with various features, such as learning material, my course to analyze the progress of studies, calendar that can make appointment and connection to a mentor, and lastly events so that users update with workshop or webinar. Hopefully, this application can be used to improve the quality of graphic design work and users can learn anywhere and anytime they want.

In conclusion, the research on optimizing design education through mobile applications highlights the transformative potential of technology in enhancing learning experiences. By integrating mobile applications into design curricula, educators can provide students with flexible, accessible, and interactive tools that cater to diverse learning styles. This approach not only fosters creativity and collaboration but also prepares students for the demands of a rapidly evolving digital landscape. As design education continues to adapt, embracing mobile technology can lead to more engaged learners and innovative thinkers, ultimately bridging the gap between theoretical knowledge and practical application in the field. Future studies should focus on refining these applications and exploring their long-term impact on design competencies and industry readiness.

STATEMENT OF APPRECIATION

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