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# EVALUATION OF INTERFACE DESIGN PRINCIPLES ON TERRAS WEBSITE (PUBLIC FACILITY LOAN PLATFORM OF TELKOM UNIVERSITY)

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**Abstract:** The TERRAS website is a platform for students and staff at Telkom University to check room availability. However, users encounter several issues, such as an unintuitive interface, confusing navigation, and inconsistent design. Therefore, this study evaluates the interface design of the TERRAS website based on three key principles: simplicity, consistency, and perceptibility, as developed by Don Norman, Jakob Nielsen, Larry Constantine, and Lucy Lockwood. This research employs a qualitative method, conducting in-depth interviews with students as primary users and logistics staff as website facilitators. Additionally, observations were made on other Telkom University websites to compare their level of consistency. The findings indicate that the TERRAS website lacks consistency compared to other Telkom University websites. While the simplicity aspect is fairly adequate, the website lacks informativeness. Moreover, perceptibility needs improvement to enhance the user experience. Improvements in interface design are necessary to increase usability and website effectiveness. The recommendations from this study are expected to serve as a foundation for developers to optimize the TERRAS website design, making it more user-friendly and aligned with users' needs.
**Keywords:** userinterface evaluation, simplicity, consistency, perceptibility, user experience.

***Abstrak:*** *Website TERRAS merupakan platform bagi mahasiswa dan staf Telkom University untuk mengecek ketersediaan ruangan. Namun, pengguna mengalami kendala seperti tampilan yang kurang intuitif, navigasi membingungkan, dan inkonsistensi desain antarmuka. Oleh karena itu, penelitian ini mengevaluasi desain antarmuka website TERRAS berdasarkan tiga prinsip utama: kesederhanaan, konsistensi, dan persepsibilitas, yang dikembangkan oleh Don Norman, Jakob Nielsen, Larry Constantine, dan Lucy Lockwood. Metode penelitian yang digunakan adalah kualitatif dengan*

*wawancara mendalam kepada mahasiswa sebagai pengguna utama serta staf logistik sebagai fasilitator website. Observasi juga dilakukan terhadap website Telkom University lainnya untuk membandingkan tingkat konsistensi. Hasil penelitian menunjukkan bahwa website TERRAS kurang konsisten dibandingkan website lain di lingkungan Telkom University. Aspek kesederhanaan sudah cukup baik, tetapi kurang informatif, sementara persepsibilitas masih perlu ditingkatkan agar pengalaman pengguna lebih optimal. Diperlukan perbaikan dalam desain antarmuka guna meningkatkan kemudahan penggunaan dan efektivitas website. Rekomendasi dari penelitian ini diharapkan menjadi acuan bagi pengembang untuk mengoptimalkan desain website TERRAS agar lebih user-friendly dan sesuai dengan kebutuhan pengguna.*
***Kata kunci:*** *evaluasi antarmuka, kesederhanaan, konsistensi, persepsibilitas, pengalaman pengguna.*

## INTRODUCTION

The TERRAS website is a platform used by students and staff of Telkom University to check room availability. This website aims to facilitate users in accessing information related to classrooms, laboratories, and other facilities within the campus environment. In the digital era, the effectiveness of a website highly depends on the quality of its User Interface (UI) design and the User Experience (UX) it provides. The three principles were chosen because a good user interface must adhere to the principles of simplicity, consistency, and perceivability to enhance user comfort in accessing information (Baraja Coding, 2023). Simplicity helps users understand and navigate the interface more easily, while consistency ensures that visual and functional elements remain uniform across an application or website, reducing users' cognitive load. Additionally, Okavaplus (2023) states that consistency in design elements creates a cohesive experience, helping users recognise patterns and improving navigation. However, in its implementation, several challenges have been identified in the use of the TERRAS website. Based on internal interviews conducted with 10 Telkom

University students, the findings indicate that the TERRAS website is overly simplistic, lacking essential information such as location details and a contact person, making it appear less informative. Students also expressed that the website feels unfamiliar due to its use of green as the primary color, which deviates from Telkom University's identity, which predominantly features maroon and gray. (Source: Internal Survey, 2024). These issues hinder the efficiency of students and staff in searching for room availability information, ultimately affecting both academic and non-academic productivity as well as campus administration.

In line with recent studies, an interface design that does not consider user perception can lead to confusion and errors in system operation. For instance, research by Goldenberg and Tractinsky (2021) indicates that an interface lacking consistency in handling bidirectional elements can cause user confusion and errors. Additionally, errors in managing interface modes, as discussed in the article *Mode (user interface)* (2023), can result in unintended user actions due to a lack of awareness regarding the system's current status. Additionally, observations of several other websites within Telkom University reveal that the TERRAS website has a lower level of consistency compared to others, which may result in a suboptimal user experience. Recent studies confirm that consistency in user interface (UI) design is a key factor in determining the success of a digital platform in delivering a good user experience. For instance, CareerFoundry (2020) states that maintaining consistency in UI design ensures that interface elements appear and behave uniformly, helping users predict interactions and reducing confusion. Additionally, UXPin (2023) emphasises that design consistency links UI elements to recognisable and predictable actions, which is crucial for an optimal user experience. Beyond consistency, simplicity is also a crucial aspect of interface design. According to research by Tognazzini

(2014), an overly complex interface or excessive design elements can slow down user comprehension and interaction with the system. This aligns with findings from the internal survey, which stated that students perceive the TERRAS website as too simplistic, leading to a lack of displayed information. For instance, there is no contact person available, no details regarding the location of the rooms for booking, and no clear loan procedure. The website currently only allows users to check room availability, whereas it has the potential to be optimized into a full-fledged booking platform, eliminating the need for onsite reservations.

Therefore, this study aims to evaluate the interface design of the TERRAS website using the principles highlighted by recent studies, including CareerFoundry (2020) and UXPin (2023), focusing on the aspects of simplicity, consistency, and perceivability to enhance user experience and reduce confusion in interactions. . The goal is to provide recommendations for improvement to enhance the user experience, benefiting both Telkom University and other educational institutions.

## METHODS

This study employs a qualitative method with a descriptive approach. Qualitative research is a method used to study subjects in their natural setting, where the researcher serves as the key instrument. Data collection is conducted through triangulation, data analysis is inductive, and the research results emphasise meaning rather than generalisation (Sugiyono, 2018). This research focuses on meaning, experiences, and the viewpoints of the subjects studied, with data collected through techniques such as in-depth interviews, participatory observation, and document analysis. The data is gathered using the following techniques:

1. In-depth Interviews: In-depth interviews were conducted with active Telkom University students as the primary users and Telkom University logistics staff as the website facilitators. The purpose of these interviews was to understand user experiences, identify challenges they encountered, and gather feedback on the TERRAS website interface design.
2. Observation and Comparative Analysis: Observations were carried out on the TERRAS website and compared with other websites within Telkom University. This analysis aimed to evaluate the level of design consistency and assess aspects of simplicity and perceivability based on established interface design principles.
3. Data Analysis: The collected data was analysed using a thematic analysis method to identify patterns and key themes related to the challenges and strengths of the TERRAS website design. The findings were then linked to relevant theories to provide recommendations for improvements that can be implemented by the website developers.

## RESULTS AND DISCUSSION

The following is a comparison between the TERRAS website and the iGracias website at Telkom University.

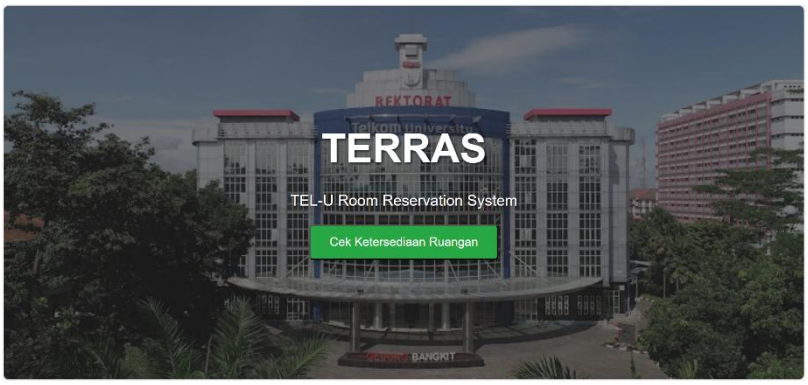


Figure 1. Website TERRAS
Source: TERRAS || TEL-U Room Reservation System: Guest –


Figure 2. Website Igracias
Source: i-GRACIAS | Telkom University

**Simplicity of the TERRAS Website**

Based on in-depth interviews conducted with 10 active Telkom University students, it was found that the simplicity of the figure 1 has both advantages and drawbacks. While the website features a minimalist design, it lacks sufficient information. Recent studies emphasise that simplicity in interface design does not mean sacrificing the necessary information for users. According to the Interaction Design Foundation, applying simplicity in design helps users achieve their goals more quickly and efficiently while still providing sufficient information. Additionally, UXPin (2021) states that simplicity in design involves removing unnecessary elements while ensuring

that users have everything they need to accomplish their tasks without obstacles. In this case, many students stated that the information displayed on the figure 1 is not clear enough, often causing difficulties in understanding how to access certain features.

When compared to other figure 2, such as Igracias, which students frequently access, TERRAS is significantly simpler and more minimalist. Visually, it primarily uses a single color—green—as a pop-up for the "Check Room Availability" feature. According to the principle of simplicity, this approach is effective, as it makes the website feel straightforward for users. However, it would be even better if the website remained simple while still being more informative. Regarding typography, the font us ed in this design appears simple and functional. The font size is sufficiently large to facilitate readability, particularly in headings such as *"Room Data"* and facility names like *"3x3 Basketball Court."* The use of black text against a white background provides good contrast, enhancing readability. However, differentiating font sizes or styles for specific elements, such as room titles and descriptions, could help create a clearer visual hierarchy. For example, increasing the emphasis on facility names could make them a more prominent focal point.

In terms of appearance, the layout principle applied is emphasis. Recent studies highlight that emphasis in design can be achieved through the strategic use of colour and typography. For instance, the Interaction Design Foundation (n.d.) notes that applying simplicity in design assists users in reaching their objectives more swiftly and efficiently, while still providing adequate information. Similarly, UXPin (2021) asserts that simplicity in design involves removing unnecessary elements, yet ensuring users have all they need to accomplish their tasks without hindrance. . Visually, on the main display, users' attention is naturally drawn to the green pop-up. This means that the primary focus is immediately directed toward checking room

availability. This principle was chosen to reinforce the simplicity of the design.Emphasis is a method used by designers to organize visual elements in a composition based on their level of importance, aiming to direct the audience's attention to one primary object. For example, The home page design of a digital news website is a key factor in determining its attractiveness to readers (Shen et al., 2024)

In conclusion, the TERRAS website successfully incorporates simplicity; however, its informational aspects need improvement. Important details such as the location for room reservations, a contact number, available services, loan terms, and the reservation procedure should be added. The goal is to maintain simplicity while enhancing the informativeness of the platform.

**Consistency in TERRAS Website Design**

A comparative analysis between the figure 1 and other websites at Telkom University indicates that TERRAS has a lower level of consistency. Differences in font usage, colors, and layout across pages make the user experience less intuitive. For example, other figure 2, such as iGracias, use maroon, gray, and white as their visual identity, which aligns with the university's official logo. However, the figure 1 lacks the visual identity of Telkom University, making its design feel disconnected from the university's branding, which predominantly features maroon, gray, and white. According to Telkom University's official website, the institution is committed to creating a green and eco-friendly campus environment. Therefore, the use of green on the TERRAS website introduces a fresh visual approach for Telkom University's facility reservation platformRecent research over the past decade has reaffirmed the importance of consistency in user interface design to enhance user comprehension and navigation. For instance, a study

(Rahmawati et al., 2023). Identified issues in the FOMO application due to inconsistencies in buttons and an unappealing interface, leading to reduced effectiveness and efficiency. After implementing design improvements based on the User-Centred Design approach, effectiveness increased by 42% and efficiency by 46.72% (Rahmawati et al., 2023). Similarly, (Nugraha et al., 2022) evaluated the "Lumajang Bersahabat" application and found that inconsistencies in interface design hindered user experience. By applying a Human-Centred Design approach, interface improvements resulted in an increase in effectiveness from 71.2% to 98.4% and efficiency from 65.5% to 97.5% (Nugraha et al., 2022). In the context of the TERRAS website, variations in design across pages may reduce navigational efficiency and confuse users. Therefore, applying consistency principles in interface design, as recommended by the studies above, is essential to ensure a better user experience and more efficient navigation.

The selected font types used on the figure 1 include both serif and sans-serif. However, these two typography styles convey very different meanings. Serif fonts are characterized by small lines (serifs) at the ends of each letter. In terms of perception, serif fonts are often associated with tradition, elegance, and credibility. According to the article *"Mengenal Jenis Font Serif: Sejarah, Penggunaan, dan Fungsinya"* on Kumparan, serif fonts evoke a sense of elegance, tradition, and credibility. This is why many companies that aim to present a classic and trustworthy image choose serif fonts for their branding. Serif fonts are commonly used in print media such as books, newspapers, and magazines because they enhance readability in long-form text. According to the article *"Typeface Styles for Web and Print Design"* by Duba Creative, popular serif fonts include Baskerville, Georgia, Garamond, and Times New Roman. Serif fonts are considered effective for

body text due to the presence of small ornamental strokes at the ends of each letter, which aid in readability by forming a smooth horizontal rhythm that helps direct the reader's gaze along the lines of text. Therefore, serif fonts are often used in formal, classic, or credibility-driven contexts. For example, A typeface that resembles a machine-like appearance can increase WTP (Willingness to Pay) for non-conversational questions, which are questions that are not presented in a conversational or personal manner.(Zhang et al., 2025).

Sans-serif fonts do not have small lines (serifs) at the ends of letters. An article on Pixcap.com states that sans-serif fonts offer a cleaner, more modern appearance and are easier to read on digital screens, making them ideal for web design and online content. As a result, sans-serif fonts are often used in digital design due to their high readability on screens, especially for short text or interface elements such as headings and buttons. Commonly used sans-serif fonts include Arial, Helvetica, and Open Sans. Recent research over the past decade has reaffirmed that well-designed typography enhances readability and usability, guiding users through content in a logical and seamless manner. Dick and Woloszyn (2023) identified that various typographic properties, such as visual hierarchy and font selection, play a crucial role in meeting user needs in digital interfaces. In this context, the typographic elements are already relatively clear, but consistency in font size and style could still be improved to enhance the visual hierarchy. Additionally, there is a lack of consistency in the choice of fonts used.

Below is the interface for location checking on the TERRAS website.

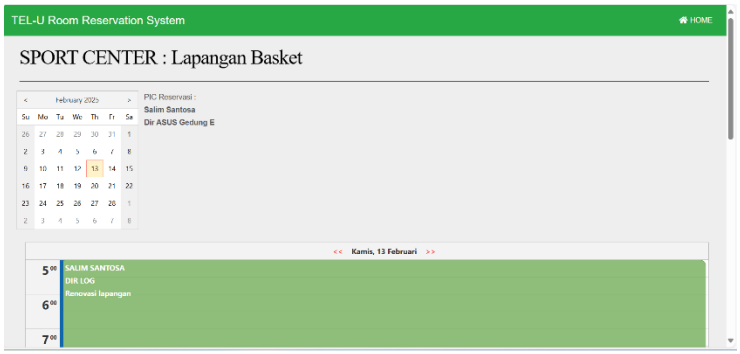


Figure 3. Room Reservation

Source: TERRAS || TEL-U Room Reservation System: Resv - Resvdetail

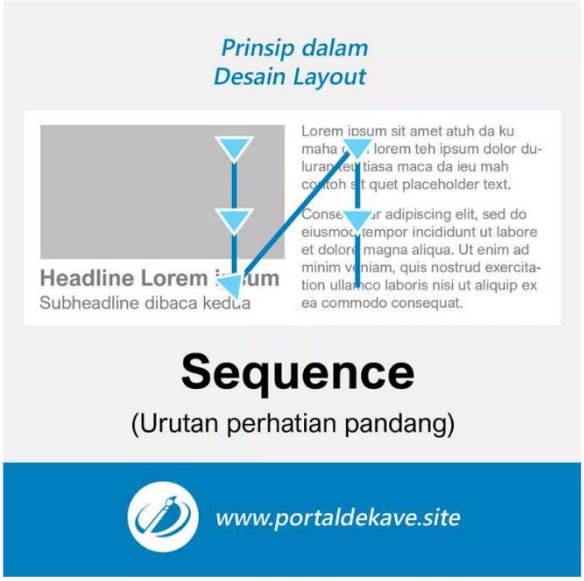


Figure 4. The Principle of Layout Design

Source: www.portaldekave.site

Figure 3, there is an empty space in the upper right corner that disrupts the visual balance and the user's viewing flow.In general, the reading pattern typically follows a flow from the top left downward, then continues to the top right and ends at the bottom right. This pattern reflects the conventional left-to-right writing system and influences how individuals scan and process visual information within a layout or design. In case, a reading behavior consisting of moving the mouse cursor (also known as the mouse pointer)

along sentences, marking the reading position, similarly to finger-pointing when reading a book.(Kirsh, 2022).

This influences how designers arrange elements within a layout to ensure an optimal flow of information. This means that the empty space in this area creates an imbalance in the layout, which can reduce readability, hinder user comfort while navigating the TERRAS website, and result in a suboptimal flow of information. Moreover, inconsistencies in the layout can lead to a suboptimal user experience, especially for visitors accustomed to well-organized visual structures. Unutilized empty spaces may cause important information to be overlooked or difficult to find, reducing the effectiveness of the website's visual communication. Therefore, design adjustments are necessary to ensure that key elements are strategically placed to enhance user engagement and reinforce the TERRAS website's visual identity. Based on the analysis conducted, the TERRAS website exhibits inconsistencies in three main aspects: color, font, and layout. These inconsistencies can disrupt the user experience, reduce readability, and diminish the website's professional impression and visual appeal.

**Perceptibility and Functionality of the TERRAS Website**

The perceptibility of the TERRAS website is relatively good, as its main function checking room availability can be easily performed. However, interviews with students revealed that the website has greater potential. Some respondents suggested that, beyond simply checking room availability, the website could be developed into a platform for reserving public facilities at Telkom University. Gaspar-Figueiredo et al. (2023) demonstrated that adaptive user interfaces, which adjust their aspects and behaviours based on the context of use, can improve user experience by reducing cognitive load and increasing engagement. Similarly, research by

Salim et al. (2023) highlighted that integrating artificial intelligence into interface design allows systems to dynamically respond to user needs and preferences, creating more intuitive and efficient interactions. Therefore, implementing adaptive interfaces that leverage advanced technologies is crucial to meeting the diverse and evolving needs of users. Recommendations for Feature Enhancements in the Facility Reservation System:

1. Add a Facility Reservation Feature: Enable users to reserve rooms and campus facilities, such as auditoriums, laboratories, and supporting equipment.
2. Provide Direct Booking Options: Implement a booking system with automatic verification and approval directly through the website.
3. Create Notification or Reminder Features: Ensure users receive alerts about their reservation schedules to prevent missed bookings.
4. Integrate with the Campus System: Connect the TERRAS website with the academic system to streamline facility reservations and maintain organized records.
5. Implement QR Code or Digital Student ID Features: Simplify access and verification for facility reservations using QR codes or digital student ID cards.

By implementing these suggested improvements, the TERRAS website can transform from a simple room availability checker into an integrated platform that facilitates campus facility reservations. This enhancement will not only improve the user experience but also support the efficiency of facility management at Telkom University. Based on the conducted interviews, the design of this website was not created using proper user interface design principles. An article from P2DPT Universitas Medan Area

states that alignment ensures all elements in a design are arranged neatly, creating order and readability. Well-aligned elements appear more structured and professional. Without design principles, the elements tend to lack a clear connection, resulting in a disorganized and unstructured appearance. Additionally, designs without a clear concept often fail to consider the needs or preferences of the target audience, making them less relevant or appealing.

## CONCLUSION

This study aims to evaluate the interface design of the TERRAS website at Telkom University by examining design consistency, information completeness, and the relevance of the design to the needs of active Telkom University students. The findings indicate that while the website excels in simplicity, it lacks informativeness, has a lower level of design consistency compared to other Telkom University websites, and demonstrates adequate perceivability, though there is room for optimisation. The implications of this study highlight the importance of implementing a creative process model in user experience-based interface design. This model emphasises that design should not only be aesthetically pleasing but also adaptive to the cognitive patterns and preferences of the target users. In the context of TERRAS, a more systematic approach grounded in Human-Centred Design principles is necessary to ensure better integration of visual elements and functionality. However, this study has certain limitations. Firstly, the analysis was conducted without direct experimentation on user experience in real-life scenarios, meaning that the effectiveness of the recommendations has not yet been empirically tested. Secondly, this study focuses more on design evaluation rather than technical aspects or system performance, both of which also influence overall user experience. Future research should adopt

a more in-depth experimental approach by testing the effectiveness of new design models through direct user trials. Furthermore, the development of a creative process model based on user behaviour data could serve as a valuable area of study, contributing to the advancement of digital interface design, particularly in the context of web-based facility booking systems.

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