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# REDESIGN UI/UX WEBSITE OF PROFESSIONAL CERTIFICATION INSTITUTE USING DESIGN THINKING METHOD AND AGILE FRAMEWORK

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**ABSTRACT**

*Professional Certification Institute (Lembaga Sertifikasi Profesi, LSP) is important in improving the quality of human resources in Indonesia through the provision of training and competency tests in accordance with their fields. For this reason, a medium is needed to promote the services of the Professional Certification Institute in order to reach the Indonesian people widely and online. One of the efforts to improve the promotion of the LSP Ditekindo is to improve the quality of the LSP Ditekindo website. The purpose of this research is to provide recommendations for redesigning and improving the quality of UI/UX, as well as completing information that should be on the LSP Ditekindo website. Researchers applied the Design Thinking method and Agile Framework, and collected data through questionnaires to find out user opinions about the website. The results showed that the Design Thinking method proved to be able to produce a better website redesign in terms of user experience. The Agile Framework method also helps produce a website redesign that is iterative, collaborative, and responsive to user needs. This is evidenced by the results of A/B Testing that has been carried out, where overall Design B or the results of the LSP Ditekindo website redesign were selected and favored by the accession.*

**KEYWORDS** *design thinking; agile framework; LSP; UI/UX*



## INTRODUCTION

Directing the abilities of young people, both hard skills and soft skills, is important to build a generation of intelligence and integrity. Institutions such as the Ditekindo Professional Certification Institute (LSP) are needed to handle this. LSP provides official competency certification with a license from the National Professional Certification Agency (BNSP). LSP plays an important role in improving the quality of human resources in Indonesia through training and competency tests. To promote LSP services widely and online, it is necessary to improve the quality of LSP's website (Mistriani et al., 1970; Rohani, 2022).

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The website is the main online media seen by prospective accessors (certification participants). A good website can provide information to prospective certification participants, related to training schemes and competency tests so as to increase the interest of prospective participants to take part in certification. For this reason, the website should be made as informative and attractive as possible so that prospective accessions get as much relevant and needed information as possible. One of the factors that can make this happen is the implementation of good UI (User Interface) and UX (User Experience) (Surachman et al., 2022). However, from the primary data in the form of the results of 5 accession respondents, the website of the Ditekindo Professional Certification Institute has a UI and UX that is quite attractive and professional, but there is still incomplete information displayed for prospective accessions. Thus, prospective assessors do not understand the contents and supporting information of the LSP Ditekindo website. As well as the lack of appropriate design elements, structure, certification schedule information, after sales in the form of certificate results, testimonials, and even legality from LSP Ditekindo.

Therefore, UI / UX is an important aspect that needs to be considered in making LSP websites (Grande et al., 2021; Muhyidin et al., 2020; Wiwesa, 2021). UI is an aspect related to the visual appearance of the website, while UX is an aspect related to user experience and satisfaction when using the website (Intanny et al., 2018; Priyanto, 2022; Siregar et al., 2019).

The application of design thinking and agile methods can help in designing UI and UX that suits user needs (Fahrudin & Ilyasa, 2021; Lelitasari et al., 2023). The design thinking method consists of five stages, namely empathize, define, ideate, prototype, and test (Hasani et al., 2022; Surachman et al., 2022). The application of agile methods can help in minimizing risks and increasing efficiency in website creation (Candra et al., 2023). The Agile Framework method consists of five stages, namely Product Backlog, Sprint Backlog, Daily Scrum, Sprint Review, and Sprint Restrospective (Amarta & Anugrah, 2021; Hadji et al., 2019).

From the description of the problem above, the purpose of this study is to provide recommendations for redesigning the user interface and user experience of the LSP Ditekindo website, helping LSP Ditekindo in completing and improving the quality of the website in terms of user interface and user experience to attract accession candidates, make it easier for accession candidates to understand complete information related to the certification program at LSP Ditekindo, and make it easier for admins to find out the points of improvement on the LSP Ditekindo website. The novelty of this study is that there is no other research that analyzes the websites of professional certification institutions using design thinking methods and agile frameworks, especially in Cirebon.

## RESEARCH METHOD

This study uses primary and secondary data from surveys conducted at PT. Digital Technology Indonesia and reference literature on Design Thinking and Agile Framework methods. Primary data was obtained from questionnaires distributed to 5 certificate holders at LSP Ditekindo, while secondary data was gathered from books, journals, and academic articles. Design Thinking is used for creating user

interfaces and website user experience through stages like Emphatize, Define, Ideate, Prototype, and Test. Emphatize involves understanding users through observation and interviews, while Define defines the problem statement, Ideate generates ideas, Prototype designs the initial product, and Test collects user feedback. Agile Framework is used for managing projects iteratively and collaboratively through stages like Product Backlog, Sprint Backlog, Daily Scrum, Sprint Review, and Sprint Retrospective. The combination of these two approaches provides a robust framework for project development and management.

## RESULT AND DISCUSSION

The stages of research for redesigning the user interface and user experience of the LSP Ditekindo website using the Design Thinking and Agile Framework methods can be seen in the following picture:

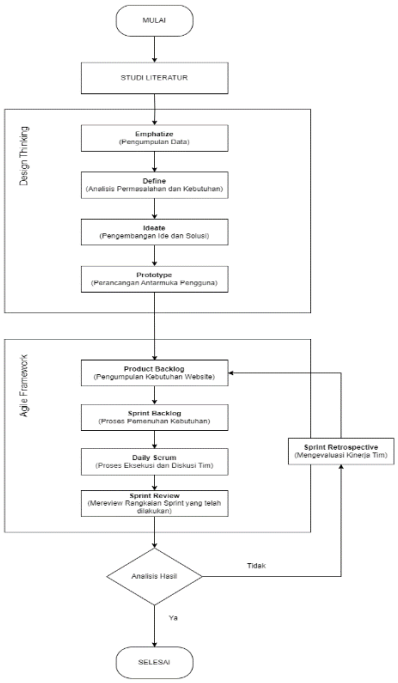


**Figure 1.** Research Flow

### 1. Design Thinking


**Figure 2.** Design Thinking Process

At this stage, discussing the analysis and design of solutions made based on the design thinking approach starts from emphatizing users, continued by understanding the goals and needs of users (define), then continued with the stage of looking for ideas and solutions to the problems obtained (ideate).

a. Emphatize

The first stage in design thinking is empathy. At this stage, the team seeks to understand the problems faced by users in depth. The purpose of this stage is to gain a comprehensive understanding of the user's needs and wants.

b. Define

The second stage is define. At this stage, the team uses the data obtained at the empathy stage to define the problem more specifically. This is done by identifying the root cause of the problem, as well as formulating the problem in a solvable form.

c. Designed

The third stage is ideate. At this stage, the team begins to generate ideas for solutions to defined problems. These ideas can be acquired through brainstorming, mind mapping, or other creative techniques. The goal of this stage is to generate as many ideas as possible.

d. Prototype

The fourth stage is the prototype. At this stage, the team creates a physical or visual model of the ideas that have been generated. This prototype does not need to be perfect, but it is enough to be testable by the user. The purpose of this stage is to get feedback from users about the ideas that have been generated.

e. Test

The fifth stage is the test. At this stage, the team tested the prototype with users to get feedback. This feedback is then used to refine ideas and prototypes. The purpose of this stage is to ensure that the resulting solution can meet the needs and desires of the user.

## 2. Agile Framework

*Source:* wrike.com

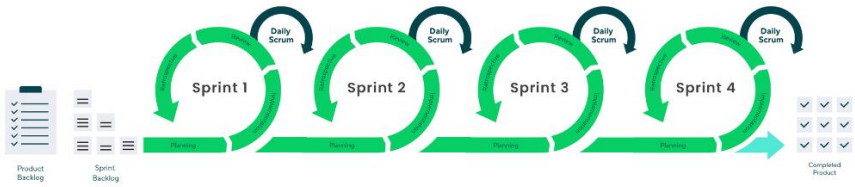


**Figure 3.** Agile Framework Process

Agile is an approach to developing software that emphasizes team collaboration, flexibility, and adaptability to change. The agile approach allows for faster software development and is responsive to changing user needs.

a. Product Backlog

The Product Backlog is a list of job priorities for a development team. The Product Backlog includes the work required to achieve product targets, including features, bugs, and optimizations.

b. Sprint Backlog

The Sprint Backlog is generated from the Product Backlog and includes the work identified to be explored in that Sprint.

c. Daily Scrum

Daily Scrum is a meeting held daily during a Sprint to check progress in achieving the Sprint goals and justify progress.

d. Sprint Review

A Sprint Review is a meeting conducted at the end of a Sprint to display the results of development to stakeholders (customers, management, and other relevant parties).

e. Sprint Retrospective

A Sprint Retrospective is a meeting held after a Sprint Review to evaluate the team's performance and how they can improve the efficiency and effectiveness of the entire Sprint.

**3. Emphatize Levels**

At the emphatize stage, this is a process of empathic understanding of the problem to be solved, by means of observation or interviews and questionnaires through user assessments of the UI and UX of the website. The interview was conducted online (questionnaire) which was distributed to 5 sessions of certificate holders from LSP Ditekindo. Thus, the author gets the results of the questionnaire that has been filled out by the user as follows.

Table 1. Questionnaire Questions

| NO. | Questionnaire Questions |
|---|---|
| 1. | The visual design of the website of the DITEKINDO Professional Certification Institute is attractive and professional |
| 2. | The colors and fonts used on the website of the DITEKINDO Professional Certification Institute are easy to read and comfortable to look at |
| 3. | The images and graphics used on the website of the DITEKINDO Professional Certification Institute are informative, relevant, and support the message to be conveyed |
| 4. | The website layout of the DITEKINDO Professional Certification Institute is well structured and easy to understand |
| 5. | The menus on the DITEKINDO Professional Certification Institute website are easy to understand and help me find the information I need |
| 6. | The responsiveness of the DITEKINDO Professional Certification Institute website is good and can be accessed well on various devices and screen sizes |
| 7. | I easily find information on the Legality of LSP Ditekindo on the website of the DITEKINDO Professional Certification Institute |
| 8. | I easily find information about certification programs on the website of the DITEKINDO Professional Certification Institute |

| | |
|---|---|
| 9. | I easily find information about certification fees on the website of the DITEKINDO Professional Certification Institute |
| 10. | I easily find information about the certification implementation schedule on the website of the DITEKINDO Professional Certification Institute |
| 11. | I easily find information about the results of the certification exam and information about certificates received after passing certification on the website of the DITEKINDO Professional Certification Institute |
| 12. | I easily find information about testimonials and benefits of having certification on the website of the DITEKINDO Professional Certification Institute |
| 13. | I easily find information about the contact and social media of the Professional Certification Institute on the website of the DITEKINDO Professional Certificate Institute |
| 14. | The features available on the website of the DITEKINDO Professional Certification Institute helped me in finding the information I needed |
| 15. | The icons and illustrations used on the website of the DITEKINDO Professional Certification Institute helped me understand the information better |
| 16. | The links on the menu and contents of the DITEKINDO Professional Certification Institute website are complete and help me find the information I need |
| 17. | The contents of the DITEKINDO Professional Certification Institute website are complete and provide the information I need to decide whether I want to register for certification or not |

Table 2. Results of Respondents' Answers

| Respond | K1 | K2 | K3 | K4 | K5 | K6 | K7 | K8 | K9 | K10 | K11 | K12 | K13 | K14 | K15 | K16 | K17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R1 | SS | S | S | SS | SS | SS | SS | SS | TS | TS | SS | SS | SS | S | S | S | S |
| R2 | TS | S | S | TS | CS | TS | CS | CS | TS | TS | TS | CS | S | CS | CS | CS | TS |
| R3 | S | S | S | CS | CS | CS | TS | CS | TS | TS | TS | CS | CS | S | CS | CS | CS |
| R4 | S | S | CS | SS | S | SS | SS | SS | CS | S | SS | SS | SS | S | S | CS | S |
| R5 | S | S | TS | CS | S | TS | TS | CS | TS | TS | CS | TS | S | CS | TS | CS | CS |

With the caption SS means strongly agree, S means agree, CS means quite agree, TS means disagree, and STS means strongly disagree.

Based on the results of the questionnaire, respondents experienced several obstacles, including unresponsive websites on smartphone devices, inappropriate icons and illustrations, lack of information related to certification programs, especially certification schedules, no certification fees displayed, poor website layout, broken links on the certification menu, company legality not displayed clearly, typography information displayed poorly, and no testimonials and proof of certificates.

## 4. Define

The define process is the process of getting user views and understanding user needs, then 2 (two) stages are made, namely Pain Point and How Might We.

1. Pain Point

The define process is the process of getting user views and understanding user needs, then 2 (two) stages are made, namely Pain Point and How Might We.

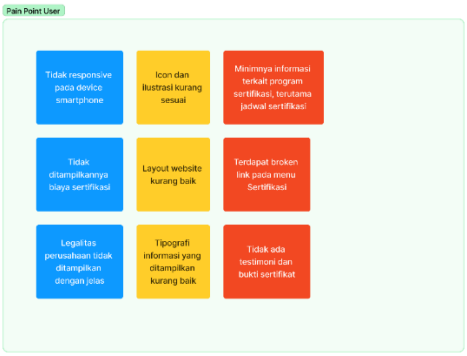


**Figure 4.** Pain Point User

2. How Might We

How Might We is a short statement to come up with ideas from problem statements that are already contained in pain points. This idea will be the main thing of the website design that will be made.


**Figure 5.** How Might We

**5. Ideate Level**

This stage contains ideas for solving problems that contain solutions to problems that have been obtained from the previous stage. This stage has 4 (four) processes that must be done, namely: solution idea, affinity diagram, prioritization idea and crazy 8's.

1. Solution Idea

At this stage, the determination of ideas that must be poured is carried out. The author has done the how might we stage, then this stage is the determination of the idea of the existing problem as the right main solution to meet user needs, the author has determined several solutions to the problem.


**Figure 6.** Solution Idea

2. Affinity Diagram

At this stage, the determination of ideas that must be poured is carried out. The author has done the how might we stage, then this stage is the determination of the idea of the existing problem as the right main solution to meet user needs, the author has determined several solutions to the problem.

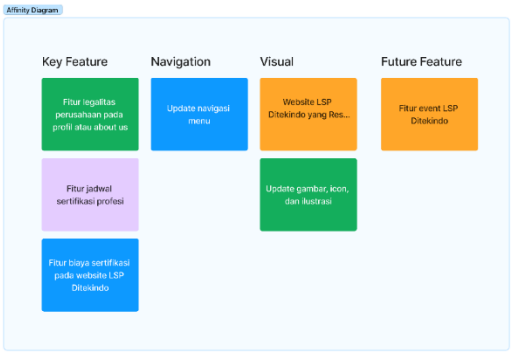


**Figure 7.** Affinity Diagram

3. Prioritization Idea

Prioritizing ideas that have been grouped, this process is carried out based on greater user value compared to the effort to be expended.

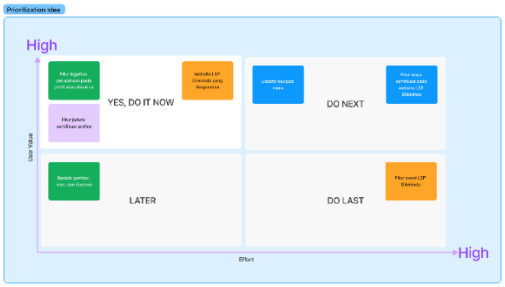


**Figure 8.** Prioritization Idea

4. Crazy 8’s

Crazy 8's is a quick sketch to generate 8 (eight) different ideas in 8 (eight) minutes. The goal is to encourage describing ideas that already exist, and are ideas that produce a wide variety of solutions.

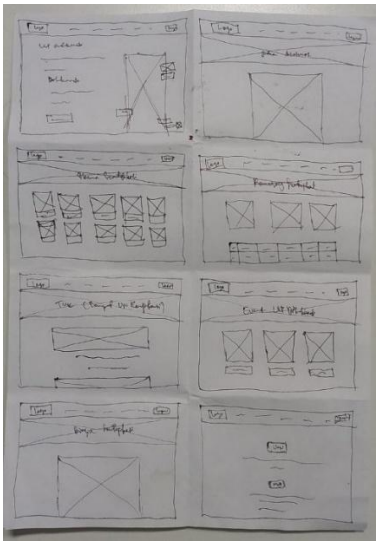

**Figure 8.** Crazy 8’s

## 6. User Flow

User Flow is useful for describing the steps performed by the user. The following is the user flow that can be done by the accession as a user of the LSP Ditekindo website.

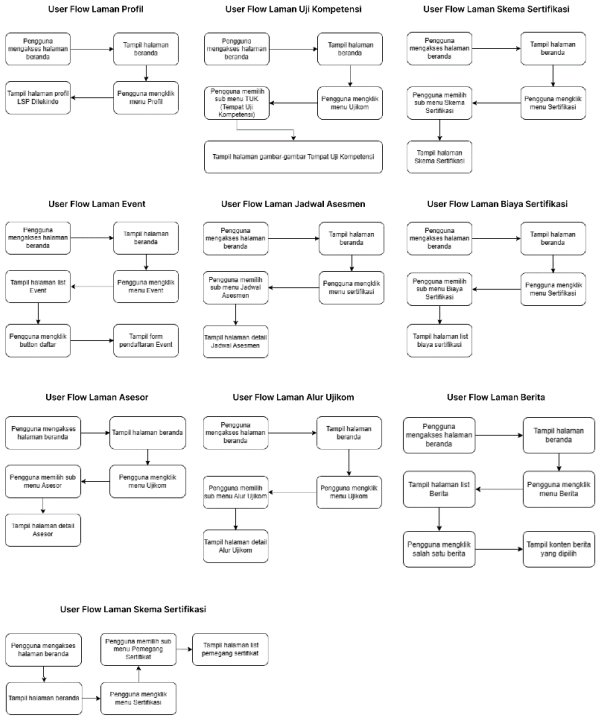


**Figure 9.** User Flow

## 7. Information Architecture

Information Architecture (IA) is a description of the features that exist in the UI and UX redesign design of the website that we will create, with the aim of making the website understandable to users. Information Architecture is a chart that is interpreted as a collection of features on the website. The following is the information architecture made by the author.

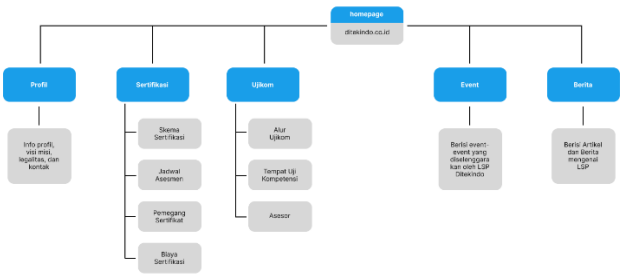


**Figure 10.** Information Architecture

## 8. Wireframe

Wireframes are made based on the results of the emphaty process up to the ideat of the results of the analysis of user needs and the goals of the user. From the results of the research conducted, users have an age range of 20 - 24 years with the profession of graphic designer and web developer. Therefore, UI and UX redesign

design must be made better, easier and understandable by users, so that users are comfortable using websites that are made according to the flow in carrying out activities based on existing user flow. This wireframe is the basis for making prototypes or prototypes of websites with more real interaction improvements.

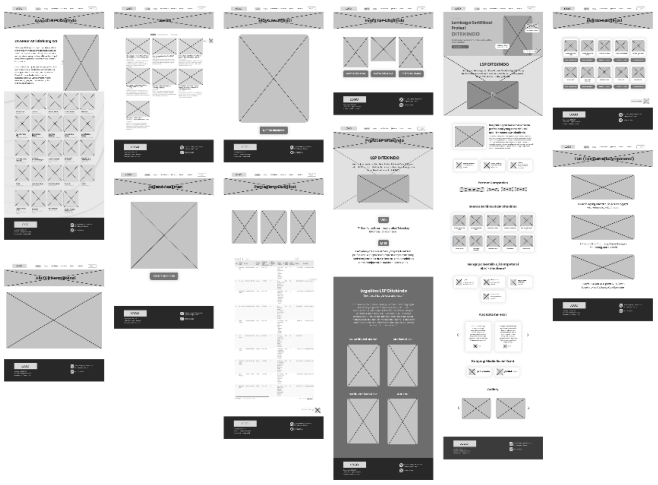

**Figure 11.** Wireframe

## 9. Prototype

Prototype is an interface scheme that has been developed from a wireframe that forms an application picture of features that suit user needs. Here is the prototype that the author has made.

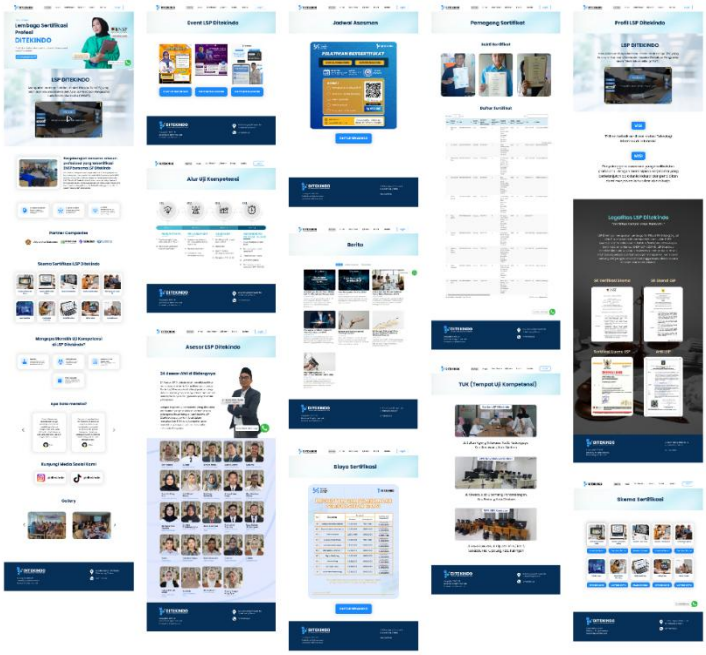

**Figure 12.** Prototype

## 10. Testing Prototype Results

At this stage, testing was carried out by making a questionnaire using the A/B Testing testing method involving 5 respondents. This test uses a questionnaire made based on a comparison of 2 designs before and after redesign. There are 7 statements where each item has answer options A or B. Questions asked based on prototype redesign, excluding new pages.

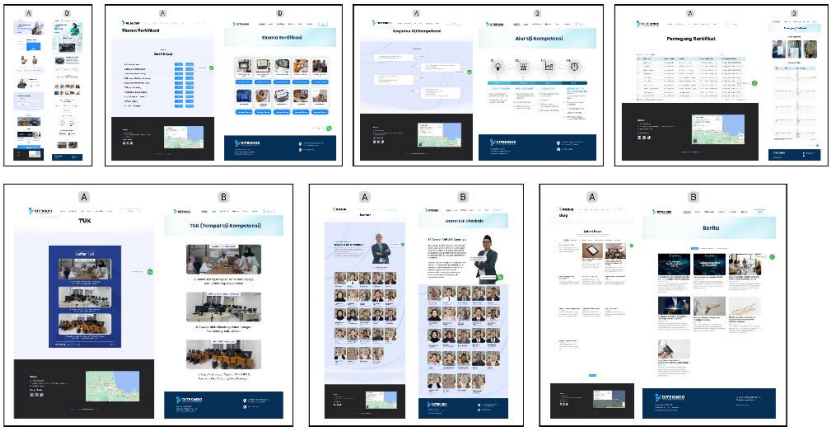

**Figure 13.** Prototype

## 11. Respondents' Answers

At this testing stage, the author made a comparison question of design A and B of the LSP Ditekindo website along with the results of respondents' answers. Here are respondents' questions and answers in percentage form.

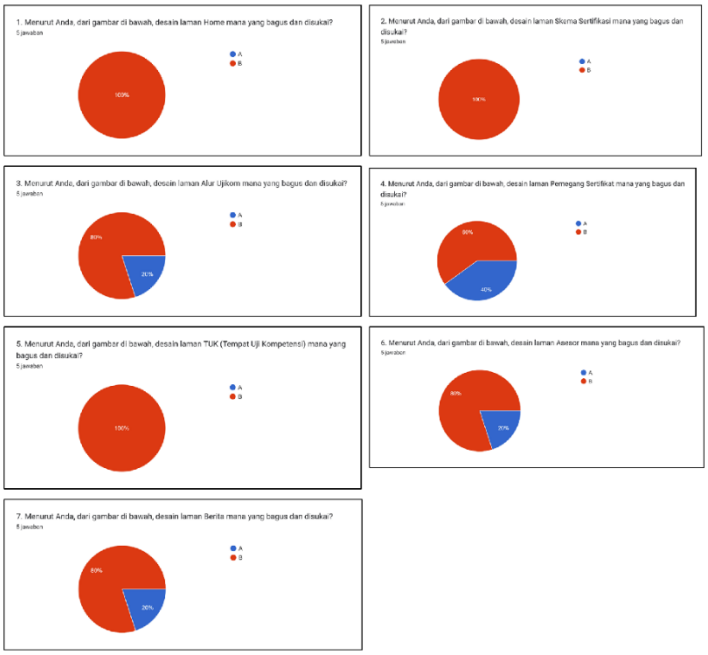

**Figure 14. A**/B Testing Results of Respondents' Answers

## 12. Data Processing of A/B Testing Respondents

After distributing the questionnaire questions, the A/B test measurement results are summarized in the table below.

**Table 3.** A/B Testing Resuls

| Page views | Design A | Design B | Winner |
|---|---|---|---|
| Home | 0% | 100% | B |
| Certification Scheme | 0% | 100% | B |
| Alur Ujikom | 20% | 80% | B |
| Certificate Holder | 40% | 60% | B |
| TUK | 0% | 100% | B |
| Adviser | 20% | 80% | B |
| News | 20% | 80% | B |

On the Home page, design B was selected with a percentage of 100%, on the Certification Scheme page, design B was selected with a percentage of 100%, the Ujikom Flow page was selected design B with a percentage of 80%, the Certificate Holder page was selected design B with a percentage of 60%, the TUK page was selected design B with a percentage of 100%, the Assessor page was selected design B with a percentage of 80%, and on the News page, design B was selected with a percentage of 80%. Overall Design B was selected and favored by the accession.

## 13. Agile Framework

For the implementation of the Agile Framework, the author acts as Scrum Master, LSP Team as Product Owner, and Website Admin as Development Team. To develop a framework, a product backlog is needed. Product backlog is a list of feature development activities needed based on needs analysis, here is a list of product backlog UI/UX design LSP Ditekindo Website outlined by Product Owner.

**Table 4.** Product Backlog Result

| No. | Description of Product Backlog |
|---|---|
| 1. | I want the LSP Ditekindo website to present complete information and according to the needs of the accession |
| 2. | I want the LSP Ditekindo website to have a complete menu, appropriate, and without broken links |
| 3. | I want LSP Ditekindo's website to look professional and credible |
| 4. | I want the LSP Ditekindo website to make it easier for candidates to take part in certification at LSP Ditekindo |
| 5. | I want LSP Ditekindo's website to have a better and cleaner UI. |
| 6. | I want the Professional Certification Body website to be responsive on various devices |

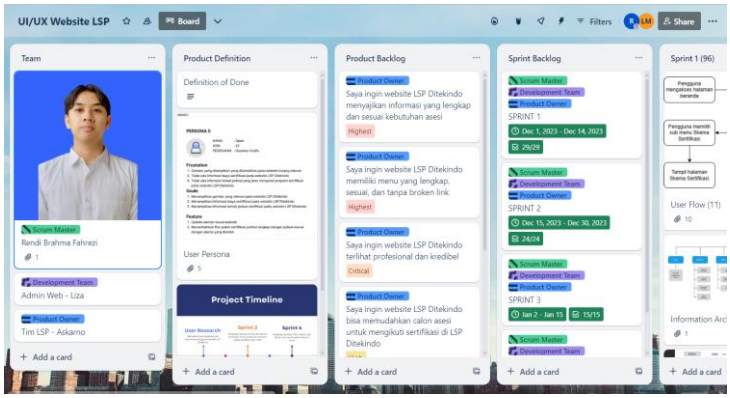


**Figure 15.** Product Backlog Using Trelo

## CONCLUSION

The study demonstrates the effectiveness of the Design Thinking method in redesigning the Ditekindo Professional Certification Institute's website. The stages of empathize, define, and ideate were used to understand the problems and needs of potential users, resulting in a more precise and efficient redesign process. The addition of features, design improvements, and information based on user needs improved the user experience. A/B testing revealed that Design B, or the overall redesign, was preferred by the audience, with a voter percentage of 14.39% for Design Option A and 85.71% for Design Option B. The Agile Framework method was also effective in the redesign process, allowing gradual refinement of the website through a collaborative approach. The Agile Framework method produced suitable implementations within 2 months, consisting of 4 sprints. The addition of features, supporting information, and visual elements made the LSP Ditekindo website more credible, attractive, easy to understand, and user-friendly.

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