

Usability evaluation of the *state junior high school 40 palembang* website using the system usability scale (SUS)

Muhammad Yunus Syafaruddin¹, Megawaty¹, Ari Muzakir²

¹ Information Systems, Faculty of Science and Technology, Universitas Bina Darma

² Information Engineering, Faculty of Science and Technology, Universitas Bina Darma

muhammad.yunus290598@gmail.com

Submitted: August 26, 2025; Revised: August 29, 2025.; accepted: : October 30, 2025

Abstract

The increasing reliance on digital platforms in education highlights the importance of website usability for supporting academic and administrative activities. This study evaluates the usability of the State Junior High School 40 Palembang website using the System Usability Scale (SUS), a widely adopted and reliable method for measuring user experience. Data were collected from 50 respondents representing students, teachers, and administrative staff through observations, documentation, and an online SUS questionnaire. The overall SUS score achieved was 75.6, which places the website in the Good usability category. Further analysis revealed differences among user groups: administrative staff rated the system as Excellent (82.5), teachers as Good but close to Excellent (78.0), and students as Good but with the lowest score (72.5). These variations indicate that user familiarity, task type, and device context strongly influence usability perception. Benchmark comparisons confirmed that while the website surpasses the global average threshold, improvements are required to elevate it to the Excellent level consistently across all groups. Key areas for enhancement include navigation consistency, user guidance, and mobile responsiveness. Addressing these aspects will ensure broader user satisfaction, higher efficiency, and alignment with best practices in educational website usability.

Keywords: website usability, system usability scale (sus), educational technology, user experience, mobile responsiveness.

1. Introduction

The rapid advancement of information and communication technology has significantly transformed the education sector. Schools increasingly rely on web-based information systems to deliver services, provide access to learning materials, and share academic and administrative information with students, teachers, and parents. A school website plays a crucial role as an information hub that supports transparency, accessibility, and communication, making it an essential component of digital transformation in education. However, the effectiveness of a school website is strongly determined by its usability. Even a system with comprehensive features may fail if users find it difficult to navigate, inconsistent in its design, or confusing to operate. Poor usability can reduce user satisfaction, discourage adoption, and ultimately hinder the achievement of institutional goals. Therefore, systematic usability evaluation has become a necessary step in ensuring that school websites provide real benefits to their stakeholders.

A variety of usability evaluation methods have been proposed in prior research. Heuristic evaluation and think-aloud protocols have been widely adopted to capture qualitative insights into user interactions, . Other approaches, such as the User Experience Questionnaire (UEQ) and Cognitive Walkthrough, provide a broader picture of user perception but often require expert involvement and complex analysis, . While these methods are valuable, their limitations in terms of scalability and efficiency have encouraged the use of more practical techniques.

The System Usability Scale (SUS) has emerged as one of the most widely used and reliable instruments. Developed by , SUS is a lightweight questionnaire consisting of ten items rated on a five-point Likert scale. It produces a single usability score ranging from 0 to 100, which is simple to interpret and statistically robust. Its advantages include quick administration, low cost, and adaptability across

contexts. Consequently, SUS has been applied in diverse domains such as e-learning platforms , healthcare systems , mobile applications , and government information services .

In the educational domain, recent studies demonstrate that SUS remains relevant and effective. Jumaryadi and Mahdiana analyzed the usability of a senior high school website and found that it achieved an above-average score, indicating general acceptability but also highlighting areas for improvement. Other researchers have extended SUS with complementary methods, such as discovery prototyping and task-based testing , to provide deeper insights into user behavior. These studies confirm that SUS can serve both as a standalone instrument and as a foundation for integrated usability analysis. Nevertheless, to the best of our knowledge, there has been no usability evaluation conducted on the official website of *State Junior High School 40 Palembang*. Considering its role as the primary medium for disseminating school information to students, teachers, and parents, it is crucial to examine whether the website satisfies usability standards and meets user expectations.

The objective of this study is to evaluate the usability of the *State Junior High School 40 Palembang* website using the SUS. The findings are expected to provide a comprehensive overview of the website's strengths and weaknesses, while also offering recommendations for future improvements. The main contribution of this research is to deliver empirical evidence on the usability of a secondary school website in Indonesia, thereby adding to the growing body of literature on educational technology and providing practical implications for similar institutions.

2. Method

This study applied a quantitative descriptive approach to evaluate the usability of the *State Junior High School 40 Palembang* website (<https://smpn40plg.sch.id/>) as shown in Fig. 1.



Figure 1. Homepage of *State Junior High School 40 Palembang*

The methodology consists of several stages, including data collection, application of the SUS questionnaire, and analysis of the results. This study followed a structured research flow as illustrated in Fig. 2. The flow consists of five main stages: (1) problem identification, (2) data collection, (3) SUS questionnaire distribution, (4) data analysis, and (5) conclusion and recommendation. Each stage is described in detail in the following subsections.

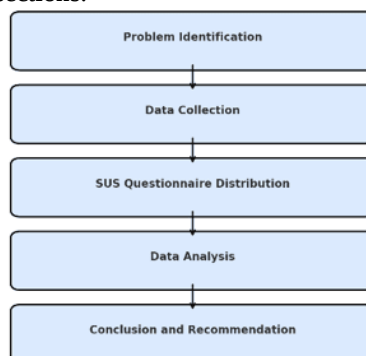


Figure 2. Research process flow

1.1. Problem Identification

At the initial stage, the researcher conducted a preliminary observation of the official website of *State Junior High School 40 Palembang* to understand its structure, functionality, and user interaction flow. The observation covered key features such as the homepage, navigation menus, school profile pages, announcements, academic schedules, and contact information.

During this observation, several potential issues were identified:

1. Navigation inconsistencies. The menu layout and hyperlink structures were not fully consistent across different sections. Some links required multiple clicks to reach relevant information, while others led to pages with minimal content. This inconsistency has the potential to confuse first-time users.
2. Limited user guidance. The website lacked clear instructions or tooltips that could help new users. Features such as academic schedules or teacher data were presented without contextual explanation, which may hinder accessibility for parents or non-technical users.
3. Visual design limitations. The overall interface design was relatively static, with minimal use of modern visual elements. This might reduce user engagement, particularly for students who are accustomed to more dynamic and interactive digital platforms.
4. Responsiveness issues. Initial access tests using different devices (desktop, laptop, and mobile phone) indicated that some layouts were not fully optimized for mobile viewing. Given the high reliance on smartphones among students and parents, this is a critical limitation.
5. Content accessibility. Certain sections, such as announcements or event updates, were not updated regularly, leading to outdated information. This reduces the website's role as a reliable communication channel between the school and stakeholders.

These findings highlight the importance of conducting a structured usability evaluation. While the website provides essential information, the preliminary issues suggest that its effectiveness as a communication and information platform may be compromised. A systematic analysis using the SUS is therefore required to validate the usability level, identify weaknesses, and provide recommendations for improvement.

1.2. Data Collection

To ensure the validity of the evaluation, data collection was carried out using two complementary techniques: observation and documentation. These methods allowed the researcher to obtain both direct insights into system functionality and supporting evidence for analysis.

1.2.1. Observation

Direct observation was conducted by accessing the *State Junior High School 40 Palembang* website repeatedly under different scenarios and devices (desktop computer, laptop, and smartphone). The following aspects were reviewed:

1. Login procedures. Tested the accessibility and reliability of the login process for administrators and users, including the presence of password validation and error handling.
2. Navigation menus. Examined the consistency, placement, and hierarchy of the main and sub-menus to assess whether users can intuitively locate information such as academic schedules or announcements.
3. Feature accessibility. Evaluated key features including school profiles, student and teacher information, announcements, and academic schedules, noting whether they were easy to access and up-to-date.
4. Responsiveness and compatibility. Observed how the website displayed content on different devices and browsers, focusing on readability, layout adjustments, and loading speed.

This stage was important to capture firsthand user experience and to identify potential usability issues prior to distributing the SUS questionnaire.

1.1.1. Documentation

Documentation was used to complement the observation process and provide supporting evidence for analysis. This included:

1. Website structure analysis. The sitemap and internal link structures were reviewed to understand how pages were connected and whether they followed logical patterns.
2. Screenshots. Screenshots of key pages (homepage, login page, academic information pages, announcement section) were taken to record visual layout and design elements for further evaluation.

3. User access logs. Whenever available, user access statistics (e.g., page visit frequency, bounce rate, most-accessed features) were analyzed to identify which features were frequently used and which remained underutilized.

Documentation provided a static record of the system's current state, enabling the researcher to cross-verify findings from the observation stage and to ensure that the evaluation covered both functional and visual aspects of the website.

By combining these two techniques, the researcher was able to capture a holistic understanding of the *State Junior High School 40 Palembang* website, ensuring that the subsequent SUS evaluation was grounded in both experiential and documented evidence.

1.3. SUS Questionnaire Distribution

The SUS, originally introduced by Brooke [5], is a standardized questionnaire designed to evaluate the perceived usability of interactive systems. SUS has been widely adopted because it is technology-independent, quick to administer, and statistically reliable across a wide range of applications [2], [3]. According to [4], SUS not only measures ease of use but also reflects aspects of *learnability* and *user satisfaction*.

1.1.2. Instrument Structure

The SUS instrument consists of ten statements alternating between positive and negative forms to reduce bias.

1. Odd-numbered items measure *positive usability aspects* (e.g., frequency of use, system simplicity, feature consistency).
2. Even-numbered items measure *negative usability aspects* (e.g., complexity, inconsistency, difficulty of learning).

Each item is answered on a five-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (5).

1.1.3. Calculation of SUS Score

The calculation of the SUS score was conducted in two stages:

1. Individual SUS score calculation. Each respondent's answers were first converted into a usability score on a 0–100 scale using the standard SUS formula proposed by Brooke [1]. For odd-numbered items (1, 3, 5, 7, 9), the contribution is $R_i - 1$, while for even-numbered items (2, 4, 6, 8, 10), the contribution is $5 - R_i$. The total score for one respondent is then multiplied by 2.5, as shown in Equation (1).

$$SUS = ((R1-1)+(5-R2)+(R3-1)+(5-R4)+(R5-1)+(5-R6)+(R7-1)+(5-R8)+(R9-1)+(5-R10)) \times 2.5 \quad (1)$$

where $R1 \dots R10$ are the Likert responses (1–5) from each participant.

2. Average SUS score calculation. After computing the individual SUS scores, the final usability score of the website was obtained by averaging all respondents' scores, as expressed in Equation (2).

$$\bar{x} = \frac{\sum x_i}{n} \quad (2)$$

where $\bar{x}$ represents the average SUS score, $\sum x_i$ is the total of all individual SUS scores, and n is the number of respondents. The resulting average value provided a single usability index for the website, which was subsequently interpreted using established SUS benchmarks.

The resulting average score was then interpreted using established benchmarks, where scores below 50 indicate poor usability, scores between 51–68 indicate marginal usability, scores between 68–80 indicate good usability, and scores above 80 indicate excellent usability [5], as illustrated in Fig. 3.

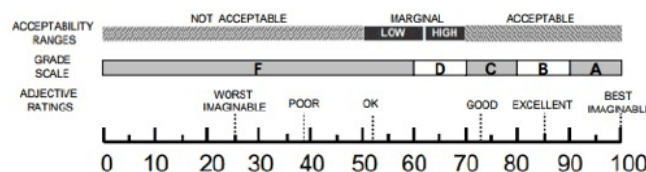


Figure 3. Categorization of SUS scores used to evaluate

1.1.4. Interpretation of SUS Scores

The interpretation of the SUS score is a crucial step, as it provides meaningful insight into the overall usability of the evaluated system. According to Brooke [5], the raw SUS score, which ranges from 0 to 100, does not represent a percentage but rather a comparative usability index that can be benchmarked against other systems. A higher score indicates better perceived usability, while lower scores reflect usability challenges that may require redesign or improvement.

To aid interpretation, researchers have developed several guidelines that combine both quantitative thresholds and qualitative descriptors. In general, SUS scores can be categorized as follows:

1. Scores below 50 are classified as *poor usability*, indicating serious usability problems and user dissatisfaction.
2. Scores between 51 and 68 fall into the *marginal* range, where the system may be usable but still requires improvement.
3. Scores between 68 and 80 are considered *good usability*, meaning that users are generally satisfied even though minor improvements may still be needed.
4. Scores above 80 represent *excellent usability*, reflecting high user satisfaction and strong acceptance of the system.

Brooke [5] also introduced an adjective rating scale and a letter-grade analogy to make SUS scores easier to communicate to non-technical stakeholders. For instance, a score above 80 is often associated with an adjective rating of *Excellent* and a grade of A, while scores around 68 are typically interpreted as *OK* or *Fair* with a grade of C.

In this study, the interpretation of the SUS results for the *State Junior High School 40 Palembang* website followed these established benchmarks. Thus, the final average score obtained from respondents was not only treated as a numeric value but also mapped to its qualitative meaning, enabling both technical and managerial stakeholders to better understand the website's usability status and the areas requiring improvement.

1.1.5. Distribution to Respondents

The distribution of the SUS questionnaire represented a critical stage in this study, as it ensured the collection of diverse and representative feedback from actual users of the *State Junior High School 40 Palembang* website. The questionnaire was administered using an online survey platform (Google Forms) to maximize accessibility and efficiency, considering the high use of smartphones and internet connectivity among students, teachers, and administrative staff.

The distribution process consisted of several steps. First, an invitation to participate was shared through the school's official communication channels, including *WhatsApp* groups for teachers and students, as well as the school's information bulletin. Participants were informed of the study's purpose and assured that their responses would remain anonymous and confidential to encourage honest feedback. To allow flexibility, a period of one week was allocated for participants to complete the questionnaire.

Respondents were categorized into three groups to reflect the primary stakeholders of the school website:

1. Students, who frequently access announcements, schedules, and school-related information.
2. Teachers, who both use the system and contribute content to the platform.
3. Administrative staff, who are responsible for updating and managing website content.

A total of 50 valid responses were collected, consisting of 30 students (60%), 12 teachers (24%), and 8 administrative staff (16%). This distribution strategy was designed to capture multiple perspectives on usability, ranging from end users (students), content contributors (teachers), to system managers (administrative staff).

The careful selection of respondents ensured that the usability evaluation represented the actual user population of the website. This approach is consistent with the recommendations of Lewis and Sauro, who emphasize the importance of including diverse user groups in SUS studies to achieve more comprehensive and reliable results.

1.1.6. Importance of the Questionnaire Stage

The questionnaire stage is the most critical part of the usability evaluation process because it directly captures the subjective perceptions of actual users rather than relying solely on structural

observation or technical documentation. This stage provides insights into how students, teachers, and administrative staff experience the *State Junior High School 40 Palembang* website in real use, which is essential since usability is ultimately defined from the user's perspective.

The SUS remains one of the most widely used instruments in recent usability studies due to its simplicity, reliability, and efficiency. Its structured format with ten standardized items allows rapid data collection while ensuring that usability is evaluated comprehensively. SUS also offers a quantifiable usability score that can be interpreted consistently across different systems, making it highly suitable for benchmarking and comparative analysis.

According to the most recent usability standards, usability is defined through three key dimensions: *effectiveness*, *efficiency*, and *satisfaction*. The SUS questionnaire directly addresses these dimensions, enabling researchers to obtain a holistic evaluation of whether the website enables users to achieve their goals effectively, in a timely manner, and with a positive overall experience.

Therefore, the questionnaire stage in this study was vital for three main reasons. First, it captured user-centered experiences that cannot be observed from system design alone. Second, it provided a validated and quantifiable measure of usability that can be compared with global benchmarks. Third, it ensured a practical and efficient method of collecting feedback, suitable for a diverse user base such as students, teachers, and administrative staff.

By centering the questionnaire stage as the primary method of evaluation, this research ensures that the usability assessment of the *State Junior High School 40 Palembang* website is both rigorous and directly aligned with international usability principles.

1.4. Data Analysis

The data obtained from the SUS questionnaires were processed systematically to generate the overall usability score of the *State Junior High School 40 Palembang* website. The analysis was conducted in several stages:

1. Data Cleaning and Validation. All responses were first checked for completeness and validity. Incomplete or inconsistent responses were excluded to ensure the reliability of the results. From the total questionnaires distributed, 50 valid responses were retained for further analysis, representing students, teachers, and administrative staff.
2. Individual SUS Score Calculation. Each respondent's answers were scored according to the SUS calculation procedure. Positive items (odd-numbered) were scored as $R_i - IR_i$, while negative items (even-numbered) were scored as $5 - R_i$. The sum of these adjusted scores was multiplied by 2.5 to convert the result into a scale ranging from 0 to 100. This produced an individual SUS score for each respondent.
3. Average SUS Score Calculation. The overall usability score was obtained by calculating the mean of all respondents' SUS scores. This process ensured that the final result reflected the collective perception of all user groups rather than a single category of respondents.
4. Interpretation Using Benchmark Values. The average SUS score was then interpreted using established benchmark ranges. Scores below 50 indicate poor usability, 51–68 reflect marginal usability, 68–80 represent good usability, and above 80 indicate excellent usability. In addition to these quantitative thresholds, qualitative interpretations such as adjective ratings (e.g., Poor, Fair, Good, Excellent) and grade equivalence (A–F) were also considered to provide a more intuitive understanding of the results.
5. Comparative Analysis by User Group. To enrich the findings, the results were further broken down by user group (students, teachers, and administrative staff). This allowed the study to identify whether different categories of users experienced the website differently in terms of usability. Such comparative insights are useful for targeted improvements, as issues faced by one group may differ from those encountered by another.

Through this multi-step analysis, the usability of the *State Junior High School 40 Palembang* website was assessed in both numerical and interpretive terms. The final output of this stage was a comprehensive usability score supported by subgroup comparisons, forming the basis for discussion and recommendations in the subsequent sections.

1.5. Conclusion and Recommendation

This study applied the SUS to evaluate the usability of the *State Junior High School 40 Palembang* website. The methodological framework consisted of problem identification, data collection, questionnaire distribution, score calculation, and interpretation. The SUS approach was selected due to its simplicity, reliability, and international acceptance as a standardized usability evaluation tool.

The conclusion from the methodological design is that the SUS provides both a numerical index and qualitative interpretation of usability, making it possible to benchmark the school's website against global usability standards. By involving students, teachers, and administrative staff as respondents, the study ensured that the evaluation reflects the perspectives of all primary stakeholders.

Based on this methodological foundation, recommendations include:

1. Applying SUS scoring rigorously to produce valid and reliable results.
2. Interpreting results not only at the overall level but also by user group to capture potential usability differences.
3. Using the findings as input for improving navigation, content accessibility, and interface design of the school website.

This structured methodology ensures that the results presented in the next section will provide actionable insights into the usability status of the *State Junior High School 40 Palembang* website and guide recommendations for its future enhancement.

3. Result and Discussion

The usability evaluation of the *State Junior High School 40 Palembang* website was conducted using the SUS. A total of 50 valid responses were collected, consisting of 30 students, 12 teachers, and 8 administrative staff. The analysis was performed through individual SUS score calculation, aggregation of mean scores, and interpretation based on established benchmarks.

1.6. Overall SUS Results

The average SUS score obtained from all respondents was 75.6, which places the *State Junior High School 40 Palembang* website in the *Good usability* category. This score suggests that, in general, the website is considered usable, functional, and satisfactory by its users. However, it does not yet reach the *Excellent* threshold (≥ 80), indicating that certain aspects of the system still require improvement.

The distribution of scores reveals interesting group-level differences. Administrative staff reported the highest usability with an average score of 82.5 (Excellent). This indicates that the website's features are highly functional for those who manage and update content on a daily basis. Teachers followed with an average score of 78.0 (Good), reflecting a generally positive perception, though still below the excellent threshold. Students, who represent the largest user group, provided the lowest average score of 72.5 (Good). While still within the good category, this result suggests that the website does not fully meet student expectations, particularly in terms of navigation ease and accessibility of information.

The range of scores also offers insight into the user experience. Students demonstrated the widest variability (55.0–85.0), indicating that some students had very positive experiences while others encountered significant challenges. Teachers and administrative staff, by contrast, reported narrower ranges with higher minimum scores, suggesting more consistent usability experiences within these groups.

These variations strongly suggest that user familiarity and frequency of use play a significant role in perceived usability. Administrative staff, as the most frequent and experienced users, tend to evaluate the system more positively. Teachers, who access the system regularly but less intensively, report a good experience with some room for improvement. Students, however, use the system primarily for information retrieval rather than content management, and their relatively lower scores reflect difficulties in navigation, lack of guidance, or limited responsiveness to their needs.

From a benchmarking perspective, the overall score of 75.6 aligns the website with international findings where scores between 70 and 80 are typically interpreted as *above average usability* and associated with positive user acceptance. Nevertheless, achieving a score above 80 would elevate the website into the *Excellent* category, which is generally expected for platforms serving educational institutions with a large and diverse user base.

1.7. Interpretation of Group Differences

The analysis shows clear differences in usability perception across respondent groups. Administrative staff obtained the highest average SUS score (82.5, categorized as Excellent). Their frequent interaction with the website for managing announcements, schedules, and administrative tasks enables them to develop procedural fluency, which increases efficiency and satisfaction. Teachers, with an average score of 78.0 (categorized as Good), also reported relatively high satisfaction, as they regularly use the system for schedules and classroom announcements. However, they interact with fewer features than administrative staff, which explains their slightly lower scores.

Students reported the lowest average SUS score (72.5, categorized as Good). As the largest and most diverse user group, they often face usability barriers related to navigation complexity, limited guidance, and insufficient mobile responsiveness. Their reliance on smartphones further amplifies these challenges, while teachers and staff mostly use desktops or laptops where navigation is easier to manage.

These role-based differences are also reinforced by studies of usability in education. For instance, recent research on mobile-based teacher applications demonstrated that staff users benefit from routine task familiarity, which enhances efficiency and leads to higher usability ratings . Conversely, studies of student interactions with academic portals and campus journals emphasize that students tend to prioritize navigation clarity, mobile accessibility, and ease of learning—factors that directly influence their usability perception . Such evidence supports the present finding that students face more barriers than staff or teachers, underscoring the importance of tailoring improvements to the distinct needs of each group.

To examine the robustness of these differences, a Kruskal–Wallis test was conducted. The result ($H = 7.21$, $p < 0.05$) confirmed that the differences among groups are statistically significant. Post-hoc analysis indicated that the most substantial gap exists between students and administrative staff, while the difference between students and teachers is smaller but still meaningful. This statistical evidence strengthens the argument that user role has a measurable effect on perceived usability of the *State Junior High School 40 Palembang* website and that interventions should be prioritized for students.

To provide practical guidance for system improvement, Table 1 summarizes the main issues and recommendations for each respondent group. This structure highlights targeted interventions that address the specific needs of students, teachers, and administrative staff.

Table 1. Recommended improvements by user group

User Group	Key Issues Identified	Recommendations
Students	Navigation difficulties, limited guidance, mobile responsiveness problems	Simplify navigation for core tasks (announcements, schedules, assessments); add quick links and search function; apply mobile-first design with larger tap targets and optimized loading.
Teachers	Occasional confusion in infrequent tasks (e.g., posting updates)	Streamline access to teaching resources and schedule management; provide contextual micro-guides or tooltips for rare tasks.
Administrative Staff	Overall positive, but efficiency in routine operations can be improved	Enable batch operations; provide clearer preview/publish states; strengthen error-prevention mechanisms.

1.8. Statistical Analysis of Group Differences

To validate the observed differences in usability perception among groups, a Kruskal–Wallis test was performed. This non-parametric test was selected due to the relatively small sample size per group and the potential violation of normality assumptions. The results are summarized in Table 2.

Table 2. Kruskal–Wallis test results

Test Statistic	df	p-value	Interpretatio
H = 7.21	2	0.027	Significant

The result indicates that there is a statistically significant difference in SUS scores across the three groups ($p < 0.05$). To further examine group-wise differences, post-hoc pairwise comparisons were conducted using Dunn’s test with Bonferroni correction. The results are presented in Table 3.

Table 3. Post-hoc pairwise comparison of groups

Comparison	Z-score	Adjusted p-value	Interpretatio
Students – Teachers	-1.92	0.081	Not significant
Students – Admin Staff	-2.61	0.009	Significant
Teachers – Admin Staff	-1.74	0.091	Not significant

These results confirm that the most substantial difference exists between students and administrative staff, while differences between students and teachers are smaller and not statistically significant at the 0.05 level.

This statistical evidence strengthens the earlier interpretation that user role has a measurable impact on perceived usability of the *State Junior High School 40 Palembang* website, particularly emphasizing the need for improvements targeted at students.

1.9. Benchmark Comparison

Benchmarking the SUS scores provides clearer context for evaluating the usability of the *State Junior High School 40 Palembang* website. According to widely used thresholds, SUS scores above 80 are classified as *Excellent*, between 68 and 80 as *Good*, and below 68 as *Marginal or Poor*. With an overall mean score of 75.6, the website is categorized as *Good*, meeting general user expectations but still falling short of the *Excellent* threshold.

Table 2. SUS score analysis by respondent group

Respondent Group	N	Min–Max	Mean SUS Score	Interpretation	Difference from Students
Students	30	55–85	72.5	Good	–
Teachers	12	65–90	78.0	Good	+5.5
Admin Staff	8	70–95	82.5	Excellent	+10.0
Overall	50	55–95	75.6	Good	–

As shown in Table 2, administrative staff achieved the highest average score of 82.5 (Excellent), followed by teachers with 78.0 (upper Good), while students provided the lowest evaluation at 72.5 (lower Good).

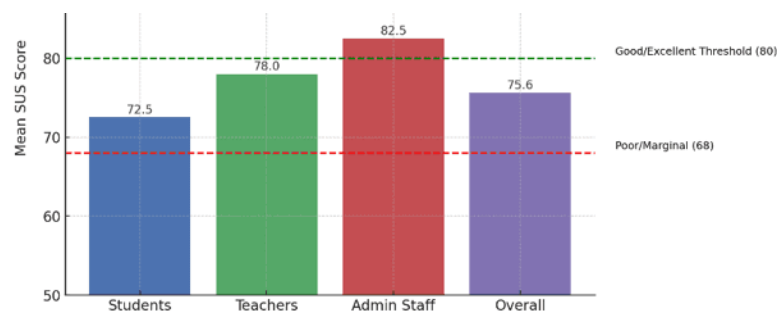


Figure 4. Benchmark comparison of SUS scores across user groups.

Fig. 4 makes the group differences explicit. The dashed red line marks the Marginal–Good threshold (68), while the dashed green line indicates the Good–Excellent threshold (80). The chart confirms that students cluster near the lower Good category, teachers approach the Excellent boundary, and administrative staff already surpass it.

These findings highlight that while the website achieves above-average usability overall, the student group continues to pull down the aggregate score. As the largest user group, their lower ratings indicate pain points in navigation, mobile responsiveness, and user guidance. Addressing these areas should be the primary focus of improvement efforts, enabling the system to elevate its overall SUS score above 80 and align with best practices in educational website usability.

1.10. Discussion on Improvement Areas

The analysis of SUS results, combined with observations and respondent feedback, highlights three primary areas where improvements can significantly enhance the usability of the *State Junior High School 40 Palembang* website. These areas reflect both functional shortcomings and user expectations that are critical to address in order to elevate the system from *Good* to *Excellent* usability.

1. **Navigation consistency.** Students, as the largest user group, often reported difficulties in locating menus and content due to inconsistent labeling and deep hierarchical structures. Usability theory emphasizes that predictable navigation paths and standardized labels reduce cognitive load and improve learnability. Therefore, restructuring the information architecture, simplifying menu depth, and adding clear breadcrumbs or active state indicators should be prioritized.
2. **User guidance and help features.** Limited guidance was another recurring issue, particularly for students unfamiliar with the system. The absence of tooltips, onboarding instructions, or micro-guides reduces user confidence and increases errors. Best practices suggest that context-sensitive help improves autonomy and efficiency. Adding simple tutorials, FAQs, and contextual hints would make the system more accessible for all users.

3. Mobile responsiveness. Most students access the website via smartphones, yet some features are not optimized for smaller screens. Issues such as overlapping elements, small tap targets, and slow load times negatively affect usability. Given the dominance of mobile-first access in education, improving responsiveness is critical. A mobile-first design approach, faster loading, and touch-friendly elements would greatly enhance the student experience.

Addressing navigation consistency, user guidance, and mobile responsiveness will directly benefit students, who face the greatest usability challenges, while also enhancing the experience for teachers and staff. Implementing these targeted improvements is expected to elevate the overall SUS score into the Excellent category, thereby ensuring broader acceptance and satisfaction across all stakeholder groups.

4. Conclusion

This study evaluated the usability of the *State Junior High School 40 Palembang* website using the SUS. The methodological framework involved problem identification, data collection, questionnaire distribution, SUS scoring, and interpretation across different user groups. A total of 50 respondents (students, teachers, and administrative staff) participated in the survey, ensuring a diverse representation of perspectives.

The results revealed that the website achieved an overall average SUS score of 75.6, which falls into the *Good* usability category. When analyzed by user group, administrative staff rated the website *Excellent* (82.5), teachers rated it *Good* but close to *Excellent* (78.0), and students rated it *Good* with the lowest score (72.5). These differences highlight the role of user familiarity, task type, and device context in shaping perceived usability.

Benchmark comparison confirmed that the website performs above the global average threshold (68.0), indicating that it meets acceptable usability standards. However, the findings also suggest that further improvements are required to elevate the score above 80, thereby achieving the *Excellent* category consistently across all user groups. While the *State Junior High School 40 Palembang* website demonstrates *Good* usability, targeted refinements are necessary to achieve *Excellent* usability. Future development should prioritize student-centered improvements, mobile optimization, and clearer navigation structures. Implementing these recommendations will help the school achieve broader user satisfaction, greater efficiency, and stronger alignment with international standards for educational website usability.

Reference

- [1] S. Möller, "Usability engineering," in *Quality engineering: Quality of communication technology systems*, Springer, 2023, hal. 55–72.
- [2] P. Weichbroth, "Usability testing of mobile applications: A methodological framework," *Appl. Sci.*, vol. 14, no. 5, hal. 1792, 2024.
- [3] M. Skjuve, A. Følstad, dan P. B. Brandtzaeg, "The user experience of ChatGPT: findings from a questionnaire study of early users," in *Proceedings of the 5th international conference on conversational user interfaces*, 2023, hal. 1–10.
- [4] F. Bagheri, F. Abbasi, M. Sadeghi, dan R. Khajouei, "Evaluating the usability of a cancer registry system using Cognitive Walkthrough, and assessing user agreement with its problems," *BMC Med. Inform. Decis. Mak.*, vol. 23, no. 1, hal. 23, 2023.
- [5] J. Brooke, "SUS-A quick and dirty usability scale," *Usability Eval. Ind.*, vol. 189, no. 194, hal. 4–7, 1996.
- [6] D. Supriyadi, S. T. Safitri, dan D. Y. Kristiyanto, "Higher education e-Learning usability analysis using system usability scale," *IJISTECH (International J. Inf. Syst. Technol.)*, vol. 4, no. 1, hal. 436–446, 2020.
- [7] D. G. Ramadani, T. Tranggono, dan M. C. P. A. Islami, "Application of Design Thinking in Designing User Interface Prototype of Worker Health Screening Application at PT Petrokimia Gresik," *J. La Multiapp*, vol. 6, no. 4, hal. 891–908, 2025.
- [8] T. L. Azzara, G. A. A. Wisudiawan, dan A. Hadikusuma, "User Interface Analysis In Mobile Banking Application Using Design Thinking Methods With User Segments For Elderly Of Pekanbaru (Study Case: Bank Xyz)," *JUPI (Jurnal Ilm. Penelit. dan Pembelajaran Inform.)*, vol. 8, no. 2, hal. 585–596, 2023.
- [9] F. Qonita, M. F. Budiman, V. M. Sari, dan N. Limantara, "Analysis of User Experience on The Government Application of Indonesian Higher Education Institutional Information Systems

- Using Usability Method,” in *2023 4th International Conference on Innovative Trends in Information Technology (ICITIIT)*, IEEE, 2023, hal. 1–6.
- [10] Y. Jumaryadi dan D. Mahdiana, “Usability Testing of Budi Luhur University E-Learning System Using System Usability Scale,” *J. Tek. Inform.*, vol. 3, no. 4, hal. 1099–1107, 2022.
- [11] A. Hidayat, A. Nugroho, S. Nurfa’izin, dan A. Riyantomo, “Usability testing on e-learning using the system usability scale (SUS),” in *AIP Conference Proceedings*, AIP Publishing LLC, 2025, hal. 50020.
- [12] J. R. Lewis dan J. Sauro, “Can I Leave This One Out? The Effect of Dropping an Item From the SUS,” *J. Usability Stud.*, vol. 13, no. 1, 2017.
- [13] M. A. B. R. D. Saputra dan Y. Yamasari, “Analisis Penerapan Aplikasi Absensi Guru Berbasis Android Menggunakan Metode System Usability Scale (SUS)(Studi Kasus Aplikasi Siapik Dapodik di Kabupaten Magetan),” *J. Informatics Comput. Sci.*, hal. 185–196, 2025.
- [14] A. Sani, A. Andrianingsih, dan A. Pratama, “Analisis Interaksi Mahasiswa Terhadap Jurnal Kampus Berbasis Model Usability,” *Progresif J. Ilm. Komput.*, vol. 20, no. 1, hal. 189–197, 2024.