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# Design of Interactive Health Promotion Portal Prototype at House of Health Promotion TeFa

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**Abstract:** TeFa House of Health Promotion at Polije is a Teaching Factory that is currently initiated by the Health Department's Health Promotion study program. This TeFa serves as a platform for health communication, information, and education, as well as a space for research and the dissemination of research findings by faculty and students. Based on the conducted situation analysis, TeFa Health Promotion House currently lacks integration of communication, information, and education media into health promotion activities. This deficiency leads to suboptimal management of health media content. The aim of this research is to create a web portal design for this problem. The novelty in this research lies in the integrated interface design of the health promotion media portal.The method used to develop this portal design is the User-Centered Design method. The results of testing and design analysis conclude that the portal design developed aligns with user expectations. The main features include Articles, Consultations, Videos, Audio, and Polls. For further research, the design can be expanded into an application

**Keywords:** Health Promotion; Portal; Prototype, Web

## 1. Introduction

Health promotion is a process that strives to empower an individual to enhance their ability to control health factors, thereby improving the quality of their health[1]. Health promotion programs aim to enhance the community's ability to live a healthy life. The Ministry of Health, in this case, as the government's representative in managing the country's healthcare affairs, has regulated health promotion activities within a policy framework formulated in accordance with Keputusan Menteri Kesehatan Nomor 1193/Menkes/SK/X/2004 about Kebijakan Nasional Promosi Kesehatan [2].

Based on its scope, health promotion is divided into five areas, namely: 1) Build Healthy Policy; 2) Create Supportive Environment; 3) Strengthen community action; 4) Develop personal skill; 5) Reorient Health Service  [3]. In order to achieve the goals of health promotion, it is necessary to have media that supports these health promotion activities. Several studies have implemented various media such as audio, video, text, images, and polling. Saragih et al., in their research, concluded that video and booklets have an impact on students' knowledge about health [4]. Meanwhile, Rahayu, in her research, stated that the influence of health education videos provided can improve knowledge about maintaining cleanliness [5]. Syukaisih's research on the effectiveness of leaflets in improving the knowledge of low-income communities about the dangers of smoking shows that health promotion using this media is effective in enhancing knowledge and attitudes[6]. Meanwhile, Sugiono's research on the advantages of podcasts in educating the public about vaccination programs yielded positive results, showing that podcasts are quite effective in disseminating information about the COVID-19 vaccine [7].

The current trend in internet usage is rapidly increasing. Based on data collected by the Association of Internet Service Providers in Indonesia in 2022, the internet penetration rate is 77.02%, which means that out of the total population of 272,682,600, approximately 210,026,769 people can access the internet. From this data, it is evident that most of the activities of the Indonesian population are focused on social media activities[8]. The increase in the number of internet users is closely tied to the development of interactive websites. Websites have become one of the most commonly used platforms for promotional purposes. This can be observed on various specific sites that utilize their websites for promotional activities. For example, Dr. Karmini Hospital in Tasikmalaya uses its website as a means of promotion[9]. In PHC Surabaya hospital, the website is also utilized as a promotional and informational medium [10]. he same applies in Ogan Ilir Regency, where the website is not only used for promotional purposes but also for hospital accreditation[11].

TeFa House of Health Promotion at Polije is one of the pilot Teaching Factories managed by the Health Promotion program of the Health Department. TeFa serves as a platform for health communication, information, and education. It also acts as a space for research and the dissemination of research findings by both faculty and students. Furthermore, TeFa serves as a channel for faculty members to contribute to the community by offering consultation services related to the development of community health promotion programs. To support these objectives, a multifunctional platform is needed for TeFa to utilize.

Based on the situation analysis, TeFa Health Promotion House in Polije is still in the early stages of development and lacks an integrated communication and education platform. To address this, creating a web portal is crucial for consolidating health promotion content in one central location, facilitating easier management control. The proposed solution is to develop a web portal, with the initial step involving the design of a user-friendly interface. The Web Portal represents the latest breakthrough in health promotion media. Unlike traditional formats that often feature only videos, social media content, posters, and articles[12], a web portal integrates these elements, providing a more comprehensive approach to health promotion  The objective of this research is to design a prototype using the User-Centered Design method for the process of creating a web portal. The user-centered design method can be used to design interfaces because it accurately reflects user needs[13]. The novelty in this research lies in the integrated interface design of the health promotion media portal.

## 2. Materials and Methods

The process of creating the E-Promtell interface design is the initial stage in the development of the E-Promtell portal. The interface design process is carried out using the User-Centered Design method. User-Centered Design is a method where the end-users play a pivotal role in determining the interface design that will be used. This approach ensures that the design is tailored to the needs and preferences of the users, resulting in a more user-friendly and effective interface [14]. The User-Centered Design method can be visualized as shown in the image below [15].
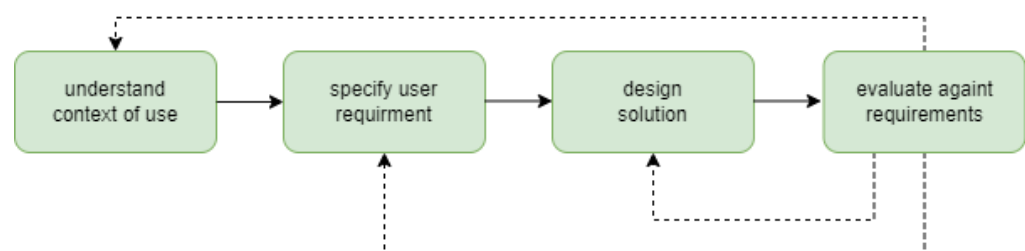


**Figure 1.** Metode User Centered Design

The User-Centered Design method consists of four main stages. Here are the detailed explanations for each stage:

1. Understand context of use

This stage is the initial step in the User-Centered Design method. In this stage, the focus is on understanding the issues related to the system being created.

2. Specify user requirement.

In this stage, the process will involve elaborating on the requirements of each user . It will entail breaking down the functional requirements. Each user's functional requirements will be detailed. In this stage, data will be collected from users by conducting direct interviews

3. Design solution

The functional requirements that were detailed in the previous stage will be used to model the user interface. This stage begins with creating initial interface sketches. These sketches will then be further refined by transforming them into more detailed designs.

4. Evaluate Against Requirement

To ensure that the goals of creating a user interface align with user needs, evaluation is necessary. The evaluation process involves direct user involvement. In this stage, questionnaires will be distributed to assess the design that has been developed.

Overall, the steps within that method involve communication with users. In this research, the data collection technique used involves conducting direct interviews and questionnaires with users. The users here consist of two types: administrators from TeFa and the general public. This is detailed further in the next chapter

## 3. Results and Discussion

### 3.1 Understanding context of use

The issues within the system were identified through interviews with the responsible parties at TeFa. From the interviews, it was revealed that TeFa currently lacks an integrated communication, information, and education platform. The promotional media currently used include social media platforms such as YouTube, TikTok, and Instagram. TeFa requires a system that can integrate these social media platforms into a web portal containing articles, videos, audio, polling, and chat. Articles, videos, and audio are used to post educational content for the public. The polling feature is used to conduct surveys related to health. With this feature, TeFa administrators can create polls, and users can view the poll results.

### 3.2 Specify user requirements.

Based on the problem analysis conducted in the previous stages, functional requirements for each type of user can be determined. In this case, users of the system can be divided into two categories: TeFa administrators and general users. Administrator Tefa refers to employees of TeFa who serve as operators of TeFa within the Interactive Health Promotion portal. On the other hand, general users are individuals who can access the portal, in this case, the general public. The detailed functional requirements for each user are as follows:

a) Administrator TeFa: update, insert, delete Artikel; updated, insert, delete Video; update insert delete Audio; update insert delete pooling; consultation

b) General User: view articles; online consultations; view videos; listen audio; view polls; design solution.

### 3.3 Design solution

After the functional requirements are determined, the next stage is the process of creating the interface design. The interface design is created by designing a prototype based on the acquired features. Here are the results of the interface design process for the Teaching Factory web portal, based on the previously identified functional requirements.
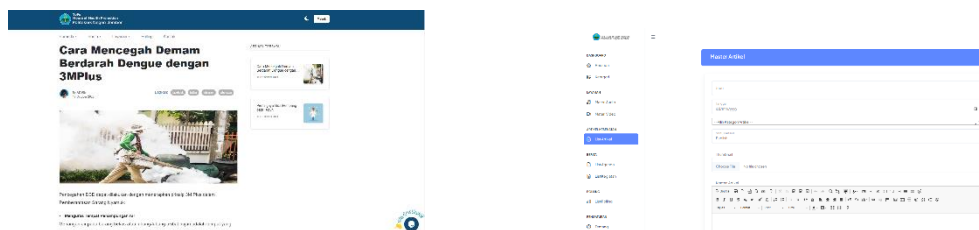
After the functional requirements are determined, the next stage is the process of creating the interface design. The interface design is created by designing a prototype based on the acquired features. Here are the results of the interface design process for the Teaching Factory web portal, based on the previously identified functional requirements.



**Figure 2.** Article Design Layout

Figure 2 shows the design of an article page where general users can view articles and an input article design. In the input article design, there is a field used to enter articles. Administrators can add, delete, and edit articles.
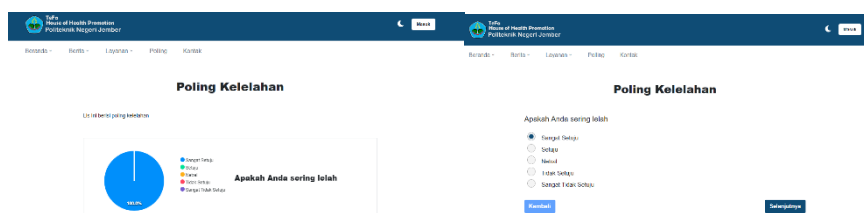


**Figure 3.** Polling Design Layout

The design in Figure 3 is used for creating polls. Administrators can add, delete, and edit polls. The polling feature can be used by TeFa operators to collect data through questionnaires related to health topics from general user respondents. The collected data will be processed by the system into interactive graphical displays. Additionally, the obtained data can be used as research material by TeFa for further studies.
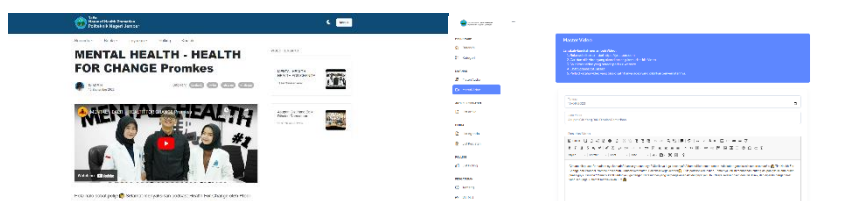


**Figure 4.** Video Design Layout

The design in Figure 4 is used for adding video. Administrators can add, delete, and edit video files. The video feature within this portal is used to embed videos that have been uploaded to YouTube. TeFa operators can upload health promotion video materials beforehand to YouTube. With this feature, users can directly access these videos through the portal
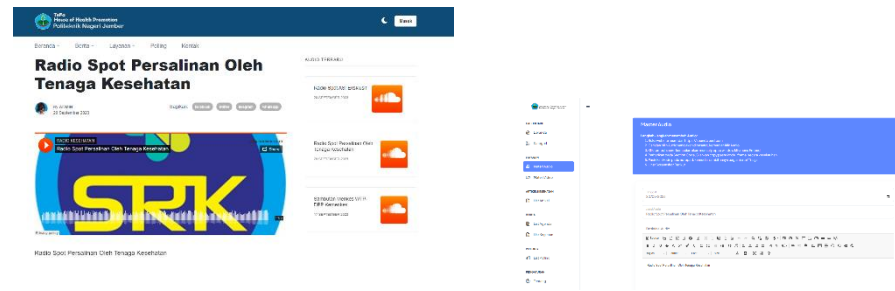
**Figure 5.** Audio Design Layout

The design in Figure 5 is used for adding audio content. Administrators can add, delete, and edit audio files. Audio content can be added from service providers such as SoundCloud. TeFa operators can upload MP3 formatted audio content to SoundCloud. The portal provides an embed audio feature, enabling access to the material through the portal.
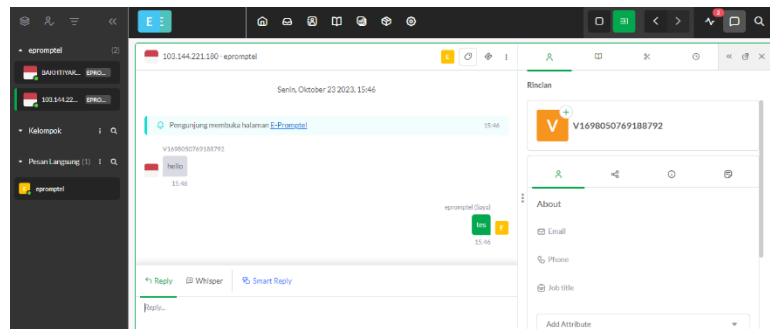


**Figure 6.** Chat Design Layout

The image above in Figure 6 depicts the interface design used for the chat feature. This chat feature serves as a communication tool between TeFa operators and general users. Through this feature, users can inquire about health promotion.Specify user requirements.

### 3.4 Evaluate Against Requirements

In this stage, testing is conducted to assess whether the created interface design is suitable or not. The testing process involves both general users and Tefa administrators. The total number of respondents involved in the testing process is 10 individuals. The usability test is carried out using the System Usability Scale (SUS), which includes 10 questions with response scores ranging from 0-5. In this study, the test is conducted by 10 evaluators. The System Usability Scale uses a Likert scale from one to five, where 1 represents "Strongly Disagree," 2 is "Disagree," 3 is "Neutral," 4 is "Agree," and 5 is "Strongly Agree.".

The process of calculating odd-numbered questions is done with the formula "question score - 1," while for even-numbered questions, the score is calculated using the formula "5 - question score." The total score for each question will then be multiplied by 2.5. If the final score for the system is above 68, it indicates that the system's usability is good. On the contrary, if the score is below 68, the usability level is considered low. Here is the questionnaire.

- P1: Frequently using the system.
- P2: The system created is quite complicated.
- P3: The system is easy to use.
- P4: Technical assistance is needed to use the system.
- P5: All features are integrated with each other.

- P6: Sistem has many inconsistencies.
- P7: Sistem is easy to learn.
- P8: The system is quite challenging to use.
- P9: The system is quite convincing when used.
- P10: Users need to undergo learning before using the system.

The results of the questionnaire can be seen in Table 1 below.

**Table 1**. The Usability Test Result

| Respondent | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | ∑ | Value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 31 | 77,5 |
| 2 | 3 | 3 | 3 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 33 | 82,5 |
| 3 | 3 | 4 | 4 | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 35 | 87,5 |
| 4 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 28 | 70 |
| 5 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 2 | 30 | 75 |
| 6 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 27 | 67,5 |
| 7 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 31 | 77,5 |
| 8 | 3 | 3 | 2 | 2 | 3 | 3 | 4 | 3 | 3 | 3 | 29 | 72,5 |
| 9 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 33 | 82,5 |
| 10 | 3 | 3 | 4 | 3 | 3 | 4 | 2 | 3 | 3 | 3 | 31 | 77,5 |
| **Mean** | | | | | | | | | | | | **77** |

Based on the total score obtained in the calculation from the table, the final score is 77. With a score above 68, it indicates that the design interface is quite good. The system is considered suitable for further development.

### 4. Conclusions

From the information gathering process, the E-Promptell Portal (Interactive Health Promotion) features key elements including articles, videos, audio, polling, and a chat feature. Users of this portal are divided into two categories: Tefa administrators and general users. Testing was conducted using the SUS method to evaluate whether the designed portal meets user needs or not. The test results indicate that the system design falls into the "good" category, and the system design can be further developed into a more complex application.

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