JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. X No 2, Maret 2024, hlm. 307 - 314 ISSN 2550-0201 (Online)
DOI: http://dx.doi.org/10.33330/jurteksi.v10i2.3053
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

DESIGNING UI/UX OF DOCTOR'S CONSULTATION APPLICATION USING DESIGN THINKING METHOD

Wenti Risma Damayanti[1*], Adam Prayogo Kuncoro[1], Pungkas Subarkah[1], Rujianto Eko Saputro[2]
[1]Informatics,Universitas Amikom Purwokerto
[2]Information technology,Universitas Amikom Purwokerto
email: *wrismadamayanti@gmail.com

Abstract: For all people in the world, the application of information and communication technology has become something that is used in everyday life. All information can be accessed easily using current developments in various technologies. The process of searching for various information on the internet has become a habit of today's society. One of the information that people often seek is about health. Several available online health consultation service applications provide considerable benefits for all users. One method used for the UI and UX design process is design thinking. The average user of the application is 18-35 years old. The user interface provided in this application is not yet user friendly, especially for the elderly. User interface (UI) and user experience (UX) are important so that users feel comfortable when using an application.

Keywords: information technology; consulting application; UI/UX; design thinking

Abstract: Bagi seluruh masyarakat di dunia, penerapan teknologi informasi dan komunikasi menjadi hal yang sudah digunakan dalam kehidupan sehari-hari. Seluruh informasi dapat diakses dengan mudah menggunakan perkembangan berbagai macam teknologi saat ini. Proses mencari berbagai informasi di internet sudah menjadi kebiasaan masyarakat saat ini. Salah satu informasi yang sering dicari oleh masyarakat yaitu tentang kesehatan. Beberapa aplikasi layanan konsultasi kesehatan online yang tersedia memberikan manfaat yang cukup besar bagi seluruh pengguna. Salah satu metode yang digunakan untuk proses desain UI dan UX adalah design thinking. Pengguna aplikasi tersebut rata-rata berusia 18-35 tahun. Tampilan user interface yang disediakan pada aplikasi tersebut belum bersifat user friendly, terutama bagi kalanagn lansia. User interface (UI) dan user experience (UX) menjadi hal penting supaya pengguna merasakan kenyamanan pada saat menggunakan sebuah aplikasi.

Keywords: teknologi informasi; aplikasi konsultasi; UI/UX; design thinking

INTRODUCTION

One of the information that is often sought by the public is about health. One way to maintain health is done by consulting with health experts. Currently, there are various websites or applications that provide online health service offerings [1]. Some of the current online health consultation services include Alo Dokter, Klik Dokter, and Halodoc. App users are 18-35 years old on average. In fact, someone over the age of 35 also needs to use an online health

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. X No 2, Maret 2024, hlm. 307 - 314 ISSN 2550-0201 (Online)
DOI: http://dx.doi.org/10.33330/jurteksi.v10i2.3053
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

consultation service application. Some users complain if they still find it difficult to use the application. The user interface provided in the application is not yet user-friendly, especially for the elderly. An elderly person certainly needs the help of those closest to him in operating health service applications. Seeing these conditions, UI/UX design innovations are needed that facilitate the use of healthcare applications [2]. One of the methods used for the UI and UX design process is design thinking. Design Thinking is an approach that focuses on user needs for innovation, thus making an application product better because it provides effective solutions to problems [3].

As for some previous studies used as literature review material, the research was conducted by [4] explained the complexity of the features in the doctor's click and SUS testing was carried out to determine the application's user satisfac tion score.

Further performed by [5] condu cting data analysis with PLS techniques in the Alodokter application, The results of this study only provide input to broaden their views in increasing interest in using the Alodokter application.

Research by [6] Analyze the design of the Alodokter application then provide recommendations so that the application is even better.

Research by [7] Data was collec ted as many as 300 comments from several applications. The analysis results showed that the lowest number of negative comments was Doctor Click, with an accuracy rate of 98.57%. Follow ed by Halodoc with an accuracy rate of 82.86%, and Alodokter with an accuracy rate of 62.86%.

Research by [8] conducted analy sis using IBM SPSS Statistics 26 involving 107 samples. The results showed a significance value of less than 0.05, indicating that optimizing the spre ad of ads across various digital channels is a top priority to increase user awaren ess of healthcare applications.

Research by [9] Evaluation using User Experience Questionnaire (UEQ) via Google Form with 20 participants showed that the comparison between the Halodoc application was considered posit ive, while Alodokter was quite positive.

Research by [10] perform analy sis on the application telemedicine From feedback, there was 112.013 positive sentiment, 34.853 neutral sentiment, and 97.228 negative sentiment.

Research by [11] Research shows the quality of Simpel Pol: correctness 53. 8%, reliability 31.6%, efficiency 26.4%, integrity 52.8%, usability 29.2%. In total, the quality is 74.36%. Correctness and integrity are good, while reliability, usabi lity, and efficiency are not good. Overall, Simpel Pol has good quality.

Research by [12] Taking the ques tionnaire 412 responses showed factors such as Information Quality, Usability, Ease of Use, and others affecting the User Satisfaction of the HaloDoc app. These findings are useful for stakeholders to improve the quality and usage of the application.

Therefore, this research is differe nt from previous research. If the previous study only discussed the level of satisfaction and analysis of health applica tion users, while this study conducted application analysis and user needs. Not only that, this study also provides suggest ions for the design of doctor consultation applications that can be accessed by all ages. After making the design is complete, testing is carried out using the SEQ method.

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. X No 2, Maret 2024, hlm. 307 - 314 ISSN 2550-0201 (Online)
DOI: http://dx.doi.org/10.33330/jurteksi.v10i2.3053
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

METHOD

In this study, a design thinking method was used to create or design UI / UX for doctor counseling applications. This method is known as a compre hensive thinking approach, which focuses on creating solutions that begin with understanding user empathy aimed at producing continuous innovation accord ing to user needs (human centered) [13]. Design thinking itself has five stages in designing a product, including emphat ize, define, ideation, prototype, and test [14]. Image 1 is the stage of this study

Image 1. Stages of Design Thinking

Emphatize

Emphatize or empathy is the initial process in design, this is because empathy is at the core of the user-centered design thinking stage [15]. This stage understands the user in the context of the product to be designed by doing several ways such as observation, intervi ews from both of which are combined by providing scenarios first.

Define

Define is a step in clearly defini ng the real problems experienced by users when they use a product. The pro blems identified are the results collected at the emphatize stage which are then analyzed to determine the core problems to be identified [16].

Ideate

Ideate is a stage where it is a tran sitional step from formulating a problem to solving it. At this stage, attention is focused on the creation of ideas or ideas as a foundation in making design proto types. This stage also serves as a moment of identification of user motivations and needs, as well as generating ideas thro ugh the brainstorming process [17]. The main goal of this stage is to generate as many new points of view and ideas as possible.

Prototype

Prototype is the process of designi ng or designing a product from the results of ideas or concepts that have been obta ined previously and turned into solutions that will be applied as a prototype, but before going to the prototype stage, resea rchers must make user flow, wireframes, design systems, and mockups first.

RESULT AND DISCUSSION

Emphatize

In this emphatize process, conduct direct observations and interviews with potential users of the application to be created. Observation is done by observing one of the competitor applications by looking at the rating on the Google Play Store.

Define

In this define stage, the process of preparing the problem is carried out by making paint points and how-might we. Image 2 is the pain point and Image 3 is the result of how-might-we.

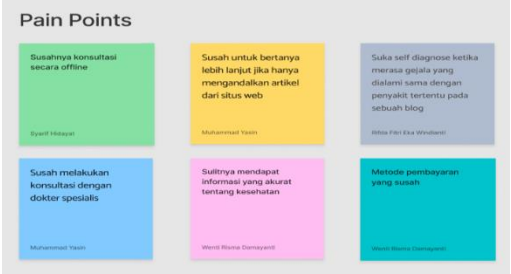

Image 2. Pain Points

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. X No 2, Maret 2024, hlm. 307 - 314 ISSN 2550-0201 (Online)
DOI: http://dx.doi.org/10.33330/jurteksi.v10i2.3053
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

Table 1. Example of a compotitor application user persona

No.	List of Needs
1	The Doctor Consul application can be used easily
2	The appearance of the application must be user friendly, using guidelines for choosing colors, icons, and fonts
3	Can make it easier to consult online
4	Can simplify the payment process by providing payment features without seeing third parties
5	Articles from the doctor's consul application if using medical language should be given meaning in parentheses ().

From the results of pain points and how-might-we above, conclusions can be drawn for the list of needs as in table 1.

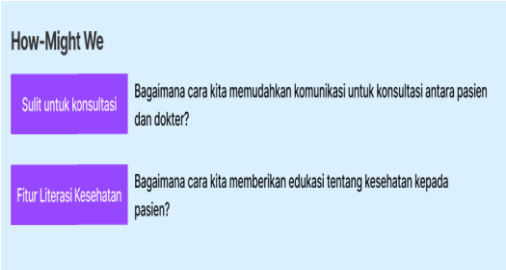

Image 3. How-Might We

Ideate

This stage is used to provide a solution to a problem. The solution in terms of these problems can be seen in Image 4.

Image 4. Solution To Application Problems

After the ideation stage, the affinity salt is made. Image 5 is an Affinity Diagram.

Image 5. Affinity Diagram

Furthermore, from the results of grouping ideas in the affinity dia-gram process, the next step is to create a user flow that will be used in the application. In this study there are two user flows, namely the doctor's application user flow contained in Image 6 and the consultation history user flow in Image 7 and then in Image 8 there is a profile user flow.

Image 6. User Flow Doctor Application

Image 7. User Flow Concultation History

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. X No 2, Maret 2024, hlm. 307 - 314 ISSN 2550-0201 (Online)
DOI: http://dx.doi.org/10.33330/jurteksi.v10i2.3053
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

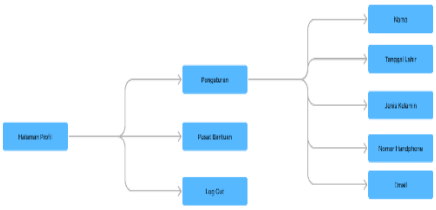

Image 8. User flow profil

Prototipe

This stage is the process of creating a visual design that will serve as a communication medium for users when interacting with the system. The purpose of creating prototypes is to help designers understand more easily the problems, ideas, and user experiences that occur when interacting with the system.

Wireframe

Wireframes are a basic version of app design that makes it easy for designers to layout elements in an app. The wireframe can be seen in Image 9.

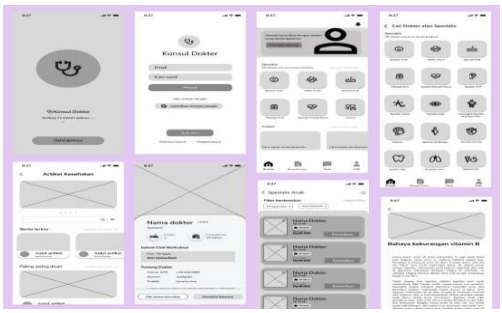

Image 9. Application wireframe

Mockup UI

Mockup is an advanced stage that aims to perfect the wireframe that has been made before. If at the wireframe stage, the appearance is only presented in a simple way using black and white colors only, then at the mockup stage, the product begins to look clearer. Image 10 is a mockup of the UI of this application.

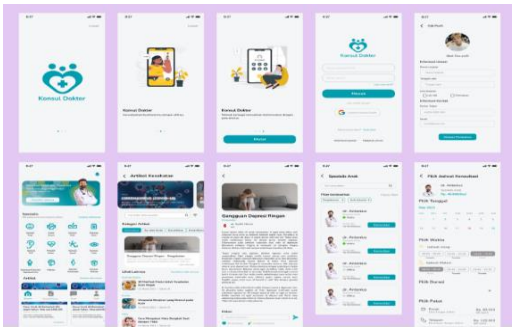

Image 10. Application Mockup

Testing

In the testing process, the Single Ease Question (SEQ) method is used which only contains one general question such as "How do users rate the doctor's consul application?" which is answered on a Likert scale from 1 to 7. The higher the number given by users, the more satisfied they are using the application. Table 2 is the SEQ scoring matrix.

Table 2. Result SEQ

Variable	Interprestasi
1	Very Difficult
2	Difficult
3	Not Easy
4	Simply
5	Not Difficult
6	Easy
7	Very Easy

This stage involves 5 participants who match the criteria that have been determined previously, each of the participants will test the doctor's consul application that has been prototyped. Table 3 is a test scenario for the doctor-consul application that must be followed by participants.

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. X No 2, Maret 2024, hlm. 307 - 314 ISSN 2550-0201 (Online)
DOI: http://dx.doi.org/10.33330/jurteksi.v10i2.3053
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

Table 3. Application testing scenario

User goal	Task	Scenario
Task 1 Sign Up and Log In	Please register and enter the doctor's consul application	Research provide prototyping links to participants Participants prototype according to the scenario Participants shared their experiences using the doctor's counseling application
Task 2 See a specialist doctor	Please see a specialist doctor	
Task 3 Booking a consultation	Please place ab order for consultation	
Task 4 Payment	Please make payment with the desired payment method	
Task 5 Notification	Please open the notification page	
Task 6 View Article	Have a look and read one of the available articles	
Task 7 Transcation History	Please open the consultation history menu	
Task 8 Change Schedule	Please change the consultation schedule	
Task 9 Message	Please open the message menu	
Task 10 Profile	Please edit your profile	
Task 11 out	Please exit the application	

From the results of testing the doctor's consul application which was attended by 5 participants from 11 tasks, with a rating scale of 1-7 to determine how effective the doctor's consul application was used, getting an average of 73.4. The score is then divided again by the number of tasks, the final result is 6.67. Soit can be concluded that the design of this doctor's consultation application falls into the category of easy-to-understand use.

After testing the doctor's consul application, it produces an overall score in table 4.

Table 4. Overall value of application testing

Respond	1	2	3	4	5	Average
Task 1 Sign Up and Login	7	6	7	7	7	6.8
Task 2 Specialist Doctor	7	7	6	6	7	6.6
Task 3 Booking a consultation	6	6	6	7	7	6.4
Task 4 Payment	7	7	7	6	6	6.6
Task 5 Notification	6	7	6	7	7	6.6
Task 6 View Article	7	7	7	6	7	6.8
Task 7 Transaction History	7	6	7	7	7	6.8
Task 8 Change Schedule	6	7	6	7	7	6.6
Task 9 Message	7	7	7	7	6	6.8
Task 10 Profile	7	6	7	7	7	6.8
Task 11 out	7	6	6	7	7	6.6

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. X No 2, Maret 2024, hlm. 307 - 314 ISSN 2550-0201 (Online)
DOI: http://dx.doi.org/10.33330/jurteksi.v10i2.3053
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

CONCLUSION

After carrying out various stages, it is concluded that the UI/UX Design of Doctor's Consult Application using the Design Thinking method is more effective in solving a problem experienced by users. In addition, the components contained in this Doctor Consul application have met the criteria and have a good level of convenience with an average SEQ value of 6.67. Therefore, the UI/UX design of this doctor's consul application is very suitable for use because it meets user needs. However, this design can be further developed by adding various new features in the application, such as discount vouchers, features of the nearest accessible health services, providing a desclaimer explaining that the information created is not a substitute for medical consultations, adding other features that are still not available.

BIBLIOGRAPHY

[1] R. W. Purwitasari, P. D. Y. Nainggolan, N. Rahmawati, F. D. Adhinata, And N. G. Ramadhan, "Ui/Ux Webinar Booking Design For User Satisfaction Using Design Thinking Method," *Jurikom (Journal Of Computer Research)*, Vol. 8, No. 6, P. 350, Dec. 2021, Doi: 10.30865/Jurikom.V8i6.3700.

[2] M. A. Krisnanda, R. S. Sianturi, And A. P. Kharisma, "User Experience Design Of Mobile-Based Workshop Booking Application Using Design Thinking Method. (Harto Motors Workshop Case Study)," 2022. [Online]. Available: Http://J-Ptiik.Ub.Ac.Id

[3] S. P. P. Dika and U. Chotijah, "Design of Ui/Ux Design Of Digital Checksheet Application At Pt. Petrokimia Gresik Uses Design Thinking Method," *Journal Of Informatics And Science Education*, Vol. 11, No. 2, Pp. 119–134, Dec. 2022, Doi: 10.31571/Saintek.V11i2.4627.

[4] C. A. Maarende, D. Sebastian, And R. Restyandito, "Interface Design Based on Evaluation Of Reusability Of Using Klikdokter Application For The Elderly And Elderly," *Journal Of Informatics Engineering And Information Systems*, Vol. 7, No. 3, Dec. 2021, Doi: 10.28932/Jutisi.V7i3.4081.

[5] K. Yoga And K. Pradita, "A R T I C L E I N F O Determinants Of Factors Affecting E-Trust And Interest In Using The Alodokter Application," *Journal Of Science And Humanities Research And Development*, Vol. 5, No. 3, Pp. 450–457, 2021, [Online]. Available: Https://Ejournal.Undiksha.Ac.Id/Index.Php/Jppsh

[6] A. Liastri, "Analysis Of The Alodokter Application System Using The Heuristic Evaluation Method."

[7] N. R. Wardani And A. Erfina, "Analysis Of Public Sentiment Towards Doctor Consultation Services Using Naive Bayes Algorithm," 2021.

[8] H. Agung, R. Farady Marta, V. Virshella, And U. Bunda Mulia, "Measuring Lifebuoy Ad Exposure In Building Awareness Of Klikdokter Application Users During Pandemic Covid-19," 1443.

[9] N. Okabashi Hendrawan, E. Muhammad, A. Jonemaro, And M. T. Ananta, "Comparative Analysis

Of User Experience On Halodoc And Alodokter Applications Using User Experience Questionnaire (Ueq)," 2023. [Online]. Available: Http://J-Ptiik.Ub.Ac.Id

[10] S. Mutmainah, D. Hatta Fudholi, And S. Hidayat, "Journal Of Media Informatics Budidarma Sentiment Analysis And Topic Modeling Of Telemedicine Applications On Google Play Using Bilstm And Lda," 2023, Doi: 10.30865/Mib.V7i1.5486.

[11] M. Andini And G. F. Fitriana, "Quality Analysis Of Simple Pol Applications Using Mccall Method," *Jurikom (Journal Of Computer Research)*, Vol. 9, No. 3, P. 680, Jun. 2022, Doi: 10.30865/Jurikom.V9i3.4192.

[12] J. Education And D. Counseling, "Analysis Of Factors Affecting The Use And User Satisfaction Of Halodoc App."

[13] T. I. Sugiharti and R. Mujiastuti, "Making Mimopay Application Prototype with Design Thinkingid Method* *Corresponding Author," 2023. [Online]. Available: Https://Jurnal.Umj.Ac.Id/Index.Php/Just-It/Index

[14] C. S. Surachman, M. Riyan Andriyanto, C. Rahmawati, and P. Sukmasetya, "Implementation of Design Thinking Method in UI/UX Design Dagang.In Application."

[15] R. W. Purwitasari, P. D. Y. Nainggolan, N. Rahmawati, F. D. Adhinata, and N. G. Ramadhan, "Designing UI/UX Webinar Booking for User Satisfaction Using Design Thinking Method," *Jurikom (Journal of Computer Research)*, Vol. 8, No. 6, P. 350, Dec. 2021, Doi: 10.30865/Jurikom.V8i6.3700.

[16] J. Reimon Batmetan, T. Komansilan, And A. Parera, "Model Design Thinking Pada Perancangan Aplikasi Mobile Learning." [Online]. Available: Www.Unima.Ac.Id/Lppm/Ismartedu

[17] M. Yusril, N. Putra, J. Informatika, F. T. Industri, and S. N. Huda, "Literature Review with Design Thinking Development Approach for Information Systems Spp Case Study and Scholarship."