Design Thinking Implementation for User Experience Improvement of UNS Graduation Website: A Case Study

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ABSTRACT

Design thinking is a human-centered problem-solving methodology focusing on innovative solutions. Design thinking can be used to improve the user experience of a website. Design thinking consists of empathize, define, ideate, prototype, and test phase. Based on preliminary observation, the current UNS Graduation Website demonstrates significant usability issues that interrupt the user experience. The lack of error prevention and informative feedback leads to repeated mistakes and user frustration. Additionally, visual and functional inconsistencies further reduce usability. These issues were confirmed through the System Usability Scale (SUS), which yielded a low score, indicating a difficult and unpleasant user experience. To address these issues, this study applies the design thinking methodology to re-design the UNS Graduation Website with the aim of improving its usability and enhancing user experience. The prototype is tested by 20 users using usability testing tools named Maze and System Usability Scale (SUS). The result based on Maze testing, the prototype got a success rate percentage of 100% and a usability score of 85 for the UNS Graduation Website. The usability score tested by SUS also increased from 43,25 to 82. This affirms the successful outcome of the re-design in improving the user experience and increasing the usability of the UNS Graduation Website.

Keyword: Design Thinking, Usability Testing, Graduation Website

ABSTRAK

Design thinking adalah metode pemecahan masalah yang berpusat pada manusia dan berfokus pada solusi inovatif. Design thinking dapat digunakan untuk meningkatkan user experience pada sebuah website. Metode ini terdiri dari lima tahapan, yaitu *empathize*, *define*, *ideate*, *prototype*, dan *test*. Berdasarkan observasi awal, Website Wisuda UNS menunjukkan permasalahan usability yang signifikan dan mengganggu user experience. Kurangnya pencegahan kesalahan dan umpan balik yang informatif menyebabkan kesalahan berulang serta frustrasi bagi pengguna. Selain itu, inkonsistensi visual dan fungsional semakin menurunkan tingkat usability. Permasalahan ini dikonfirmasi melalui pengujian dengan System Usability Scale (SUS), yang menghasilkan skor rendah dan menunjukkan user experience yang sulit dan tidak menyenangkan. Untuk mengatasi permasalahan tersebut, penelitian ini menerapkan metode design thinking untuk merancang ulang Website Wisuda UNS dengan tujuan meningkatkan usability dan memperbaiki user experience. Prototipe diuji oleh 20 pengguna menggunakan alat *usability testing* bernama Maze dan System Usability Scale (SUS). Hasil berdasarkan pengujian Maze, prototipe memperoleh persentase keberhasilan sebesar 100% dan skor usability sebesar 85. Sementara itu, skor usability yang diuji menggunakan SUS meningkat dari 43,25 menjadi 82. Hal ini menegaskan keberhasilan perancangan ulang dalam meningkatkan user experience dan meningkatkan usability Website Wisuda UNS.

Keyword: Design Thinking, Usability Testing, Website Wisuda

1. Introduction

Design thinking (DT) stands out as a unique problem-solving approach prioritizes understanding the needs, behaviors, and desires of the end users [1]. Coined in the 1960s by John Arnold, it emphasizes empathy, collaboration, and iteration to create solutions that are not just effective, but truly resonate with the people who will use them [2]. This approach transcends various disciplines, from product development to social innovation, as it delves deeper into user needs and motivations often missed by traditional methods [3]. One of the most transformative applications of DT lies in website design. Through empathies and observations, DT empowers designers to understand user needs, behaviors, and frustrations [4]. This translates into crafting user interfaces (UI) and user experiences (UX) that are not just visually appealing but also intuitive, engaging, and ultimately successful. Websites designed through DT go beyond aesthetics; they function flawlessly, meeting the target user's needs in a meaningful way, leading to increased engagement and satisfaction [5].

The design thinking model used in this research is based on the Hasso-Plattner Institute Stanford Design Thinking Research Program, where design thinking has 5 phases, namely empathize, define, ideate, prototype, and test [6]. All phases are carried out iteratively so that this method creates a system of checks and balances to ensure the emergence of innovative and appropriate solutions to the social system of the design problem [6]. A similar study using the design thinking approach was conducted in the development of a website-based visitor information system for Gili Tramena. The researchers designed the UI/UX prototype by going through the five stages of design thinking: empathize, define, ideate, prototype, and test. They involved key stakeholders such as government officials, tourism actors, and tourists to ensure the design aligned with user needs. Usability testing was conducted using the System Usability Scale (SUS), resulting in a high score of 86.42, which falls into the "Excellent" category. The results demonstrated that applying the design thinking approach significantly improved the usability and user experience of the system. This success reinforces the relevance and effectiveness of design thinking as a methodology to address real user problems and to deliver human-centered digital solutions [7].

Based on preliminary observation, the current UNS Graduation Website appears to be lacking in terms of error prevention and informative feedback. The absence of error prevention and informative feedback can lead to a frustrating user experience, where users are left unsure about whether they have completed a task correctly or not. This can result in errors such as submitting incomplete information or failing to upload required documents. Without proper feedback, users may not understand what went wrong and how to correct it, which can lead to further frustration and a negative perception of the website. Furthermore, the website has received 43,25 score which is a bad usability score (Grade F) in a test conducted with the System Usability Scale (SUS). The test was carried out on 20 students who were users of the website. Based on the test, most of the users thought there was too much inconsistency in this system, such as inconsistencies in visual aspects (color, typography, etc), contents, and navigation placement. It means, the website still has some weaknesses that need to be fixed to improve the user experience.

The visual aspect of this website still has room for improvement to make it more consistent and attractive for users' attention with certain visual elements. Maintaining consistency in the use of colors, layout, icons, fonts, font sizes, button sizes, and other design elements is crucial for providing users with a clear understanding interface [8]. Also, intuitive icons or symbols usage for certain features or functions are generally useful in helping people recognize some features or functions that users need to access or know about [9]. When the way objects and terminologies are organized and can be explained easily, it becomes simple for users to comprehend and remember. Inconsistency in terminology slow users by 20–25% [8]. Also, users will feel interested or confident in the reliability of a website if it looks consistent and aesthetic by following the latest website design trends. Aesthetic and functional design can increase user satisfaction and influence their perception of the credibility and usefulness of a website [10].

The placement of each navigation on the UNS graduation website can also be improved to make it look more structured. If the navigation layout on the website is not intuitive and not well structured, users will have difficulty navigating the page or finding the information they need. Grouping of similar functions was seen as a substantive factor creating clarity [11]. Inconsistency in the positioning of buttons or colors will slow users down by 5–10% [8]. When users have difficulty finding information, this can cause frustration. Clear navigation and an effective search system are basic principles in good website design [12]. User Experience (UX) includes all individual interactions with a system, which involves thought processes, emotional responses, and perceptions that arise from these interactions [13]. To increase user satisfaction and their

interaction with the system/product, UX is an important element that cannot be ignored in system/product design [14]. Steve Krug in his book entitled "Don't Make Me Think!", explains the importance of simplifying UI design so that users can easily understand and use a product. A design can be said to be "easy to use" if someone can "understand" – what and how to use a design –without having to bother to think [15]. A person will be much more likely to interpret correctly thereby increasing the chances of having a satisfying experience.

UI/UX design principles are a crucial foundation for building a good website. One of the UI/UX design principles, namely "Shneiderman's Eight Golden Rules of Interface Design" can be a reference for producing UI/UX designs that are comprehensive, practical and can make website use easier [8]. Users need to be involved if we want to have designs that are safe, effective, ethical and sustainable. The essence of "Human-centered" is about prioritizing humans above everything else [9]. The concept is designed to meet user needs and desires and to make the user experience enjoyable and easy. A method with a user approach is needed to find user problems. The process of exploring ideas widely and widely needs to be carried out to get real solutions. So, the design thinking method was used to re-design the UNS Graduation Website. Design thinking is a process with creative strategies used by designers to design products/businesses [16]. Design thinking brings designers' principles, approaches, methods, and tools to problem-solving [17].

In order to provide a better user experience and improve usability, it is recommended that the UNS Graduation Website undergo a thorough usability evaluation and re-design. This can include implementing error prevention measures, adding informative feedback, and improving navigation and overall website design. By prioritizing user needs and implementing changes based on user feedback, the website can become a more user-friendly and efficient platform for students to navigate and complete graduation-related tasks. The prototype design that has been created then will be tested using the Maze platform and SUS. Maze is an online analytical prototype testing tool. The maze can help observe and analyze user behavior to identify areas that need improvement. Maze provides click locations, paths, and time spent on each task [18]. Testing in this research was carried out online but was still accompanied by authors using the Zoom application. It is hoped that the proposed graduation website platform can facilitate students' needs in managing graduation.

2. Methods

Before entering the Design Thinking method, preliminary observation is carried out directly on the research object to determine the conditions that occur and define the research structure that is being carried out. Preliminary observation involves field studies and literature reviews to identify and formulate problems. UNS Graduation Website was also tested by System Usability Scale (SUS) to be compared with the new prototype. The research methodology carried out in this research is shown in Figure 1.
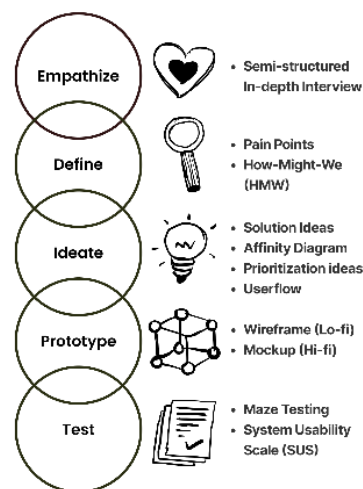

Figure 1. Design Thinking Methodology

2.1. Empathize Phase

Empathy plays a crucial role in the design thinking method, influencing both the emotional and cognitive aspects of the process [19]. In this research, Semi-structured in-depth interviews were conducted with 10 students as the graduation website users [20]. Interviews were also conducted with 1 representative of the UNS graduation website in addition to get another point of view from the website provider. The semi-structured in-

depth interview allows for in-depth exploration of issues from multiple perspectives using open-ended questions even though the list of questions asked is predetermined [21, 22].

2.2. Define Phase

Define phase involves the process of synthesizing information to create meaningful and actionable problem statements or pain points. It's an important step towards understanding complex issues before finding effective solutions. Framing the right problem is the only way to create the right solution [23].

1. Pain Points. Pain points were coded from interview results into specific problems experienced by users in various aspects [24]. Coding is done by grouping words or phrases that represent important and recurring themes in each interview response.

2. How-Might-We (HMW). After that, it continues with determining How-Might-We (HMW) or what is usually described as a process of reframing questions using a "How" approach. HMW turned each pain point into a big question that can trigger ideas for creative solutions while keeping research focused on the problem at hand right to solve [25].

2.3. Ideate Phase

The ideate phase is where we generate many new ideas and perspectives. This stage builds on the HMW that was defined earlier and aims to outline a solution. It is crucial to explore all possible points of view and generate innovative ideas [26]. Ideate phase can be effectively achieved by adhering to UI principles, considering "Shneiderman's Eight Golden Rules," and researching relevant references, while ensuring that the final product is tailored to meet the specific needs of our users.

1. Solution Ideas. To formulate effective solutions, it is important to recognize the pain points and generate HMW triggers. Many creative solution ideas can be created in notes to encourage more innovative ideas to emerge [27].

2. Affinity Diagram. Affinity diagrams are a tool used to gather and organize ideas, opinions, problems, and solutions through brainstorming sessions. The information is then grouped based on their relationships [27].

3. Prioritization ideas. Prioritization ideas involve organizing formulated ideas into four categories: "do it now", "do next", "do last", and "do later" [24]. The prioritization is based on the potential impact of each idea in comparison to the effort required to implement it. Impact is determined by the number of users who experience pain points from interview results. Meanwhile, effort is evaluated through Forum Group Discussions (FGD) with a full-stack web developer and a product manager. By organizing the ideas into these categories, the priority level for each group can be determined, making it easier to identify which solutions should be prioritized for development. This, in turn, helps to ensure that the design plan prioritizes the most essential solution ideas while minimizing the effort required to create a Minimum Viable Product (MVP).

4. User flow. User flow is the steps users take when using a product. [28]. Userflow serves as a valuable reference when designing a product's user experience. By analyzing user problems and habits, ideas are generated to create an optimal user flow. A well-designed user flow leads to a smoother product experience and increases the likelihood of a successful outcome.

2.4. Prototype Phase

During the prototype phase, we will utilize Figma to transform our concepts into a simulated trial run. The prototype model involves using a system prototype to describe the system, providing the user or system owner with an idea of the system development process [29]. The design uses a frame with an aspect ratio of 16:9 that adjusts to fit typical desktop or laptop screens. This is the most common screen size for web design followed by most of the website designers in the world which is around 59.24% [30]. The following steps will be explained below:

1. Wireframe (Low-Fidelity). A wireframe is a sketch of a system that will be built [30]. A wireframe is a framework for arranging an item on a website or application page but without complete details which falls into the low-fidelity design category. Low fidelity is a design whose level of perception is still low and its purpose is only to show the layout.

2. Mockup (High-Fidelity). A mockup is a detailed picture of the final design that includes accurate information of its components [32]. Mockups are included in the high-fidelity design category, meaning they have a high level of precision. High-fidelity design includes detailed information such as color, size, distance, and shape of all design elements.

2.5. Test Phase

In this study, testing phase was conducted using the Maze platform and SUS to measure usability scores effectively and describe interaction behavior towards the platform [33, 34].

1. Maze. Maze is a usability testing tool that has its own set of advantages and disadvantages. One of its main advantages is its affordability and time-saving features. Additionally, test results are automatically analyzed, and it can reach and test with more participants [35]. However, there are also several drawbacks to using Maze as a usability testing tool. For instance, it doesn't allow direct observation of user behavior, making it difficult to understand what users are thinking or feeling. Furthermore, online usability testing tools may not be effective with complex tasks and prototypes, and technical problems during testing cannot be avoided [18]. Therefore, researchers accompany testers via the Zoom application to cover these deficiencies and ensure that the testing process is as accurate and comprehensive as possible. The Maze platform will provide results and reports related to usability testing that has been carried out.

2. System Usability Scale (SUS). SUS is a testing tools that directly involves the end user and can be carried out with a small number of samples [36]. SUS provides a cost-effective and efficient way for practitioners to identify areas for improvement and enhance the overall user experience [33]. SUS assessment results consist of three aspects, namely acceptability, grade scale, and adjective rating (see Figure 2). Meanwhile, the overall level of usefulness is measured using the SUS percentile rank [36]. The SUS percentile rank are showed on Table 1.
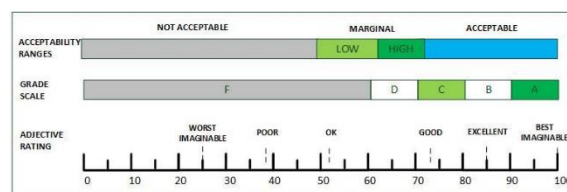

Figure 2. System Usability Scale (SUS) Scoring

Table 1. System Usability Scale (SUS) Percentile Rank

Grade	Column B (t)
A	$n \geq 80,3$
B	$74 \geq n > 80,3$
C	$68 \geq n > 74$
D	$51 \geq n > 68$
E	$n < 51$

3. Results and Discussions

This section contains the results and discussion of the UNS Graduation Website UI/UX re-design process using the Design Thinking method.

3.1. Empathize Phase

The first step in this process was to create an interview framework to be asked of 10 students who were users of the website. Open-ended type of questions were asked to encourage a deep exploration of the subject from various perspectives. Interviews were conducted offline or online using Zoom platform. Each interview lasted approximately 60 minutes.

3.2. Define Phase

    The define phase involves analyzing User Experience (UX) data obtained from semi-structured in-depth interviews with users during the empathize phase.

1. Pain Points. 17 users' pain points are collected by analyzing interview results. This analysis involves grouping words or phrases that represent important and recurring topics in each interview response. 17 pain points were presented in Table 3 below.

Table 2. Pain Points Recap

No	Pain Points	Experiencing Users	Sum
1	The visual elements interface are unattractive	1, 2, 3, 4, 8, 10	6
2	The interface layout is confusing so it is difficult to find the function that want to be used	1, 5, 8, 10	4
3	the website's user flow is not coherent and less intuitive	4, 8, 9, 10	4
4	There are no warnings regarding errors or other occasions occurring on the website	2, 3, 4, 9, 10	5
5	Forms that don't look clickable	2	1
6	Forms that don't auto-save when closed/left for a long time	7	1
7	The data entry form is not editable	1, 2, 7, 8	4
8	The maximum size for uploading photo files is too small	2, 3	2
9	The information obtained is varied and not centralized	2, 3, 4, 5, 6, 10	6
10	There is no timeline explaining the timeline regarding graduation	4, 6, 7, 10	4
11	Feelings of personal data being exposed	5, 6, 8	3
12	Sometimes the website can't accessed	6	1
13	Uncertain file template format	4, 8	2
14	There is no graduation photo gallery	1	1
15	Difficult access for a mobile phone size interface	3, 4	2
16	There is no helpdesk (FAQ, contact, etc)	5, 8, 9, 10	4
17	There is no access to thesis links	8	1

2. How-Might-We (HMW). In this phase, each pain point was transformed into a big question that can trigger ideas for creative solutions while keeping research focused on the problem at hand right to solve. HMW questions are described in Table 3.

Table 3. How-Might-We

No	Pain Points	HMW Questions
1	The visual elements interface are unattractive	How might we increase the attractiveness of the visual elements of the website?
2	The interface layout is confusing so it is difficult to find the function that want to be used	How might we improve website layouts to make them more intuitive and easy to navigate?
3	the website's user flow is not coherent and less intuitive	How might we make website user flow smoother and provide clear instructions to users?
4	There are no warnings regarding errors or other occasions occurring on the website	How might we ensure users understand every occasions of the moment that occurs when using the website?
5	Forms that don't look clickable	How might we keep users aware of what forms need to be filled out?
6	Forms that don't auto-save when closed/left for a long time	How might we ensure that user data is saved even if they leave the form before completing it?
7	The data entry form is not editable	How might we ensure that users are more careful in filling out forms so that the forms are filled in according to instructions?
8	The maximum size for uploading photo files is too small	How might we ensure that photos uploaded by users meet the maximum photo limit?
9	The information obtained is varied and not centralized	How might we ensure graduation registrants get correct and up-to-date information?

No	Pain Points	HMW Questions
10	There is no timeline explaining the timeline regarding graduation	How might we ensure graduation registrants understand the timeline related to graduation?
11	Feelings of personal data being exposed	How might we make users feel at ease regarding their private data on the website?
12	Sometimes the website can't accessed	How might we ensure that the website is always accessible to users?
13	Uncertain file template format	How might we ensure that the file template format used by graduation registrants is always consistent?
14	There is no graduation photo gallery	How might we add to the impressions and memories of graduates?
15	Difficult access for a mobile phone size interface	How might we improve the website experience to make it easier to use on mobile phones?
16	There is no helpdesk (FAQ, contact, etc)	How might we ensure that the confusion experienced by website users or graduation registrants can be resolved?
17	There is no access to thesis links	How might we provide access to graduate theses so users can learn more about graduating students' work?

3.3. Ideate Phase

The ideate phase is carried out as an ideation process for the problems that want to be solved in the how-might we that have been created in the define phase.

1. Solution Ideas. To encourage creativity, solution ideas are generated and written as many as possible to answer every 17 HMW questions that are generated before. These ideas are then carefully evaluated based on User Interface (UI) principles, specifically, "Shneiderman's Eight Golden Rules of Interface Design", while also taking into consideration similar websites. Then all the solution ideas that have been generated will be re-sorted or combined if there are identical solutions. Table 4 contains the sorted solution ideas along with the answered HMW.

Table 4. Solution Ideas

Solution Code	Solution Ideas	Answered HMW
A	Using the design system from Google's Material Design.	1, 2, 4, 5, 7
B	Adding images and visual elements that are attractive and easy to understand	1, 4
C	Using a logical navigation structure and information hierarchy in the navigation drawer	2, 3
D	Improving the Call-to-Action (CTA) component	2, 3, 5
E	Using copywriting that is as clear as possible	3, 4, 7, 8
F	Adding step-by-step instructions section	3
G	Adding a feedback or warning feature in the form of text or pop-up	3, 4, 5, 6, 7, 8
H	Adding auto-save feature	6
I	Updating information regularly	9
J	Adding information section about graduation	9, 10
K	Creating data access restrictions with SSO email	3, 11
L	Only showing data that is not classified as private data	11
M	Adding notification feature to user email	3, 9, 10
N	Carrying out regular website maintenance and monitoring	12
O	Adding feature file template format download	13
P	Adding a timeline related to graduation event	14
Q	Using responsive design	15
R	Adding a helpdesk feature that contains search keywords, contact links, and FAQs	16
S	Adding a link that leads to the library website	17

2. Affinity Diagram. At this stage, the solution ideas are categorized into five groups based on their visual aspect, privacy and security, completeness of information, ease of use, and functionality. This categorization is determined by analyzing the similarities or relationships between the solutions.

Figure 3. Affinity Diagram

3. Prioritization ideas. The prioritization ideas matrix is divided into four quadrants based on the impact and effort required. The impact is determined by the number of users who experience pain points from the results of interviews, while the effort is determined based on the results of Forum Group Discussion considerations by researchers, in collaboration with one full-stack web developer and one product manager. Brainstorming is carried out to determine the priority location of the ideas that have been created. Solution Ideas in yellow are not included at this stage because these solutions can only be realized by the administration who will run the website. Figure 4 shows prioritization ideas matrix. There is a solution idea code along with the solution, the HMW number code (black) along the users number who experience pain points (red).

Figure 4. Prioritization Ideas Matrix

Based on the prioritization ideas matrix, the UNS graduation website prototype design will only consider solutions from the high-impact low-effort and high-impact high-effort quadrants of the matrix. Prioritized solution ideas are shown in Table 5.

Table 5. Prioritized Solution Ideas

Quadrant	Solution Codes	Solution Ideas
High-impact low-effort	A	Using the design system from Google's Material Design.
	B	Adding images and visual elements that are attractive and easy to understand
	C	Using a logical navigation structure and information hierarchy in the navigation drawer
	D	Improving the Call-to-Action (CTA) component
	E	Using copywriting that is as clear as possible
	F	Adding step-by-step instructions section
	J	Adding information section about graduation
	R	Adding a helpdesk feature that contains search keywords, contact links, and FAQs
High-impact high-effort	G	Adding a feedback or warning feature in the form of text or pop-up
	K	Creating data access restrictions with SSO email
	M	Adding notification feature to user email

4. User flow. User flow creation was carried out as a stage for designing the usage flow and user experience on the UNS graduation website. The user flow for the UNS graduation website is divided into three main tasks, namely website registration, upload photo & biodata, and print document certificate as depicted in Figure 5.
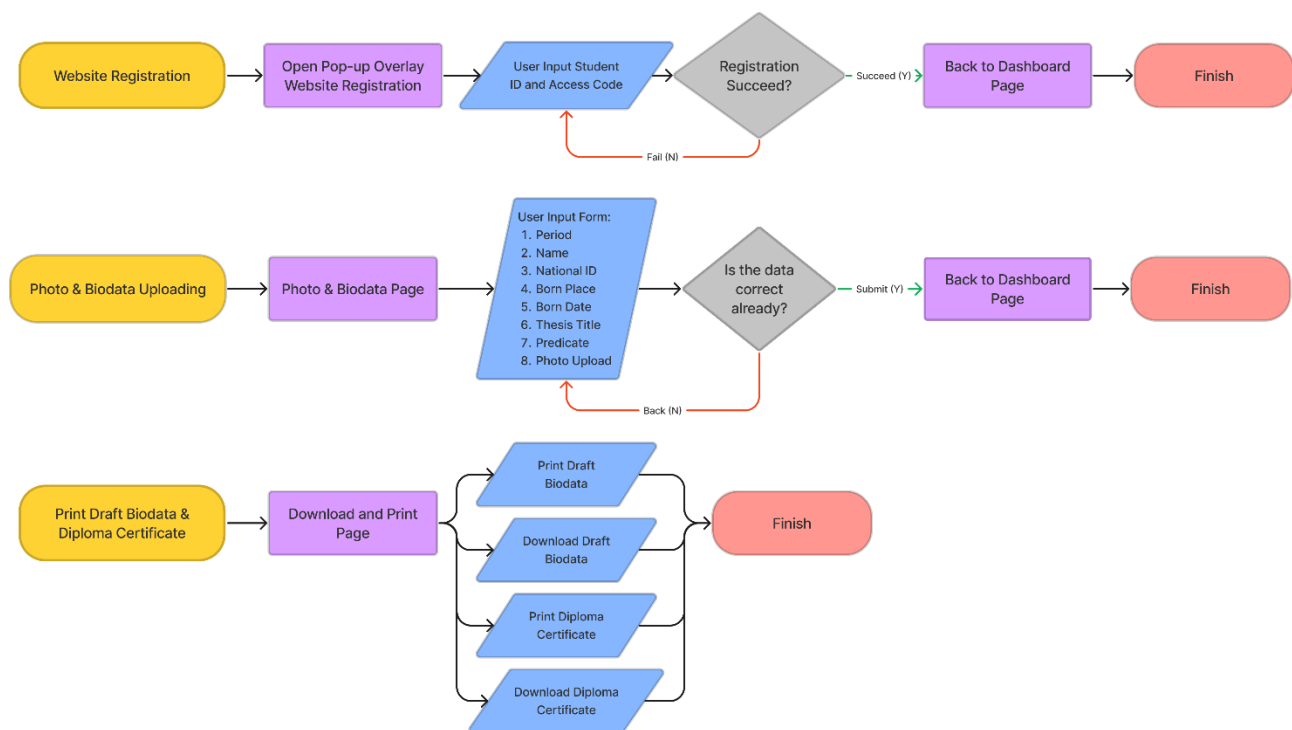

Figure 5. User Flow

3.4. Prototype Phase

The prototype phase begins with making a wireframe (low-fidelity design) and then making a mockup (high-fidelity design). The prototyping process was carried out in the Figma application.

1. Wireframe (Low-Fidelity). The wireframe design is created according to the prioritized solution ideas. This wireframe design only shows the appearance of the main pages of the website. Wireframe preview is shown in Figure 6.
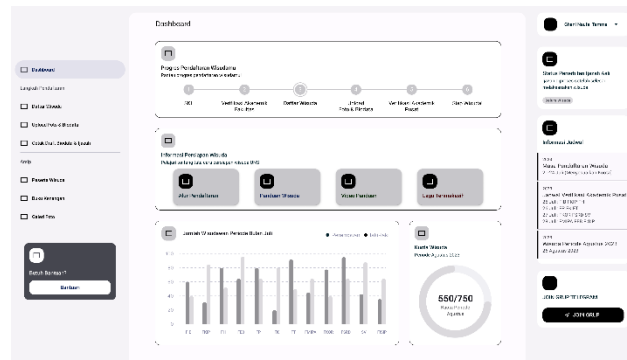
Figure 6. Wireframe Preview

2. Mockup (High-Fidelity). After the wireframe is created, proceed with designing the UI Mockup design. The UI Mockup design is made according to the wireframe that has been created previously. In the UI Mockup, we started using design guideline/design system from Google's Material Design. Google's Material Design contains style rules (color, typography, grid, icon, button component, etc.). The example of design system is shown in Figure 7. This is an embodiment of solution code A and D.
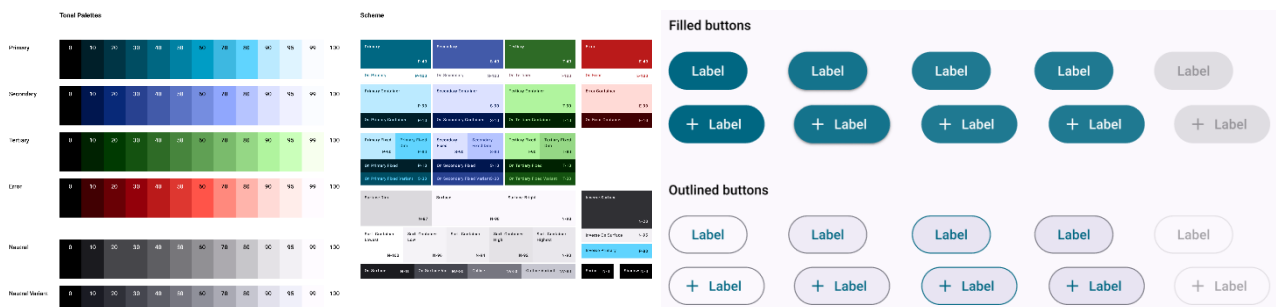

Figure 7. Color Style Design System

Several UI designs were created apart from the main page as a result of selected solution ideas along with other complementary designs to support the prototype. Solution code G which adding a feedback or warning feature in the form of text or pop-up are implemented to prevent error which was as shown in Figure 8. Attractive and easy to understand illustration elements are also added in each pop-up which is as an embodiment of solution code B.

Figure 8. Feedback and Warning Pop-up

Website dashboard is made with 3 parts, which is navigation drawer, content, and right panel. Solution code C which using a logical navigation structure and information hierarchy in the navigation drawer are done by regrouping, reducing, moving or combining menus that have similar functions. Before the improvement, users felt confused in understanding each menu provided. In the re-design, the information hierarchy is improved as shown in Figure 9.
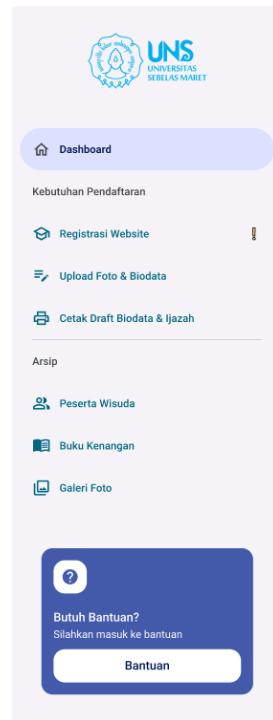

Figure 9. Navigation Drawer Re-design

Dashboard content and Right Panel part contains main information, such as step-by-step information. users will know what they have or have not done when operating the website. This information will be automatically updated according to the condition of how far the user has progressed. This is an embodiment of solution code F. Other Information such graduation preparation information, number of graduates by period, and graduation quota is also added as an embodiment of the solution code J. Dashboard content is shown in Figure 10.

Figure 10. Dashboard Content Re-design

The results of the UI Mockup then be simulated by connecting using the prototype feature in the Figma application. Mockup preview is shown in Figure 11.
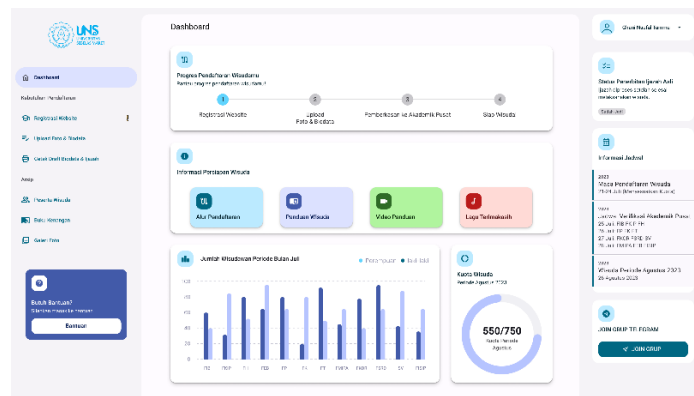

Figure 11. Mockup Preview

3.5. Test Phase

The final phase of the design thinking method, namely usability testing, is carried out by testing the prototype design of the UNS graduation website that has been created. Usability testing is carried out using Maze and SUS. The test was conducted on 20 students who were users of the UNS Graduation Website.

1. Maze. Maze testing was carried out using the Zoom application to minimize misunderstanding. Users were asked to do some tasks for the graduation website based on the user flow that had been created previously, then asked testers to give feedback by carrying out testing using the Maze application. The instructions are described in Table 6. Based on the usability testing report obtained from Maze, the prototype tested received a MAUS (Maze Usability Score) of 85 from a total of 4 tasks tested on 20 testers. The report of Maze testing is described in Table 7 below.

Table 6. Maze Instruction

No	Instructions
1	You are a registering student. Try to go to the graduation admission page and register on the web!
2	After registering on the web, the next step is to upload your profile photo and self-biodata!
3	After filling biodata and uploading the photo, you can download your biodata and graduation certificate. now, try it!
4	Now, you can try to log out from the website.

Table 7. Maze Recap

No	Success Rate	Give-up Rate	Misclick Rate	Average Duration (Second)	Mission Usability Score
1	100%	0%	27,4%	57,4	80
2	100%	0%	28,7%	29,3	84
3	100%	0%	14,3%	11,9	93
4	95%	5%	20%	10,4	83
Maze Usability Score					85

2. System Usability Scale (SUS). After doing Maze testing, tester tested by by filling out the SUS questionnaire which consists of 10 statements with a Likert scale between 1 and 5. SUS testing is carried out to compare the values between the old interface and the re-designed interface. Based on the SUS usability testing obtained, the prototype tested received an average score of 82 from 10 SUS questions tested on 20 testers. This score is included in Grade A in the percentile rank.

Table 8. SUS Report

Questions	Score Average
Q1	1,88
Q2	9,13
Q3	8,88
Q4	8,88
Q5	9,75
Q6	8,50
Q7	8,50
Q8	9,00
Q9	9,13
Q10	8,38
Overall Score Sum	**82**

4. Conclusion and Recommendation

This research identified several obstacles in the form of pain points experienced by users of the UNS graduation website. Three pain points were experienced by the majority of respondents, namely: The visual elements interface are unattractive, there are no warnings regarding errors or other occasions occurring on the website, and the information obtained is varied and not centralized. 11 solution ideas are also generated to overcome those major pain points. Based on the results of usability testing for the UNS graduation website prototype with Maze and SUS, it can be concluded that the UI/UX prototype design using design thinking methodology can provide a better user experience and improve usability. Therefore, it make easier for users to complete their needs on the UNS graduation website. This is shown through the analysis results of the MAUS (Maze Usability Score) value which is included in the high category, namely 85. The proposed prototype design also received a higher SUS value, from 43.25 (Grade F) to 82 (Grade A).

The prototype results from this study can be used as a reference for the next stage of website development, namely the programming phase, by developing the application through front-end and back-end developers into a minimum viable product (MVP). Future research can evaluate the usability of the developed features using more varied metrics. This evaluation can serve as a basis for determining whether feature improvements are necessary to enhance user experience or support future scalability. In addition, it may explore AI-driven UX improvements for future research.

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