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Evaluation of the Usability of the Academic Information System Using the System Usability Scale (SUS) Method

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ABSTRACT

The increasing reliance on digital platforms in higher education necessitates the evaluation of system usability to ensure effective user interaction and satisfaction. This study aims to evaluate the usability of the Academic Information System (AIS) at [University Name] using the System Usability Scale (SUS) method. SUS is a reliable, standardized tool for measuring the usability of interactive systems, providing a quick and quantitative assessment. Data were collected from a sample of 100 students and academic staff who frequently use the AIS for various academic activities, including course registration, grade checking, and academic planning. The results of the SUS analysis yielded an average score of 72.5, indicating that the system falls within the "Good" usability category. However, several usability issues were identified, such as navigation complexity and visual layout inconsistencies, which slightly reduced user satisfaction. These findings highlight the importance of continuous usability testing and user-centered design in the development of academic systems. The study recommends specific design improvements to enhance user experience and system performance. Overall, the SUS method proved effective in identifying usability strengths and weaknesses, offering valuable insights for future system optimization.

Keywords:

System Usability Scale (SUS), Academic Information System, Usability Evaluation, User Experience, Higher Education.

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1. INTRODUCTION

The rapid development of information and communication technology has had a significant impact on various sectors of life, including the field of education[1]. One form of implementing this technology is the application of the Academic Information System (AIS) in the course environment[2]. The Academic Information System is a computer-based system designed to manage academic data and information, such as admissions, assessments, and monitoring student progress. The main objective of this system is to enhance the efficiency[3], accuracy, and ease of managing academic activities[4]. In this digital era, the presence of Academic Information Systems has become crucial in supporting the teaching and learning process as well as administration[5]. However, the success of this system does not only depend on the sophistication of the technology or the completeness of its features[6], but also on the level of usability of the system by its users[7]. Usability is one of the important aspects in the development of information systems because it determines the extent to which the system can be used effectively[8], efficiently, and satisfactorily by its users. The problem that often arises in the implementation of Academic Information Systems is the mismatch between the system design and the needs and expectations of users[9]. Some users experience difficulties in operating the system[10], such as confusion in navigation, a less intuitive interface, or processes that require too many steps to complete a task. When the system is difficult to use, it can lead to decreased productivity, increased user errors, and reluctance to use the system consistently. To measure the usability level of a system, an appropriate evaluation method is required. One of the most widely used methods globally is the System Usability Scale (SUS). SUS is an evaluation instrument developed by John Brooke in 1986 and has proven effective in assessing the usability of various systems, both software and hardware. This method uses a questionnaire consisting of 10 statements with a Likert scale, which then produces a final score that represents the user's perception of the system.

The advantages of the SUS method are its simplicity[11], flexibility, and its ability to provide quantitative results that can be easily compared[12]. Additionally, SUS also provides fairly reliable results even when used with a relatively small number of respondents. Thus, this method is very suitable for use in academic environments to evaluate the systems used by students, teachers, and administration. This research aims to evaluate the usability level of the Academic Information System[13] used at LKP Karya Prima using the System Usability Scale method. This evaluation is conducted to determine the extent to which the system meets the needs and expectations of its users in terms of ease of use[14], efficiency, and user satisfaction. The results of this study are expected to serve as a basis for system developers to make improvements and enhancements in usability aspects, so that the system can be used more optimally. In its implementation, this research involves respondents from among students and teachers who are active users of the Academic Information System[15]. Respondents were asked to fill out the SUS questionnaire after using the system to perform several academic activities such as filling out surveys and checking grades. The collected data were then analyzed to obtain the average SUS score and identify areas that need improvement. By conducting usability evaluations systematically, educational institutions can ensure that the systems they use truly support academic activities effectively and efficiently. This evaluation is also an important part of the user-centered design principle, where end users are directly involved in the design and refinement process of the system. Overall, this research has high urgency and relevance considering the important role of Academic Information Systems in supporting the educational process in the digital era. By identifying the weaknesses and strengths of the system from the user's perspective, decision-making related to system development and maintenance can be carried out more effectively. It is hoped that the results of this research can make a tangible contribution to the improvement of information system quality in the higher education environment and provide a reference for similar research in the future.

2. RESEARCH METHODOLOGY

2.1 Research Methodology

This research uses a descriptive quantitative method aimed at evaluating the usability level of the Academic Information System. The evaluation is conducted using the System Usability Scale (SUS) instrument, which consists of a questionnaire with 10 statements on a Likert scale from 1 to 5. The respondents in this study consist of students and lecturers who are active users of the system. Data was collected through the distribution of questionnaires online. The scores from each question are processed in a specific manner according to the SUS guidelines, then multiplied by 2.5 to produce a final score in the range of 0–100. The score is interpreted to determine whether the system falls into the categories of poor, fair, good, or very good. This result is used to assess whether the system is easy to use, efficient, and meets user needs.

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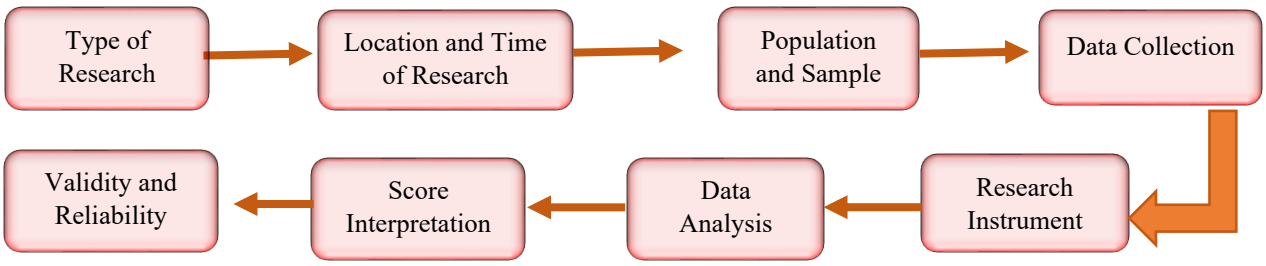

Figure 1. Research Structure

a. Type of Research

This research is a descriptive quantitative study aimed at evaluating the usability level of the Academic Information System using the System Usability Scale (SUS) approach. This approach was chosen because it can provide an objective and measurable picture of user perceptions of the system used.

b. Location and Time of Research

The research was conducted in the environment of LKP Karya Prima, specifically in the units that use the Academic Information System in their daily activities, such as Students, Instructors, and administrative staff. The research was carried out in April.

c. Population and Sample Population

In this study are all active users of the Academic Information System, namely Students and Instructors at LKP Karya Prima. The sampling technique used is purposive sampling, which is the intentional selection of respondents based on certain criteria, among others:

1. Actively using the Academic Information System for at least one semester in the last term,
2. Has login access and has used main features such as filling out surveys and checking grades.

a. Location and Time of Research

The number of respondents in this study was 100 people, consisting of 70 students and 30 teachers, in order to obtain a more diverse perspective.

d. Data Collection Techniques

The data collection technique was carried out by distributing the SUS questionnaire to respondents online using Google Form. In addition to the SUS questionnaire, direct observation of the system usage process and brief interviews with several respondents were conducted to obtain additional information regarding the challenges and impressions of using the system.

e. Research Instrument

The main instrument in this study is the System Usability Scale (SUS), which consists of 10 statements with a 5-point Likert scale, namely:

1. 1 = Strongly Disagree
2. 2 = Disagree
3. 3 = Neutral
4. 4 = Agree
5. 5 = Strongly Agree

Statements in the SUS questionnaire are arranged alternately between positive and negative statements, covering aspects of ease of use, user trust in the system, and operational efficiency.

f. Data Analysis Techniques

The collected data were analyzed using the SUS score processing formula as follows:

1. For every question with an odd number (positive):

Contribution score = (respondent's answer – 1)

2. For every even-numbered question (negative):

Contribution score = (5 – respondent's answer)

After that, all contribution scores are summed and multiplied by 2.5 to obtain the final SUS score, with a value range from 0 to 100.

g. Interpretation of the SUS Score

The obtained SUS score is then interpreted based on the standards set by Brooke (1996) and Bangor et al. (2009), as follows:

Table 1 : Interpretasi Skor SUS (System Usability Scale)

SUS Score	Usability Category
< 50	Poor
50 - 69	Sufficient
70 - 79	Good
80 - 89	Excellent
≥ 90	Best Imaginable

This interpretation helps provide an overview of the overall usability level of the system based on user perception.

3. RESULT AND DISCUSSION

3.1 Data Collection Results

This study involved 100 respondents, consisting of 70 students and 30 lecturers who are active users of the Academic Information System at Lkp Karya Prima. Each respondent was asked to fill out a System Usability Scale (SUS) questionnaire consisting of 10 statement items with a Likert scale of 1-5.

From the SUS score calculation results, the following data were obtained:

Table 2. Recapitulation of Respondents' SUS Scores

No	Respondent Category	Number of Respondents	Average SUS Score	Usability Category
1	Students	70	73.2	Good
2	Teachers	30	69.1	Marginal
-	Total Average	100	72.1	Good

Students gave an average score of 73.2, which falls into the “Good” category based on the SUS interpretation scale.Teachers gave an average score of 69.1, slightly lower and falling within the lower limit of the “Marginal” category, close to “Good”. The overall average total was 72.1, indicating that the system was generally rated as having good usability.

3.2 SUS Score Interpretation

Based on the SUS interpretation guidelines from Bangor et al. (2009), the score value between 70-79 is included in the "Good" category. This means that the system has met user expectations in the aspects of ease of use, efficiency, and comfort of interaction. However, although the score is classified as good, there are differences in perceptions between Students and Teachers. Students are generally more familiar with digital technology and online systems, so they more easily adapt to the system interface. Meanwhile, some teachers experienced difficulties, especially in terms of navigation and menu display, which were considered less intuitive.

3.3 Additional Findings

In addition to the quantitative data from the SUS, the researcher also conducted short interviews with some respondents. From these results, several issues were found that need attention:

a. The interface (UI) is considered too dense by some teachers, making it difficult to find certain menus.
b. The loading speed of the system is sometimes slow when many users access it simultaneously.
c. The feature of searching grades or schedules is considered inconsistent in some devices (especially on mobile).

3.4 Discussion

The results of this study indicate that the Academic Information System has a good level of usability, but there are still some aspects that need to be improved to be more inclusive and optimal for all users.

The System Usability Scale (SUS) method proved to be effective in providing an overview of the user experience of the system. The use of this method allows institutions to get quick and standardized feedback, which can be used as a reference in the system improvement process.

It is important to note that SUS scores not only indicate user satisfaction, but also reflect the efficiency and effectiveness of the system design in supporting user tasks. Therefore, the score that has been obtained becomes the basis for:

a. Re-evaluating the user interface design.
b. Adjusting features to make them more accessible to all groups.
c. Conduct training or socialization of the system, especially for teachers or staff who are not accustomed to using technology intensively.

4. CONCLUSIONS

Based on the results of the research that has been done, it can be concluded that the level of usability of the Academic Information System at Lkp Karya Prima is generally in the "Good" category based on the results of measurements using the System Usability Scale (SUS) method. The average SUS score obtained from 100 respondents is 72.1, which indicates that the system has been able to meet most user needs in terms of ease of use, interface clarity, and operational efficiency. Although the system was generally rated positively, there were differences in perception between user groups. Students tended to give higher scores than teachers, indicating the need for a more inclusive system design approach that takes into account the comfort levels of all types of users, including those who are less familiar with technology. Additional findings from the interviews indicate that some aspects still need to be improved, such as the navigation structure, access speed, as well as the responsiveness of the display on mobile devices. Therefore, continuous improvement based on user feedback is necessary to improve the overall quality of the system. Thus, evaluation using the SUS method proved effective in identifying the strengths and weaknesses of the system from the user's perspective, as well as providing strategic direction in the development and improvement of the Academic Information System in the future.

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