Designing A Better User Experience: User Centered Design Methods for Digital Art Collection Portals

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Abstract— The use of digital art collection portals and platforms has been growing rapidly in the digital era. However, many users face access and navigation challenges due to the complicated interface and inefficient search system. Therefore, this research aims to optimize the user experience on digital art collection portals by applying the user-centered design (UCD) method which focuses on web-based user interfaces (UI/UX). Calculations of the System Usability Scale (SUS) are used to quantify a system usability. This study focuses specifically on the millennial generation, the primary users of digital art, and identifies the unique challenges they face. By presenting a user-centered design (UCD) based solution, this research makes an important contribution to the understanding of user-centered design (UCD) optimization in the context of digital arts and culture. UI/UX testing shows that the system's usability and user experience have improved significantly. By integrating these insights, digital art collection portals can better meet users' needs and expectations, improve accessibility, and increase appreciation of digital art.

Keywords— Collection Portal, Digital Art, SUS, UCD, UI/UX.

I. INTRODUCTION

In the current digital era, access to digital art collection portals and platforms is increasing, but the user experience in exploring these art collections is not always optimal. Many digital art portals still face complicated user interfaces, inefficient searches, and limited accessibility. The success of the interaction of art and technology in overcoming the mental wellbeing problems of the millennial generation, as found in research by Stefanie Evelyn and Sutrisnowati Machdijar, shows the importance of providing an interactive and creative platform through digital art [1]. The publication by Noor Hasyim and Abi Senoprabowo also shows efforts to enhance the interactivity of museum exhibits by utilizing virtual reality exhibits [2].

This research proposes a user experience on a digital art collection portal by involving users in design and development. In dealing with interface problems, this research will apply the User-Centered Design (UCD) method with UI/UX-based design. As a result, digital arts and culture users should be able to experience an efficient, user-friendly, and satisfying interface.

The research focuses on user experience in the context of digital art collection portals, which differentiates it from previous research. By exploring the application of UCD to digital art, this research makes a special contribution to the understanding of UCD methods in the domain of digital arts and culture.

Based on the problems identified, the main problem formulation is how to design an effective navigation system on the Digital Art Collection Portal to make it easier for users, especially the millennial generation, to find works of art based on preferences, and how to optimize the UI/UX user experience so that it can be accessed well by users from various level. understanding of art, including art beginners and experts, so they can explore and understand digital works of art better. This problem statement will be used as a guide to achieve the goals of designing, developing, and implementing a digital art collection portal that focuses on a better user experience. This system will improve navigation efficiency on digital art collection portals and user experience, improve

accessibility, and contribute to UI/UX research for future developments in both fields.

II. METHOD

This research applies the UserCentered Design (UCD) method with a focus on users in developing digital art systems. Users are actively involved from information gathering to prototype testing to create a user-friendly interface. Using instruments such as the System Usability Scale (SUS), this research questions the usability of digital art portals and collects qualitative data regarding user satisfaction and experience [3]. Research methodology includes planning by distributing questionnaires, literature studies, and observations to understand the problems being studied. The entire process is geared towards involving users in development, ensuring good design standards, and providing a satisfactory user experience on the digital art collection portal.

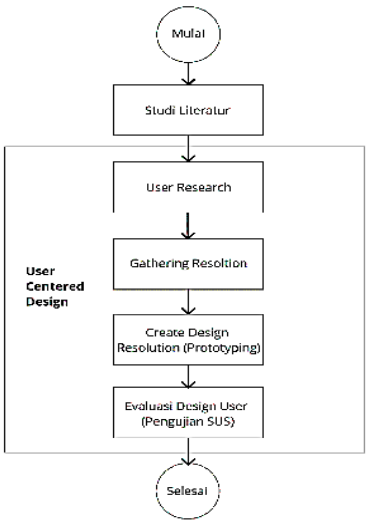

Figure 1. Research Methodology

This research applies a User-Centered Design (UCD) approach, focusing on user needs and preferences in developing digital art systems. The prototype interface will be designed using the Figma platform, with the integration of UI/UX principles for clarity, affordability, and intuitiveness [4]. Prototype testing involves users, and their feedback becomes the basis for improvements and improvements.

Data collection was carried out through System Usability Scale (SUS) testing on the Figma prototype [5]. Respondents were invited via social media to fill out the SUS questionnaire online. The sample size includes 50 respondents from a variety of backgrounds, providing a comprehensive perspective on interface design.

Data from the System Usability Scale (SUS) questionnaire were processed using SPSS to analyze the level of system usability. Qualitative analysis was conducted to identify user feedback and necessary improvements. Figma's interface design is focused on clarity, navigation, and interactivity. Prototype testing involves users with varying understandings of art, providing feedback for improvement. Our goal is to ensure that the design meets user expectations and provides an optimal browsing experience for digital art collections

III. RESULTS AND DISCUSSION

Application of the User-Centered Design (UCD) method in designing the Digital Art Collection Portal, to create a more interesting experience and focus on user needs [6]. This section presents results and discussion related to the design and implementation of interfaces, following the design that has been made.

1. Specify the Context of Use

The user identification stage of the Digital Art Collection Portal involves observation and questionnaires to get an overview of user needs. The portal focuses on providing artwork information, artist biographies, and digital art exploration and appreciation features that will appeal to the millennial generation and digital art fans.

2. Specify User And Organizational

An online survey was used to identify the needs of Digital Art Collection Portal users, involving artwork details, artist biographies, and technical data. The desired information includes artistic aspects, history, search features, a friendly user interface, and online galleries. Data security and performance optimization, as well as responsiveness to

various devices, are non-functional aspects of web development.

3. Product Design Solutions

The user interface design is presented using Figma tools by using the prototype feature.

Figure 2. Figma

a. UI Style Guide

Style Guides are created to simplify user interface design by combining icons and text into components, and producing different variations.

Figure 3. Color Pallet

Typography is the art and technique of arranging, selecting, and arranging letters and text layouts in a design. Meanwhile, design components are the visual elements used in a design work. It is a complex subject that encompasses a multitude of aspects, and good design components can enhance a design's aesthetics and communication effectiveness.

Table 1. Typography

Type	Specification
Title 1	*Font Bebas Neue Bold* with *font size* 64px
Heading 1	*Font Lato Bold* with *font size* 40px
Heading 2	*Font Lato Bold* with *font size* 36px
Heading 3	*Font Bebas Neue Bold* with *font size* 32px
Body copy 1	*Font Lato* Regular with *font size* 30px
Body copy 2	*Font Lato* Regular with *font size* 24px
Body copy 3	*Font Lato* Regular with *font size* 20px

Table 2. Desain Component

Component	Name	Function
Button	**Button**	Buttons are used for various purposes in user interfaces.
ARTFOLIOVAULT	**Logo**	Logo used to represent an identity or symbol.
Name : Sesi4 :	**Text Field**	Text Fields are used for information in an application or website interface.

b. Design Plan

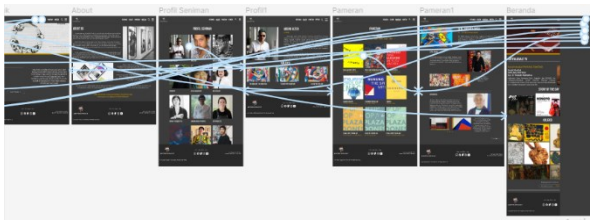

Figure 4. Prototype

A prototype in product development is an initial representation of a planned product design or model, used to test concepts, validate ideas, and visualize planned functionality before creating a final version.

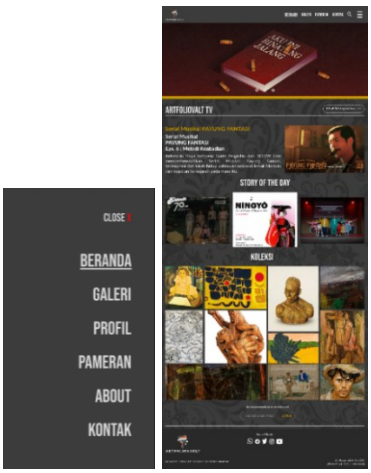

Figure 5. Navigation & Home

In Figure 5, the navigation page and home page are used as a user interface site that allows users to move to different sections and as the main menu.

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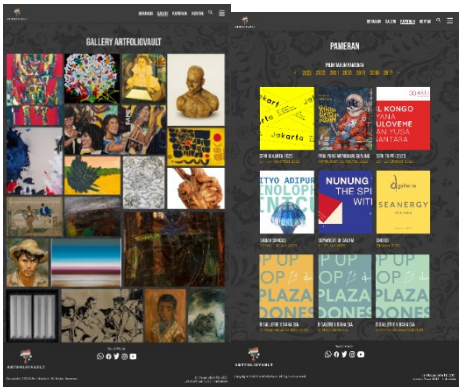

Figure 6. Gallery & Exhibition

In Figure 6, there is a gallery and exhibition that functions as a menu that presents important aspects on a page that introduces the art collection to users.

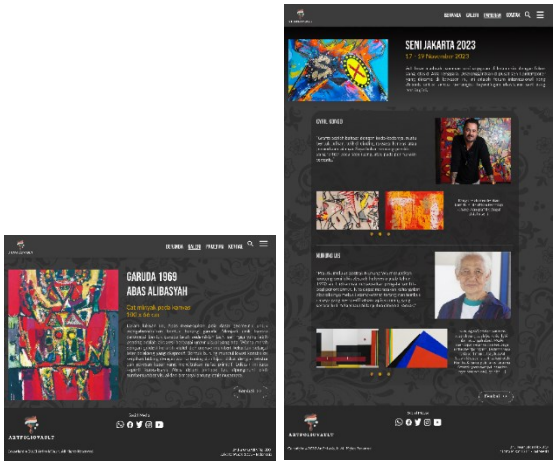

Figure 7. Details of Gallery Art & Exhibition Art

Figure 7 shows details of gallery art and exhibition art which functions to explain the details of each art by providing information about the work of art.

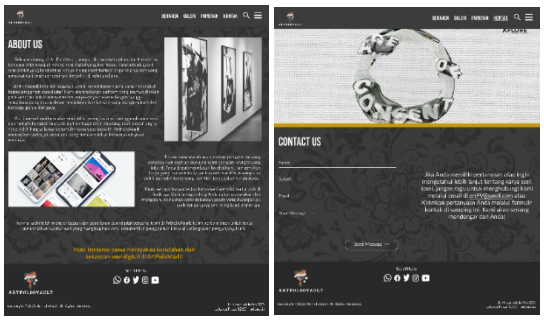

Figure 8. About and Contact

In figure 8, the about display is used to present information and the contact display is used to facilitate communication between users and the parties involved.

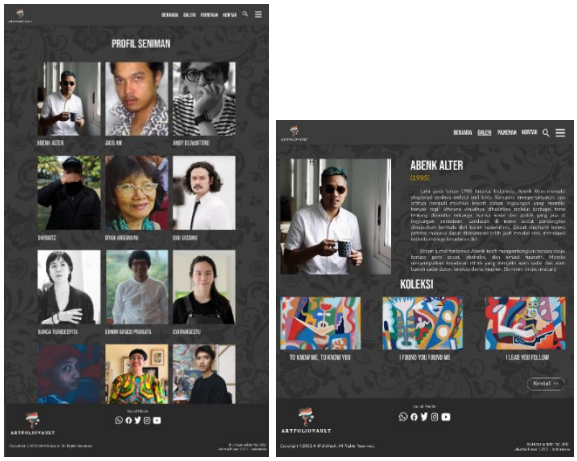

Figure 9. Artist Profile and Artist Details

In figure 9 is the artist profile page which functions to display complete information about the artists and artist details which functions to provide in-depth information about the artist.

4. Evaluate Design Against User Requirement

At this stage, an evaluation of the design that has been created is carried out and adjusted to the user's needs. The evaluation uses the SPSS and System Usability Scale (SUS) methods to measure the extent to which the design meets user expectations and needs [7].

Table 3. System Usability Scale (SUS) Statement

No.	Statement
1.	I feel that using this digital art collection portal website is easy to understand.
2.	I find using this digital art collection portal website difficult to understand and confusing.
3.	I feel that the user interface of this digital art collection portal website is consistent in appearance and functionality
4.	The user interface of this digital art collection portal website feels inconsistent in appearance and functionality
5.	I feel that navigating the user interface of this digital art collection portal website easy to do.
6.	Navigating the user interface of this digital art collection portal website is difficult and time consuming.
7.	I feel that the features available on this digital art collection portal website are useful for my needs.

8.	The features available on this digital art collection portal website are not very useful for my needs.
9.	I feel the visual design of this digital art collection portal website is attractive and aesthetic.
10.	The visual design of this digital art collection portal website is less attractive and does not pay attention to aesthetic aspects.

From the results of 50 respondents, the System Usability Scale (SUS) score was calculated based on the following rules. Each respondent provides a score, and the results are processed to get an idea of the level of user satisfaction. This SUS score data provides evaluative information and potential system improvements.

Table 4. Test results System Usability Scale (SUS)

No	Calculated Score Results										Total	Score (Total x 2.5)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
1	3	4	3	4	3	4	3	4	3	4	35	87.5
2	3	3	3	3	3	4	2	3	3	4	31	77.5
3	2	2	2	2	2	2	2	2	2	2	20	50.0
4	4	4	4	4	4	4	4	4	4	4	40	100.0
5	4	4	4	4	4	4	4	4	4	4	40	100.0
6	3	2	3	2	3	2	4	4	4	4	31	77.5
7	3	3	4	4	3	4	3	4	3	4	35	87.5
8	3	3	3	2	3	3	3	2	4	3	29	72.5
9	3	3	3	2	4	4	4	2	3	4	32	80.0
10	4	3	2	3	3	4	2	3	4	3	31	77.5
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
50	4	3	4	2	3	3	4	4	3	3	33	82.5
Average Score (Final Result)												**79.55**

From the score results, the average System Usability Scale (SUS) reached 79.55, which is in category B according to the SUS scale. This shows positive user evaluations of the system, with the majority expressing satisfaction with usability and user experience. Following are the steps for calculating the System Usability Scale (SUS) score:

$$\bar{x} = \frac{\sum x}{n}$$

= 3977.5/50
= 79,55

Table 5. Interpretation of System Usability Scale Values (SUS)

	Result
***Skor* SUS**	79.55
Grade Letter	B
Adjective Ratings	*Good*

This value shows the high level of user satisfaction and comfort in using the product or system. Being in the "Good" category on the System Usability Scale (SUS) scale confirms a good level of acceptance by users [8]. These results provide a strong basis for concluding that the usability and user satisfaction aspects have been implemented effectively.

IV. CONCLUSION

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The application of the User-Centered Design (UCD) method in developing a digital art collection portal involved 50 respondents in a questionnaire using the System Usability Scale (SUS). The SUS evaluation results show an average score of 79.55 with a Letter B Grade and the Adjective Rating "GOOD", indicating the success of the design in meeting user needs. UCD evaluation makes a significant contribution, resulting in a responsive development process and a positive influence on the quality of the portal. Based on the research findings and UCD's influence, future digital art projects should prioritize user satisfaction.

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