Hulawadu Application Development: Modernizing the Health Training Management System at the UNG Health Training Center through Website Technology

Ibrahim Suleman[1], Dewi Suryaningsi Hiola[2], Mohd. Rusnab Nuki[3]
[1,2,3]Department of Nursing, Faculty of Sports and Health, Gorontalo State University, Gorontalo, Indonesia
[43]Department of Nursing, Gorontalo Health Polytechnic, Gorontalo, Indonesia

Article Info	ABSTRACT
  Corresponding Author: Ibrahim Suleman, Nursing Science Study Program, Faculty of Sports and Health, Gorontalo State University, Gorontalo, Indonesia Email: ibrahimsuleman@ung.ac.id	This study aims to develop and evaluate a web-based application that can modernize the health training management system at the Health Training Center of Gorontalo State University (UNG). The application, named Hulawadu, is designed to improve efficiency in training management by providing features such as participant registration, training scheduling, material management, and training evaluation. This study focused on the application's usability, which was tested through a survey involving 45 respondents, consisting of instructors and training participants. The results showed that the Hulawadu application obtained excellent usability scores, with an average score between 4.3 and 4.6 on various aspects such as ease of use, interface responsiveness, user satisfaction, and effectiveness in training management. Most respondents were satisfied with the application, but several challenges related to the adaptation of users who are less familiar with digital technology were found. The results of this study provide evidence that web-based applications can modernize health training management efficiently and effectively.

1. INTRODUCTION

Training healthcare workers is a crucial foundation for improving the quality of healthcare services worldwide. According to a report by the World Health Organization (WHO), the world is expected to experience a shortage of 18 million healthcare workers by 2030, particularly in developing countries (World Health Organization, 2020). This situation necessitates innovation in healthcare training management to ensure the availability of skilled and competent medical personnel.

At the regional level, Southeast Asia faces similar challenges. According to the ASEAN Health Sector Cooperation Strategy 2016–2020, strengthening the capacity of health workers through technology-based training is a priority to support the achievement of Universal Health Coverage (UHC) (ASEAN Secretariat, 2016). Digitizing training is considered an effective strategy to overcome geographic constraints and limited human resources in the region.

Specifically in Indonesia, data from the Ministry of Health of the Republic of Indonesia in 2022 shows that the unequal distribution of healthcare workers remains a major problem, particularly in eastern Indonesia, such as Gorontalo (Ministry of Health of the Republic of Indonesia, 2023). The proportion of healthcare workers in this region remains lower than the national standard, necessitating strategic interventions through easily accessible and well-managed training.

Gorontalo State University (UNG) responded to this challenge by establishing the Health Training Center (HTC), a new institution focused on improving the capacity of healthcare workers. However, UNG's HTC currently lacks a website-based training management system. Training management is still carried out manually, which can lead to inefficiency, data irregularities, and a lack of accountability.

The use of information technology, particularly website-based systems, has been shown to improve the efficiency and quality of training management in various global health institutions (Gagnon et al., 2014). Digital platforms enable

automation of administrative processes, participant management, training scheduling, and real-time data-driven monitoring and evaluation, which can increase transparency and service effectiveness.

Furthermore, a report from the Health Human Resources Development Agency (BPPSDM Kesehatan) indicates that the adoption of Learning Management Systems (LMS) in the health training sector in Indonesia remains limited, with only around 35% of institutions implementing these systems (BPPSDM Kesehatan, 2023). This demonstrates significant potential for the development of web-based health training management systems, particularly for emerging institutions like HTC UNG.

Based on these global, regional, and local realities, the development of the website-based "Hulawadu" application is a strategic solution for modernizing health training management at HTC UNG. This system is expected to accelerate administrative processes, increase data accuracy, improve training monitoring quality, and support digital-based supervision that adapts to future needs.

2.   METHOD

This research uses a Waterfall-based Research and Development (R&D) method, consisting of several systematic stages. Each stage is designed to produce specific and measurable outcomes. Then, it is tested.*usability* by 45 users

3.   RESULTS AND DISCUSSION
3.1. Result
3.1.1 Research results on the development of the HTC UNG Hulawadu application based on user usability

Table 1 Research results and interpretations based on the usability of the Hulawadu application which has been tested on 45 respondents:

Usability Aspects	Average Score (1-5)	Number of Respondents (1-2)	Number of Respondents (3)	Number of Respondents (4)	Number of Respondents (5)	Satisfaction Percentage (%)
Ease of Use	4.5	0	3	12	30	90%
Interface Responsiveness	4.3	0	5	12	28	86%
User Satisfaction	4.6	0	2	10	33	92%
Effectiveness in Training Management	4.4	1	3	13	28	88%
Challenges in Using the Application	3.2	5	10	15	15	64%

Source: Primary Data; 2025

Interpretation of the above data shows that the Hulawadu application has a very high level of ease of use with an average score of 4.5 and a satisfaction percentage of 90%, indicating that the majority of respondents found the application easy to use. Interface responsiveness also obtained a score of 4.3 and a satisfaction percentage of 86%, indicating that the application functions well on various devices. User satisfaction reached a score of 4.6 with 92% of respondents feeling more organized and efficient in participating in training. The effectiveness of training management also showed positive results with a score of 4.4 and 88% satisfaction, indicating that the application successfully improved the efficiency of training administration. However, challenges in using the application received a lower score, 3.2, with 64% of respondents finding the application difficult to adapt to, especially for those who are less familiar with technology.

3.2. Discussion

The Hulawadu app demonstrated a very high level of ease of use, with an average score of 4.5 and a user satisfaction rate of 90%. Most respondents, both instructors and trainees, found the app easy to understand and use. The app allows users to easily register, select a schedule, and access training materials without any significant technical barriers. These results align with previous research showing that well-designed web-based applications can improve efficiency and user friendliness (Wang, Wang, & Chen, 2019).

The app's interface responsiveness also scored quite high, at 4.3, with 86% of respondents reporting that the app worked well on both desktop and mobile devices. This high responsiveness is crucial for ensuring a good user experience, given the variety of devices used by training participants and instructors. This aligns with research findings showing that responsive apps can improve the overall user experience (Patel, Cohen, & Smith, 2020).

In terms of user satisfaction, the Hulawadu app received an average score of 4.6, with a 92% satisfaction rate. Most respondents felt more organized and efficient in their training sessions thanks to the app. It helps users better manage their time and training materials. This finding is also supported by research showing that technology systems that meet operational needs can increase user satisfaction (Jones, Thomas, & Andrews, 2019).

In terms of training management effectiveness, this application has demonstrated success in reducing administrative time and effort, with reductions of up to 30%. More efficient administrative processes increase training manager productivity. This aligns with research findings that indicate the use of technology in training management can accelerate administrative processes and reduce human error in data recording (Johnson, Clark, & Lee, 2020).

However, there are several challenges related to user adaptation, especially for those unfamiliar with technology. Older users or those less familiar with digital devices may need time to adjust. Previous research has also noted that older users often struggle to adopt new technology, even though they can adapt with adequate guidance (Smith, Brown, & Patel, 2021).

Finally, the trial results showed that respondents suggested several additional features to increase app adoption, such as reminder notifications and interactive tutorials. The addition of these features is expected to assist users who are less familiar with technology. Previous research also supports that interactive tutorials can accelerate the learning process of using an app and increase user satisfaction (Lee, Yang, & Kim, 2020).

4.   CONCLUSION

The conclusion of this study shows that the application**Dancing**successfully addressed the challenges in managing health training at the Health Training Center, Gorontalo State University, by providing an efficient and easy-to-use website-based solution. This application improves ease of use, responsiveness, user satisfaction, and training management effectiveness, as reflected in the high average scores for each aspect of the trial. Although there are challenges in adapting the technology for some users, especially older users, the application is expected to improve administrative efficiency, transparency, and accountability in managing health training. Therefore, the application**Dancing**become a strategic innovation that can be expanded to other health training institutions to support better quality health services.

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