Original Research

Inventory System for Physiotherapy Laboratory Facilities Based on a Website

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ABSTRACT

Background: Touching the digital era requires innovation to make work easier, including the inventory system so that it is more optimal, effective and efficient. The aim of this research is to facilitate the inventory process of laboratory equipment so that it is more optimal, effective and efficient.

Methods: This research applies the Research and Development (RnD) method. The website prototype was assessed by two experts who have high qualifications, including master's degrees and experience in creating physiotherapy service applications. Apart from assessment by experts, the prototype was also evaluated by physiotherapy students from Muhammadiyah University of Surakarta class 2021 to 2023 via an online questionnaire.

Results: Test results show that the existing features and menus provide ease of use in providing information to users. Based on the results of expert assessments and testing of the website, it was found that the website can be used according to its function, although there are still many shortcomings and things that need to be improved to be used as a reference for further research and development.

Conclusion: The website in the form of a prototype laboratory facility inventory system implemented in the UMS physiotherapy study program is quite suitable for use, although it still requires further improvement and development so that the website is better to use.

INTRODUCTION

In the modern era, the use of information technology is growing rapidly and plays an important role in every job and in our daily lives. Utilizing information technology can produce accurate, effective, and efficient information according to our needs (Yuwono, 2023). In today's digital age, information can be presented through websites, as websites can deliver a wide range of functions, from conveying to sharing information (Syailendra et al., 2024).

Inventory refers to the activity of recording, calculating, managing, and reporting assets owned by an institution (Usnaini et al., 2021). Educational facilities are a crucial aspect of managing the education sector. One of the key stages in facility management is conducting an effective inventory of assets (Nurmayanti & Bahari, 2020). This inventory helps assess the need for facilities within an institution, including in the education sector. Manual inventory methods, such as recording information in a book, are considered suboptimal in today's digital age. This traditional method not only consumes a lot of time but also limits accessibility, as information cannot be accessed by multiple people simultaneously. Website-based inventory will make the inventory process easier, the time required will be shorter, website-based inventory data storage is safer, website-based inventory makes it easier to find the information needed so it is more effective and efficient.

To meet the high demand for information, it is essential to have adequate information websites supported by QR codes. QR Code is a two-dimensional form that can represent data in written form in a code. Scanning a QR code can directly link users to a web page, making it easier to access information related to facility inventory. This approach allows multiple users to access the information at the same time, enhancing its efficiency, effectiveness, and overall utility.

Information technology can be utilized for managing facilities in the education sector, including at the university level. Effective facility management is expected to positively impact the teaching and learning process, helping students achieve educational goals more efficiently (Jafar et al., 2020). Education providers need to improve the quality of education in line with contemporary demands. Laboratory equipment is a facility that supports the learning process on campus, using a website to provide data information regarding laboratory equipment will make it easier for students to access it anywhere and anytime, this convenience can facilitate the learning process because students do not need to be confused and have difficulty accessing it. data regarding the availability of tools when using them.

This research aligns with previous studies. For instance, the study titled "Website-Based School Facilities and Infrastructure Information System at SMK Bakti Purwokerto" concluded that a website-based information system facilitates the management of school facilities and infrastructure (Hesti et al., 2020). Another study, "Web-Based Facilities and Infrastructure Inventory Information System at Veteran High School Purwokerto," found that a web-based system significantly improves the quality of education (Prasastono & Holili, 2022). Similarly, the study "Design of a Web-Based School Facilities and Infrastructure Inventory Information System" concluded that such systems make the recapitulation of facilities and infrastructure inventory data more effective and efficient (et al., 2023).

Manual inventory by writing in a book is slower in providing information so it can slow down the process of providing information. Looking at previous research,

using a website makes it easier to manage data and improves the quality of education as well as making the inventory process more effective and efficient. With the surge in internet users in the digital era (Pristianto et al., 2024), it is hoped that this innovation will address the issues associated with less optimal educational facility inventory systems, making them better, more accessible, and up-to-date.

MATERIALS AND METHOD

The method used in this research is the Research and Development (R&D) method. As the name suggests, R&D is understood as a process aimed at developing or perfecting a product (Okpatrioka, 2023). This research involves development work intended to produce a product, test its application, and carry out assessments to ensure the product functions effectively.

The findings of this research include the design of a website in prototype form, which will be tested, evaluated, and refined. The prototype was assessed by two experts in the field of physiotherapy services. These experts were selected based on their education, employment, experience, and availability to evaluate the prototype. Both experts hold at least a master's degree in physiotherapy and have experience in creating physiotherapy service applications.

In this research, we have reached the development stage, which involves creating the website prototype and testing its features. Besides expert evaluation, the prototype was also assessed by several UMS physiotherapy students from the 2021 to 2023 classes, who were responsible for the course. They provided feedback through a questionnaire distributed via a Google Form link.

RESULTS

The researcher created and developed this website with the assistance of an information systems student from Amikom University, Yogyakarta. The website was created from December 2022 to February 2023. A website is a collection of pages that displays various types of information, such as text, still and moving images, animations, sound, and video. It can also display a combination of these elements, forming an interconnected series of pages linked via a network of hyperlinks that can be accessed via the internet (Agustin et al., 2021).
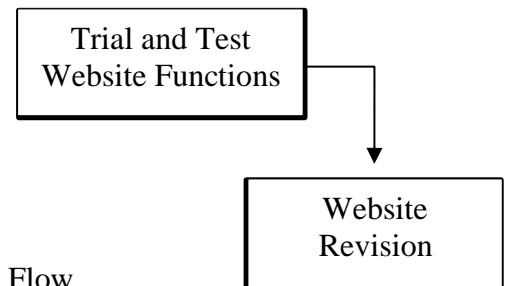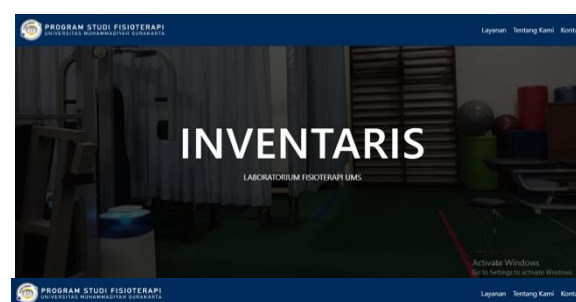
Trial and Test Website Functions

Website Revision
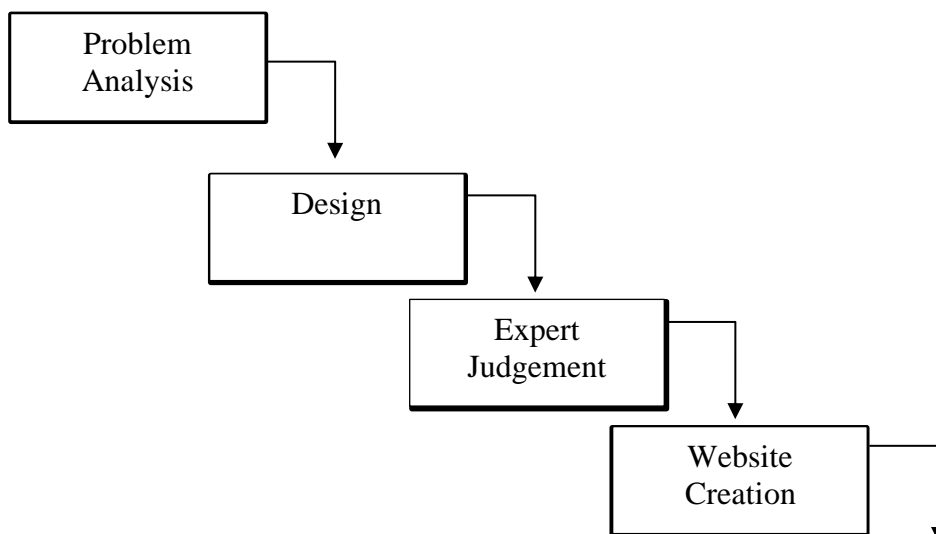
Figure 1. Stages of Website Creation Flow

The website is a prototype designed to facilitate users in finding information about physiotherapy equipment in the UMS physiotherapy laboratory. The description of the website is as follows:

Table 1. Application Features and Functions

Website Page	Explanation
Home Page	The home page contains general information about the website that users will see first.
Tool Information Page	The tool information page will contain data such as the name of the tool, its brand, year of purchase, function, condition, and the location where it was obtained.
Loan Information Page	The loan information page contains data on equipment availability.
Loan Data Page	The loan data page contains information on borrowers and the equipment they have borrowed.
Tool Use SOP Page	The tool use SOP page contains the steps for the proper and correct use of the tools.
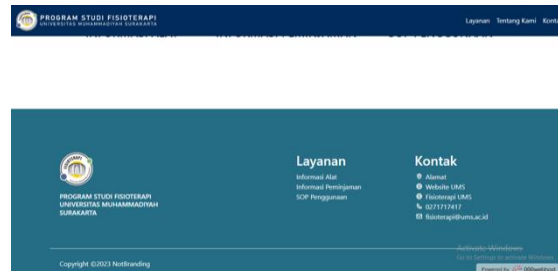
Figure 2. Home page display

Figure 3. Tool Information Page Display

Figure 4. Loan Information Page Display

Figure 5. Loan Information Page Display After Clicking
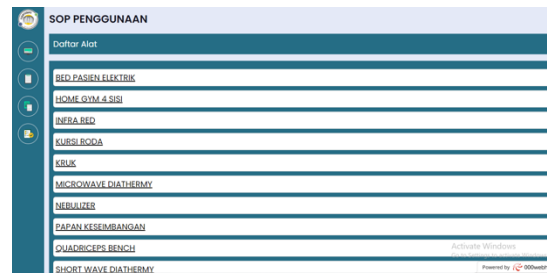

Figure 6. Loan Data Page Display
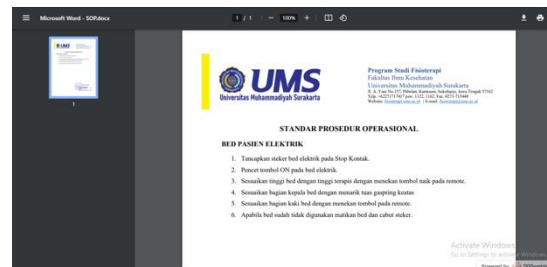
Figure 7. Tool Use SOP Page Display

Figure 8. Tool Use SOP Page Display After Clicking

DISCUSSION

Expert judgment is a method for measuring unknown parameters. The assessment of the website's functionality was carried out by experts, who provided several suggestions. For instance, they recommended adding a basket feature to the equipment borrowing page to facilitate simultaneous borrowing of multiple tools. They also suggested incorporating an admin page to allow laboratory staff to manage the website, and advised that monthly equipment loan data should be downloaded and saved as a PDF file for data collection purposes in the UMS physiotherapy laboratory.

While some features are functional, there is still significant room for development. The tool loan page needs to be more detailed to help identify the perpetrator in case of theft or loss. Additionally, the tool information page lacks updated data, as the information on the website has not been refreshed to the latest version. Website security also needs improvement to prevent the theft of important data, such as telephone numbers of equipment borrowers.

Assessments conducted through widely distributed questionnaires show that students are satisfied with the website's features. User satisfaction is a key indicator of website quality; as evidenced by the fact that greater user satisfaction correlates with higher website quality (Agustiningsih et al., 2024). The website was created in prototype form using MySQL as the database system. A database is a collection of interconnected data and a crucial component of an information system because it serves as a data provider for its users (Istiqomah, 2022). MySQL is a popular relational database system known for its capability to handle high-level transactions and large-scale web applications (Anwar et al., 2024). It uses Structured Query Language (SQL) commands as a connecting language between the website and the database.

Ease of access is an important aspect to consider. A website that is difficult to access is not suitable for use, as it fails to provide the necessary information to its users (Deni & Ferida, 2023). Therefore, it is important that the website can be accessed on a larger scale. The website is hosted using NiagaHoster, which provides web hosting

services to store data and website files, allowing the website to be accessible to a wide audience.

CONCLUSION

The website, designed as a prototype for a laboratory facility inventory system in the UMS physiotherapy study program, has been assessed by experts and deemed quite feasible for use. However, it still requires further improvement and development to enhance its functionality and usability. After undergoing a trial process with UMS physiotherapy students, the website proved effective in making it easier for students to find information about tools and to borrow equipment from the UMS physiotherapy laboratory.

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