

Designing an Academic Website User Interface Using the Design Thinking Method

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Abstract

As an educational institution, Telkom University Surabaya (TUS) has academic-related information media that applies to students in the form of academic websites. However, the presentation and management of information regarding academic business processes through the official TUS academic website still has several obstacles. The website has not been managed in a structured manner and is able to provide an easy-to-use experience for users in accessing information. Therefore, this study aims to improve the business process of the TUS academic website to be more informative, structured, and have a modern and user-friendly user interface (UI / UX) design. The research method used is based on a user-centered design approach using design thinking. Design Thinking is a method with an iterative approach that identifies problems and needs of users, with the aim of creating designs that can understand and provide innovative solutions for users. The final result of this research is to create an interface that is easy to understand, responsive, and reflects the characteristics of Telkom University Surabaya (TUS).

Abstract

Sebagai sebuah lembaga pendidikan, Universitas Telkom Surabaya atau Telkom University Surabaya (TUS) memiliki media informasi terkait akademik yang berlaku untuk mahasiswa berupa *website* akademik. Namun, penyajian dan pengelolaan informasi mengenai proses bisnis akademik melalui *website* akademik resmi TUS masih memiliki beberapa kendala. Situs *website* tersebut belum dikelola secara terstruktur dan mampu memberikan pengalaman yang mudah digunakan bagi pengguna dalam mengakses informasi. Oleh karena itu, penelitian ini bertujuan untuk meningkatkan proses bisnis *website* akademik TUS agar lebih informatif, terstruktur, dan memiliki perancangan antarmuka pengguna (UI/UX) yang modern dan ramah bagi pengguna. Metode penelitian yang digunakan adalah berdasarkan pendekatan desain berpusat pada pengguna dengan menggunakan *design thinking*. *Design Thinking* merupakan suatu metode dengan pendekatan secara berulang yang mengidentifikasi masalah dan kebutuhan dari pengguna, dengan tujuan menciptakan desain yang dapat memahami dan memberikan solusi inovatif bagi pengguna. Hasil akhir dari penelitian ini adalah menciptakan tampilan antarmuka yang mudah dipahami, responsif, dan mencerminkan karakteristik TUS.

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1. INTRODUCTION

The rapid development of technology and information can provide new media, one of which is the emergence of the internet and has influenced various aspects of life. The Ministry of Communication and Information (Kemenkominfo) revealed that internet users in Indonesia currently reach 63 million people (Kominform, 2023). And also based on the results of a survey conducted by the Indonesian Internet Service Providers Association (APJI), it was found that in the 2021-2022 period Indonesia had 210.33 million internet users. This number increased by 6.78% from the previous period which only amounted to 196.7 million users. With this phenomenon, internet penetration in Indonesia increased to 77.02% (Kurniawan, Rokhmawati, and Rachmadi 2018). This illustrates how inseparable information and communication technology are in society's social interactions. In this era

of globalization and sophisticated technology, information has an important role in various layers of life. and information not only impacts businesses and organizations, but also individuals, society, education and government. According to Prayitno & Erman Amti, information services are the activity of providing understanding to interested individuals about various things needed to carry out a task or activity, or to determine the direction of a goal. Information is something that is priceless (Prayitno & Erman Amti, 2004). Likewhich was emphasized by Hartono, that information is like blood that flows within the body of an organization so that if a system lacks information it will decay, become stunted and eventually die (Hartono, 1990). Education is one example where information plays an important role where the ease of accessing information through technology provides great benefits for students in accessing various learning resources and additional information.

Technological advances have brought innovation and convenience, especially for students, to be able to access various sources and information (Widiyantoro et al. 2022). One of the most influential tools in this development is the website. A website is an online medium that presents information in various forms such as text, images or videos, which can be accessed online from anywhere. The importance of a good website in the world of education can be seen from its characteristics, including responsiveness and good loading speed (Inge, 2022). The TUS academic website is an important source of information for students, because the presence of structured and user-friendly information has a direct impact on policy decisions and steps taken by the institution. The importance of ensuring that students have a good experience when using information media cannot be ignored.

According to Mads Soegaard, effective information media must enable users to achieve their goals effectively and efficiently (usable), provide ease in finding the information needed (findable), and provide value not only to users, but also to related parties (valuable) (Soegaard, 2002). It can be concluded that in the world of education, the design of the TUS academic website interface aims to ensure that students get better information, and provide structured and user-friendly access to relevant information. What connects users with websites or technology is called a user interface. This user interface itself has different designs based on its function and needs (Nurlifa, Kusumadewi, & Kariyam, 2014).

In practice, the old academic website interface was not managed in an informative and structured manner. This was expressed by the interviewee in the interview process as follows:

"... the information on our academic website is a lot of information but it is mixed, information that is old and unused is still installed, then the menu also has a lot of classifications and is less structured, so users are often confused when they want to access information on the website..." (Results of pre-research interview with Mrs. Nurina Hendri Wardina, Academic Development Staff, Tuesday, 22 August 2023 in the 2nd Floor Academic Room, Telkom University Surabaya)

Then, due to the large amount of information and content that is not updated and the design is not modern, it requires designing the interface to be an up to date and more modern website. The interface design aims to make users feel comfortable and obtain academic information more easily. This was expressed by the interviewee in the interview process as follows:

"... the current academic website's interface design is still lacking, the model is really a WordPress template and the design is basic, plus the content is only updated occasionally and if we just want to add information to the existing menu, we don't think much further about modern design. and user friendly..." (Results of pre-research interview with Mrs. Rokhmatul Insani, Head of Academic Affairs,

Tuesday, August 22 2023 in the Academic Room, Floor 2, Telkom University Surabaya)

The problem that can be formulated in this research is that the existing TUS academic website is still lacking in information and structure. Important information is often not spread in clear places, making users, namely students, lecturers and campus staff, have difficulty accessing the information they need. The services provided by the TUS academic website have not been fully mapped and described in a good and structured manner. This results in confusion in the process of using these services. Then, the user interface (UI/UX) design of the TUS academic website still does not present modern and user-friendly information.

The main objective of this research is to create a TUS academic website that is informative, well structured, and has a modern and user-friendly user interface design. By redesigning the TUS academic website, the institution will be able to provide a better user experience to students, lecturers and campus staff. In addition, by better mapping and describing academic services, users will find it easier to access and utilize the various services provided. The results of this research can improve the functionality of information access needs in the operations of academic institutions, as well as make a positive contribution in creating academic information that is more modern and user-friendly.

2. RESEARCH METHOD

Method *Design Thinking* carried out to find creative solutions that combine analytical thinking, practical skills, and creativity in thinking. There is an advantage that will be obtained, namely producing a solution that uses User Experience Design using the Design Thinking method, which is a human-centered method which aims to find ideas as solutions to existing problems by collaborating between developers and potential users to obtain creative ideas and produce output. innovative with stages as shown in the following picture:

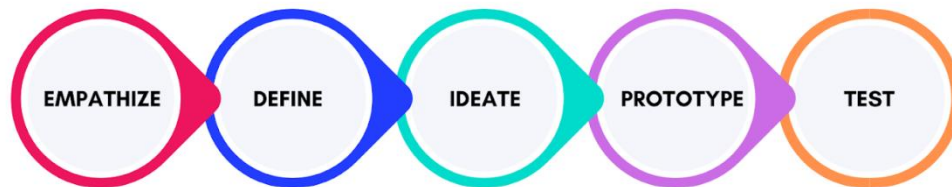


Figure 1. Design Thinking Research Method

a. *Empathize* (Empathy)

Empathize (empathy) is a core process because problems that arise must be resolved in a human-centered way. This method seeks to understand the problems experienced by users so that we can feel and find solutions to these problems. In this method, there are several things that must be done, namely interviews, observation, as well as combining observation and interviews.

b. *Define* (Determination)

Define is analyzing and understanding the results that have been carried out in the Empathize process. The process of analyzing and understanding various insights that have been obtained through empathy, with the aim of determining the problem statement as the point of view or main concern in the research.

c. *Ideate* (Idea)

Ideate is a transition process from problem formulation to problem solving, while the Ideate process will concentrate on generating ideas or thoughts as a basis for creating a prototype of the design that will be made.

d. *Prototype* (Prototype)

Prototype known as the initial design of a product to be made, to detect errors early and obtain new possibilities. In its implementation, the initial design created will be tested on users to obtain appropriate responses and feedback to improve the design.

e. Test (Trials)

Test or testing is carried out to collect various user feedback from various final designs that have been formulated in the previous prototyping process. This process is the final stage but is life cycle in nature so it allows repetition and returning to the previous design stage if there are errors.

3. RESEARCH RESULTS AND DISCUSSION

a. Empathize (Empathy)



Figure 2. Stages of empathize with sources

In the initial stage, direct interviews and observations were conducted with academic staff at TUS, namely Mrs. Iin as head of the academic section and Mrs. Dina as academic development staff. Observations were carried out by observing the process of managing and presenting information on the old academic website, while interviews were carried out in the TUS academic room. In the research, several problems were found, namely:

1. *Website* The existing TUS academics are still lacking in information and structure.
2. The interface design (UI/UX) of the TUS academic website is still not modern and user friendly.

b. Define (Determination)

This stage is carried out after obtaining the results of interviews and observations carried out in the previous stage. At this stage we begin to analyze and formulate the existing problems, based on the results of the data obtained, around 25 people who are members of lecturers, staff and students feel that they are not satisfied with the appearance of the TUS academic website interface which is currently still less structured which means that information cannot be conveyed. clearly to website visitors and the design is not yet modern and user friendly.

c. Ideate (Idea)

Referring to the previous stage, namely Define, the idea that will be created is based on the core problem on the website, namely the UI/UX interface of the academic website. The target users of this website are 6 staff and lecturers from the internal academic department. So the website used must be simple but can attract users at Telkom University Surabaya. In order to adapt to problems, the output of website interface design must have informative and structured criteria and the website must be modern and user friendly.

d. Prototype (Prototype)

After going through the three processes above, next we will carry out the process of prototyping the website that will be created. Then create a digital prototype as a reference for the website simulation design process. The website flow is designed as follows.

Below is the flow of creating a website using Digital Prototype.

a. Landing Page View

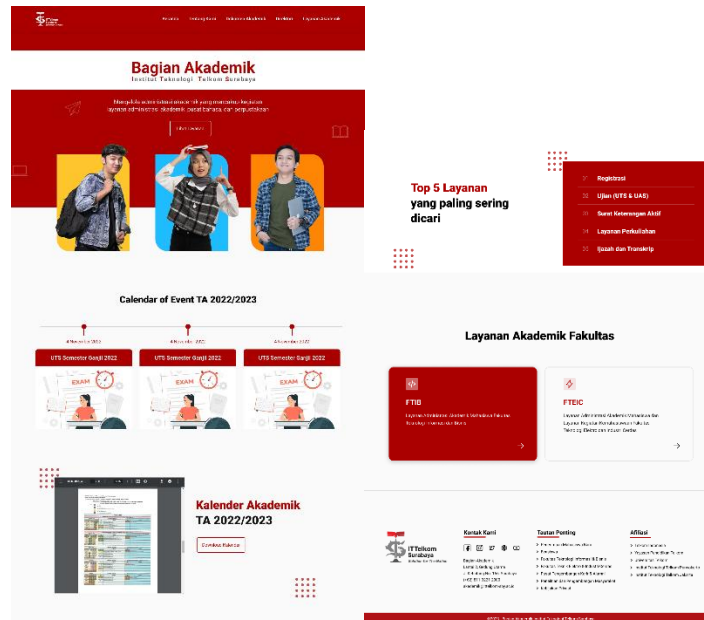


Figure 3. Academic website landing page display

In Figure 1.3, the website landing page is an initial display that shows the menu and design in outline which will be accessed by users when they first enter the TUS academic website, related to the menu and functions needed by the user, such as at the top there is the homepage, about us, academic documents, directories, academic services and there is also information related to the academic calendar, the top 5 most frequently searched services and academic services for FTIB and FTEIC faculties. At this stage the user can choose by pressing one of the menus in the desired section. After the user selects the menu above, the user can select and adjust the information needed.

b. Header and Footer Display



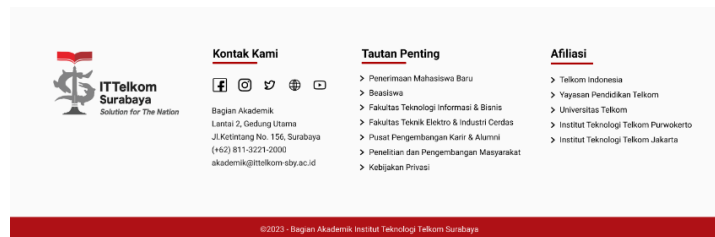


Figure 4. Header and Footer display of the Academic website

In Figure 4, there is a header display on the website, which is the part that appears at the top which includes the main menu and parent directory of the sub menu. At the top, users can see the homepage, about us, academic documents, directory, and academic services. Meanwhile, the footer section is the section at the bottom. The footer on the website contains detailed information regarding the website such as our contact, important links and affiliates.

c. About Us View

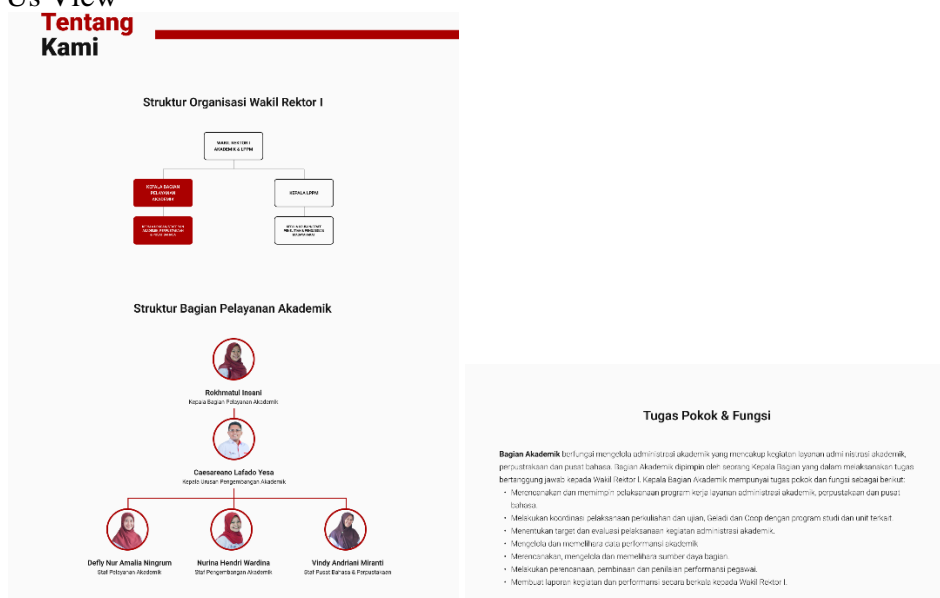
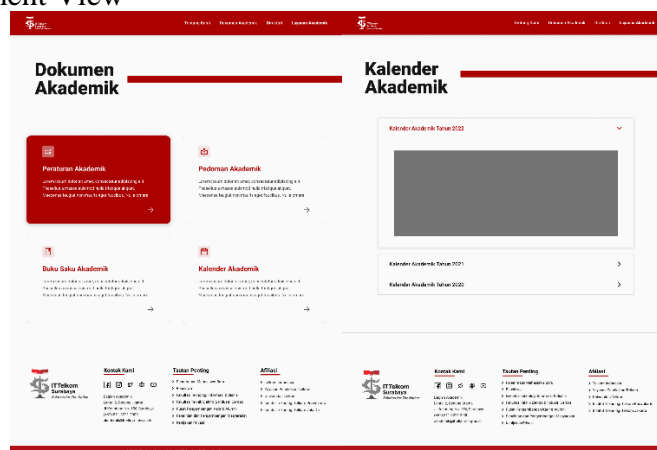


Figure 5. Appearance of the About Us Academic website page

In figure 5, after seeing the initial display, users can see the about us display. In the about us display there is the organizational structure, academic section structure as well as the main tasks and functions of the organization.

d. Academic Document View



(a)

(b)

Figure 6. Document website page display (a) and academic calendar (b)

In Figure 6, users can see academic documents consisting of academic regulations, academic guidelines, academic pocketbooks and academic calendars. Figure 6 shows that if the user selects the “Academic Calendar” option, the screen display will display information related to the academic calendar for each year.

e. Directory View

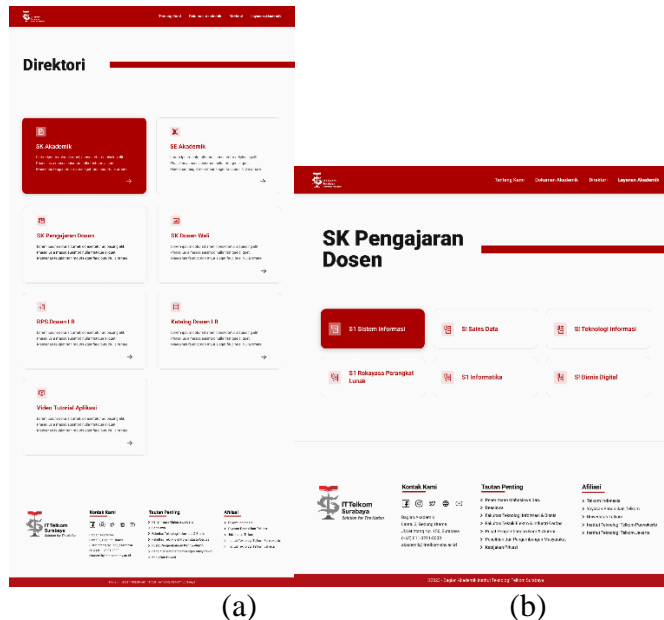


Figure 7. Directory website page display (a) and Academic Lecturer Teaching Decrees (b)

In Figure 7(a), there is a website display that provides a directory for users to obtain more detailed information about academic decrees, extracurricular decrees, lecturer teaching decrees, guardian lecturer decrees, lecturer personal study plans (RSP), learning institution lecturer catalog (LB). , and also application tutorial videos. If users want more in-depth information regarding lecturer teaching decrees, they can easily choose the "lecturer teaching decree" option which is located on the left side of the screen. Figure 7(b) displays the faculty options you want to know, namely FTIB or FTEIC. After selecting FTIB, the user will be directed to a display as shown in Figure 7(c), which displays the study program options available at FTIB. There are six study program options to choose from, starting from Bachelor of Information Systems, Bachelor of Data Science, Bachelor of Information Technology, Bachelor of Software Engineering, Bachelor of Informatics, to Bachelor of Digital Business.

f. Academic Services View

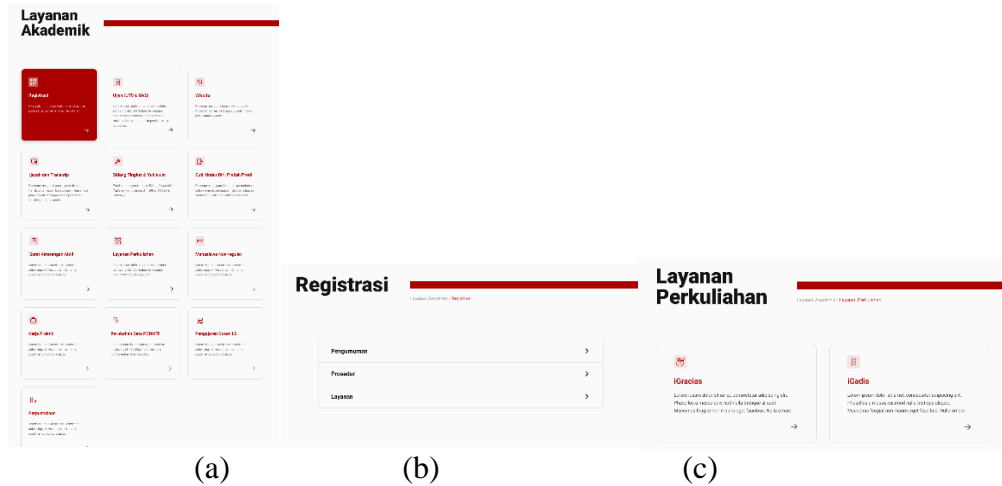


Figure 8. Service website page display (a), registration (b) and lecture services Academic

Figure 8(a), shows the various academic service options available to users. Figure 8(b), shows that when the user selects the "Registration" option, the screen display will present a selection of information regarding announcements, procedures and services related to the registration. If the user wants to return to the previous page as shown in Figure 8(a), the user can easily press the "Academic Services" option located at the top right corner of the screen. In Figure 8(c), if users select the option "iGracias," they will be directed to the iGracias website. There, users will be able to access student data and information by entering the appropriate username and password.

g. Test (Try Out)

In this final stage, the testing process can be carried out using the digital prototype that has been created. Testing was carried out with 6 respondents, lecturers and internal academic staff by providing website prototypes and questionnaires to the respondents.

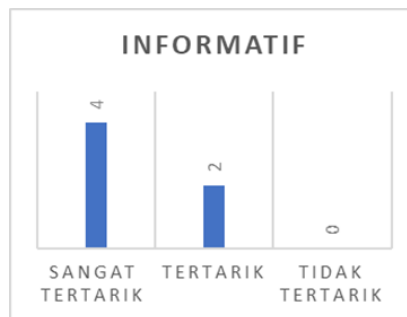


Figure 9. Informative questionnaire graph for academic websites

In the results of the questionnaire regarding informativeness, it can be seen that users feel that there is a better difference compared to previous websites which tended to be difficult to find information. From the results of the questionnaire, it can be seen directly that 2 respondents showed interest in this statement and 4 other respondents also stated that the appearance of academic websites was more informative than before.

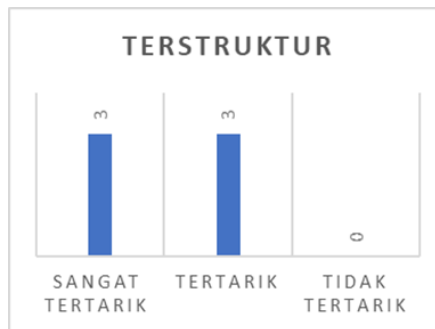


Figure 10. Structured questionnaire graph for academic website

In Figure 10, it can be seen that 6 respondents agreed that the academic website design was well structured.

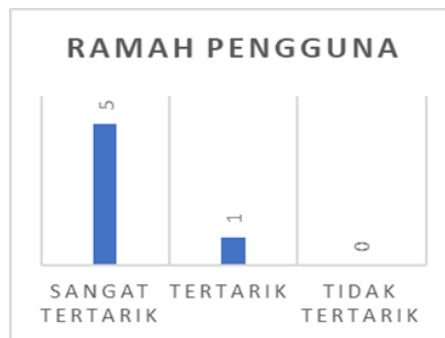


Figure 11. User-Friendly Questionnaire Graphic for Academic Websites

Most respondents thought that the interface design of this academic website was very attractive and very easy to understand. They also stated that there was nothing else that needed to be added, because the design of this website was presented attractively.

4. CONCLUSION

After going through the process of empathize, define, ideate, prototype and test, it can be concluded that the website interface design that has been created has met the expectations of users regarding the fulfillment of functions in the form of informative and structured. Also, in terms of design, it is presented in a modern and user-friendly manner. This is proof that the Design Thinking approach applied has succeeded in creating a positive user experience and meeting the basic needs of academic website users. Therefore, it is hoped that this interface design will provide significant benefits for users in searching for and accessing information.

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