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Enhancing Usability of the Qualitiva Educational Applications: A Mixed-Methods Study using SUS and Heuristic Evaluation

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Abstract

This study evaluates the usability of the Qualitiva application using the System Usability Scale (SUS) and Heuristic Evaluation (HE) methods. Conducted at SMA Negeri 22 Palembang, the research aims to identify the application's strengths and weaknesses to provide targeted recommendations for improvement. A mixed-methods approach was used, combining quantitative data from SUS questionnaires administered to 100 users (teachers and students) and qualitative insights from heuristic evaluations. The SUS results revealed an average score of 69.00 (Grade C), indicating moderate user acceptance but highlighting areas for improvement in application speed, interface design, data security, and system efficiency. The HE, performed by only two usability experts, uncovered critical usability issues such as inadequate system feedback, non-intuitive terminology, limited user control, and poor error prevention. Despite the limitation in the number of heuristic evaluators, this study contributes to the growing body of usability research in Indonesia, particularly within the context of digital educational platforms. The findings offer actionable insights to enhance user experience and promote the effective adoption of educational technology.

Keywords: Application evaluation, heuristic evaluation, usability, system usability scale, Qualitiva

INTRODUCTION

In the digital era, education increasingly requires the integration of information and communication technology (ICT) in teaching and learning activities (Siringoringo and Alfaridzi 2024). The Indonesian government continues to drive the improvement of educational quality through various ICT-based initiatives aimed at enhancing the efficiency and effectiveness of learning (Budiarto *et al.,* 2024). In addition to utilizing ICT as learning, schools can also utilize the Qualitiva application. The Qualitiva application is an educational technology application designed to facilitate the management of educational data and support the teaching and learning process. According to Ristianti *et al.,* (2021) one of the strategies and efforts made by school principals to improve teachers' ICT competence is to encourage them to utilize applications in learning, such as using Qualitiva to create questions, compile materials, manage attendance, and create learning videos. In fact, the Qualitiva application can be used as online learning for schools, teachers, and students which makes work easier and more effective (Setiawan 2019).

The challenges faced in the implementation of digital educational applications differ from those encountered in traditional methods. One of the main issues is the lack of user awareness regarding the importance of usability in the systems they use. Some users may be accustomed to manually managing academic data and feel reluctant to switch to a more comprehensive digital system (Jasmi *et al.,* 2024). Furthermore, organizational culture within educational institutions also plays a significant role, where resistance to technological change often becomes the main barrier to the adoption of ICT-based applications (Hodas 1993). Therefore, more effective socialization and training strategies are needed to ensure that the Qualitiva application can be implemented well and widely accepted by users.

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A study by Alenezi (2017) highlights that teachers' psychological resistance to digital innovations can be influenced by the culture and climate of the school, as well as teachers' attitudes toward educational technology. This research emphasizes the importance of understanding the factors that influence this resistance to develop effective implementation strategies. Moreover, research by (Pynoo *et al.,* 2011) identifies that a lack of awareness of the benefits and importance of usability in digital systems can hinder technology adoption by users accustomed to manual methods. Therefore, a comprehensive approach to socialization and training is required to increase users' awareness and skills in effectively utilizing digital systems. By understanding and addressing these factors through appropriate socialization and training strategies, the implementation of applications like Qualitiva can become more effective and widely accepted by users in the educational environment.

In addition to usability factors, data security is also a crucial concern in the use of digital educational applications (Qommaddin and Sallu 2020). Applications that lack strong security systems are at risk of personal data breaches, such as academic information and personal data of students and teachers (Wahyudi and Sugiyono 2024). Cybersecurity in education has become increasingly critical, given the numerous cyberattacks targeting educational information systems. Therefore, this research also considers security aspects in the recommendations for improving Qualitiva to ensure users feel more secure and protected while using the application (Budhy and Hendra 2021).

Cyberattacks have a significant impact on educational institutions, including financial losses due to system recovery costs and the risk of losing important data. Disruptions to the learning and administrative processes due to these attacks can also threaten the stability and reputation of educational institutions. Therefore, implementing a robust security system, such as data encryption and digital signatures, is necessary to protect academic information and the personal data of students and educators. Additionally, access monitoring and increasing awareness of digital security through education and training are important steps in reducing the risk of data breaches (Saputra 2023).

Improving digital security literacy among students and educational staff is also necessary to help them understand how to protect personal information, avoid cyber threats such as phishing or malware, and practice good ethics in technology usage. By increasing awareness and applying proper cybersecurity practices, the potential for attacks can be minimized, thus creating a safer and more trustworthy digital learning environment (Rahman 2024).

Qualitiva, as one of the digital educational platforms, needs to consider security aspects in its development. By integrating data protection measures, such as stricter authentication systems, more secure encryption, and tighter access control, this application can enhance the protection of user information (Nuriyani 2022). As a result, users can feel safer and more comfortable using this application for academic purposes without worrying about cyber threats that could harm them.

The effectiveness of implementing the Qualitiva application heavily depends on its ability to accommodate the diverse needs of users. Each school and educational institution has different characteristics and needs, so flexibility in the use of the application is a key factor in determining its success. Systems that are too rigid or cannot be adapted to the specific needs of an educational institution can reduce the effectiveness of their use (Patria and Juliansyah 2025; Siringoringo and Alfaridzi 2024). Therefore, it is important for Qualitiva to offer customizable features that cater to the needs of individual users to optimize the user experience.

Usability evaluation is critical in identifying how well an application meets the needs of its users, such as teachers and students. For this purpose, the System Usability Scale (SUS) and Heuristic Evaluation (HE) methods were chosen because they provide comprehensive quantitative and qualitative analysis. SUS offers a systematic and standardized approach to assess the ease of use, producing quantitative data that can be compared with similar applications (Brooke 2020). On the other hand, HE enables in-depth identification of usability issues, such as navigation and interface consistency, through expert evaluations (Ginting *et al.,*

2021). The combination of these two methods ensures that usability aspects are assessed holistically, covering various challenges faced by users in the educational context (Sriyeni 2022).

Previous research has shown that educational applications often face similar challenges regarding ease of use and feature complexity, which can hinder their effectiveness (Purnamasari *et al.,* 2021). Zaki *et al.,* (2023) reinforce this statement, stating that SMKN 1 Palembang has provided the Qualitiva application in the form of e-learning, which is equipped with fairly standardised procedures. However, the school has not maximised the potential of this service to support the learning process. Utilising the Qualitiva application via the website with the usability method will make it easier to learn, understand, and trace because users find the quality of service, information, and interaction appealing. The Qualitiva application can also be compared with the HE method (Amanatullah and Sutabri 2023). HE is a method used to assess the usability of software by identifying interface design issues. It measures the comfort level of interaction between users and computer systems and can identify deficiencies in the domain system (Waladow *et al.,* 2024). Combining both methods ensures that the evaluation encompasses both user and expert perspectives, leading to more holistic improvement recommendations (Sauro and Lewis 2012).

This research offers a deeper utilization of two methods, System Usability Scale (SUS) and Heuristic Evaluation (HE), to evaluate the usability of educational applications, providing a more comprehensive understanding of the user experience. The SUS method offers a quantitative perspective based on user perceptions, while HE provides in-depth analysis of the application's design and navigation. The combination of both methods results in a more holistic evaluation compared to previous studies that only used one method.

The focus of this research is the Qualitiva application, a digital education platform used to manage academic and learning data. Although it has been widely implemented, evaluations of the usability and effectiveness of this application are still limited. This research provides empirical data on how well this application meets user needs and offers recommendations for its improvement. Furthermore, this study also identifies factors that influence technology acceptance in educational environments and considers data security aspects, which are particularly relevant given the risk of personal information breaches. The results are expected to contribute to the development of more user-friendly, effective, and secure educational applications in Indonesia.

Based on the background, this study aims to analyze the usability of the Qualitiva application using the SUS and HE methods. The objectives of this study are to assess the usability level of the Qualitiva application through a quantitative approach using SUS, identify usability issues based on heuristic evaluation, and provide recommendations for improvement to enhance the user experience. The working hypothesis of this study is that the Qualitiva application still requires improvements in usability, with major issues in application speed, visual design, data security, and system efficiency. By understanding these obstacles, this study is expected to contribute to improving the effectiveness of Qualitiva as a learning tool that aligns with the needs and expectations of users in educational environments, whether in Senior High Schools or Vocational High Schools.

METHOD

This study uses a mixed-methods approach, both quantitative and qualitative, with two usability evaluation techniques: System Usability Scale (SUS) and Heuristic Evaluation (HE) (Creswell 2014; Sugiyono 2014; Yin 2011). Data were collected through SUS questionnaires distributed to 100 respondents, as well as heuristic evaluations conducted by two usability experts. The SUS results were scored on a scale from 0 to 100, while the HE identified usability weaknesses through analysis based on Nielsen's 10 heuristics. To determine the respondents, the researchers targeted teachers, students, and school operators located at Senior High School 22 Palembang. The research design was carried out in several stages to achieve the expected

results, including identifying usability issues, conducting a literature review, selecting evaluation methods, collecting data, analyzing results, and formulating conclusions and improvement recommendations (Figure 1).

The SUS testing uses 10 statements with a Likert scale of 1–5, where the final score is calculated using a specific formula to determine the usability level of the application. The result interpretations are categorized into five levels: Grade A (≥80.3) indicates excellent usability, while Grade E (<51) indicates significant problems that require urgent improvement. Meanwhile, HE is conducted by identifying violations against Nielsen's heuristics, such as system status visibility, error prevention, and minimalist design. Each issue is categorized based on its severity on a scale of 0–4 to determine how urgent the improvement is.

The research results are analyzed by combining quantitative data from the SUS and qualitative findings from the HE to provide a comprehensive overview of the usability of the Qualitiva application. The SUS score reflects users' perceptions of ease of use, while the HE reveals specific aspects that need improvement. The conclusions of the study provide recommendations for developers, such as interface enhancements, additional features, or improved accessibility. Moreover, this research can serve as a foundation for further usability evaluations or the development of similar educational applications in the future.

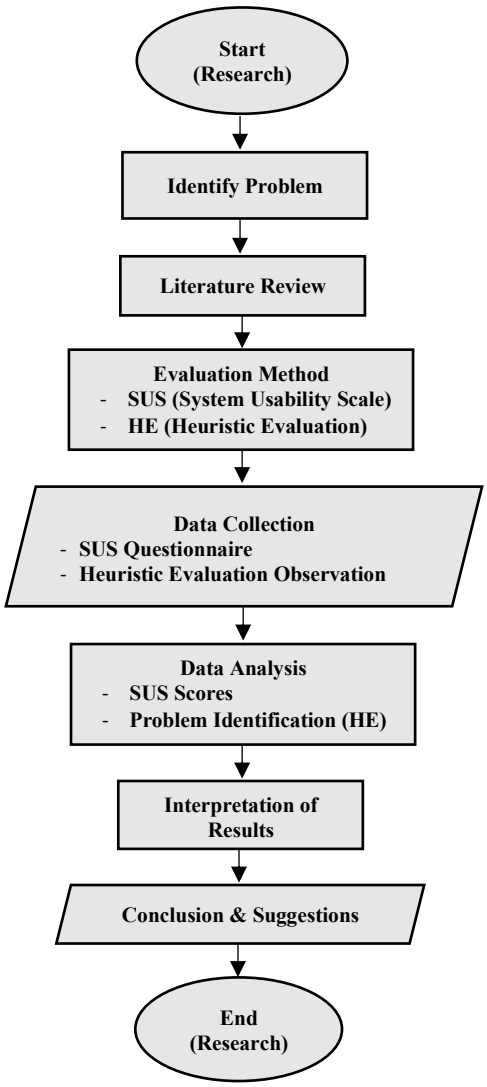

Figure 1 Research process

RESULTS AND DISCUSSION

Based on the results of the SUS questionnaire given to 100 respondents, the usability level of the Qualitiva application was calculated using a 1–5 scale for each question, and the respondents' characteristics were then converted into a SUS score. The technique used to select the 100 respondents was purposive sampling, involving 50 teachers and 50 students. The average overall SUS score is 69.00, which indicates that the usability level is in the "Marginal High" category with grade C. This suggests that while the Qualitiva application is generally accepted by users, it still requires improvements in several usability aspects, such as in statement Q7, which received the lowest average score of 3.07 for the speed of the Qualitiva application. Users reported that the application frequently encountered errors, was unresponsive, and had issues with its performance, which diminished usability for users.

In statements Q1 and Q6, the average scores were the same, 3.13, indicating that users felt confident in using the application. However, this perception still needs improvement through refinements in visual design and navigation. Regarding the visual design in statement Q6, there is a need for improvement in aesthetics, colors, and feature layout so that users feel the application's visual design can be made more attractive. In statement Q8, user comfort in using the application was relatively good, with an average score of 3.20. However, users still require additional features to help make the application's performance more efficient, which could further improve the comfort of using the application. For statement Q5, the average score was 3.24.

Users rated the ease of learning the application as relatively easy to learn, but new users still require documentation guides to help them easily learn the application. In statement Q2, with regard to user ease, users felt that optimizing the interface aspect could improve their experience, with an average score of 3.30. For statement Q9, regarding data security, users felt that the application needed better security for their personal data, with an average score of 3.40.

Statements Q4 and Q10 received relatively higher average scores from users, with 3.50 and 3.51, respectively, indicating that the efficiency aspect can be improved, particularly in reducing delays in student account activation, which decreases user efficiency during exams. For statement Q10, regarding the application's recommendation, users rated it as suitable for recommendation, but they still believed that certain aspects of the application need improvement. Regarding application reliability, statement Q3 received the highest score, with an average score of 3.70. This shows that users felt the application functioned according to their needs and was considered reliable in supporting educational needs. Overall, the Qualitiva application is reasonably well-received, but improvements are needed in aspects of speed, visual design, data security, and system efficiency to further optimize usability.

Below is the presentation of the System Usability Scale (SUS) testing instrument in Table 1. The instrument consists of 10 statements rated on a Likert scale from 1 to 5, where 1 indicates Strongly Disagree, 2 indicates Disagree, 3 indicates Neutral, 4 indicates Agree, and 5 indicates Strongly Agree.

Table 1 System Usability Scale (SUS) Instrument Statements

Questions	Statement	Likert Scale Rating
Q1	I found the system very easy to use.	1 – 5
Q2	I found the system to be inconsistent in its usage.	1 – 5
Q3	I thought the system was easy to learn.	1 – 5
Q4	I needed technical support to use this system.	1 – 5
Q5	I found the system's features to be well integrated.	1 – 5
Q6	I found the system unnecessarily complex.	1 – 5
Q7	I believe most people would learn to use this system quickly.	1 – 5
Q8	I found the system to be confusing.	1 – 5
Q9	I found the system to be useful for users.	1 – 5
Q10	I needed to learn a lot before I could effectively use the system.	1 – 5

Source: Data processed, 2025.

These results were obtained from 100 respondents and 10 statements. The overall data from the System Usability Scale calculation can be seen in Table 2 below:

Table 2 Overall SUS Data Calculation Results

Questions	Total	Value (Total × 2.5)	Average	Notes
Q1	313	782.5	3.13	valid
Q2	325	813.0	3.30	valid
Q3	374	935.0	3.70	valid
Q4	346	865.0	3.50	valid
Q5	324	810.0	3.24	valid
Q6	313	783.0	3.13	valid
Q7	307	768.0	3.07	valid
Q8	316	790.0	3.20	valid
Q9	338	845.0	3.40	valid
Q10	351	878.0	3.51	valid

Source: Data processed, 2025.

In Table 2, the SUS data is presented, showing scores for each of the 10 questions in the questionnaire. The lowest score was recorded for Q7 (Speed of the application), which had an average score of 3.07. This highlights performance-related issues where users reported frequent errors and poor responsiveness, negatively affecting their experience. On the other hand, Q3 (Reliability of the application) received the highest score of 3.70, indicating that users generally found the application reliable in supporting educational needs.

System Usability Scale (SUS) assessment in Figure 2 shows the usability evaluation results for the Qualitiva application using the System Usability Scale (SUS) method, represented by the average score for each statement (Q1 to Q10). The overall average score on this graph is indicated by the red dashed line, with a value of around 3.30.

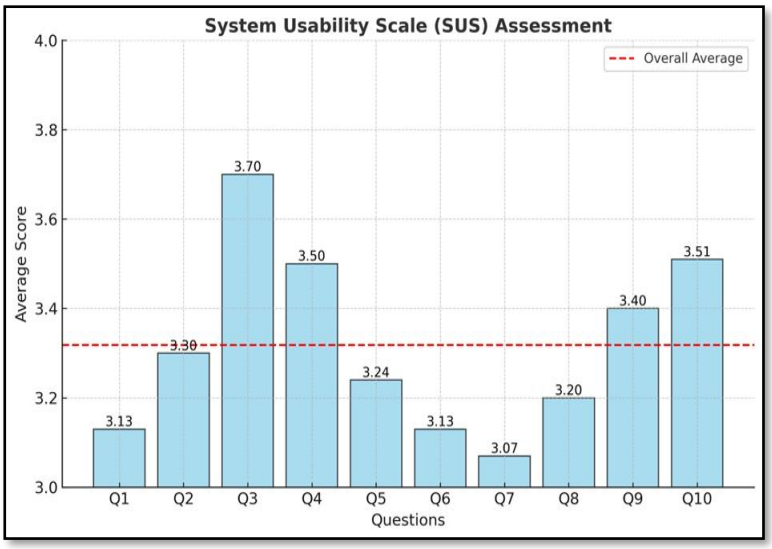

Figure 2 SUS Assessment with Overall Average

In Figure 2, the SUS assessment visually presents the average score for each of the 10 questions, with a red dashed line indicating the overall average score of 3.30. This visualization reinforces the need for improvements in the areas identified, particularly in speed and design. Additionally, the Heuristic Evaluation (HE) was conducted by two usability experts using Nielsen's 10 heuristics. The findings from the HE analysis identified critical issues, particularly in areas such as system status visibility, error prevention, and terminology clarity.

The heuristic evaluation (HE) analysis in this study was conducted by three expert evaluators using Nielsen's 10 heuristic principles as the evaluation framework. First, the Visibility of System Status principle was often violated because the application frequently failed to provide users with timely feedback about ongoing processes. Second, the Match Between System and the Real World principle was also a concern because some of the terms and visual cues used in the interface were not intuitive or familiar to users. Third, issues related to user control and freedom were identified. Users had limited options to undo or redo actions,

which could lead to frustration. Fourth, interface design inconsistencies violated the Consistency and Standards principle, causing navigation and usage confusion. Fifth, the lack of preventive measures or confirmation prompts indicated weaknesses in the error prevention principle. Sixth, the Recognition Rather Than Recall Principle was compromised due to the system's overreliance on users' memory rather than providing visual aids or suggestions. Seventh, the absence of flexibility and efficiency of use, such as shortcuts or customizable features, reduced the system's effectiveness for experienced users. Eighth, the Aesthetic and Minimalist Design principle was flagged because the interface sometimes displayed unnecessary information that cluttered the screen. Ninth, the system struggled to help users recognize, diagnose, and recover from errors, especially due to vague error messages that lacked clear resolution instructions. Tenth, the Help and Documentation aspect had a significant usability gap, as users found it difficult to access relevant and helpful support when encountering problems.

Each evaluator systematically assessed the application's usability by identifying issues based on these principles and assigning a severity rating to each problem found. The results were organized to highlight the most frequently encountered and critical usability issues, providing a clear overview of which areas require the most improvement. These findings, including the average severity level of each issue, are visually presented in Figure 3, offering a comprehensive summary of the evaluators' insights and emphasizing the critical areas for system improvement based on heuristic evaluation.

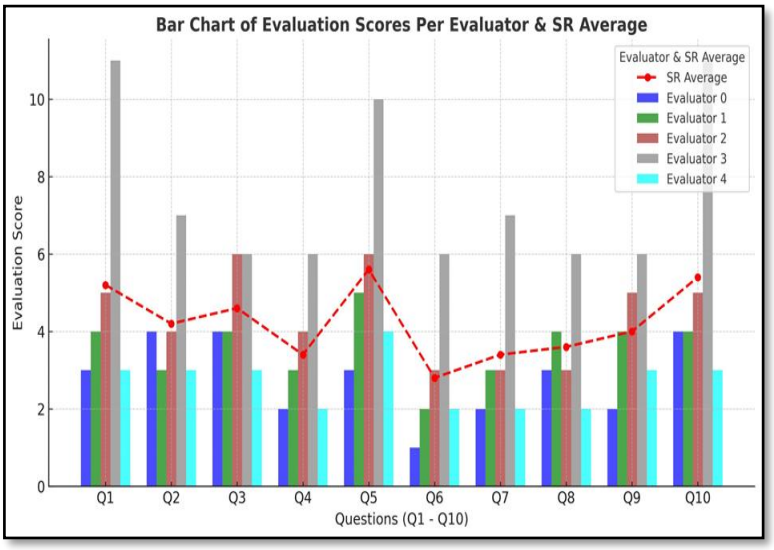

Figure 3 HE Assessment with Average Respondents' Scores

These issues are illustrated in Figure 3, which displays the severity level of each usability problem based on evaluations from three expert reviewers specializing in information technology. The first expert is Wihardi Anelta, S.Kom., an IT specialist from SMA Negeri 22 Palembang. The second and third experts are lecturers from Universitas Bina Darma: Prof. Dr. Edi Surya Negera, S.Kom., M.Kom., and Dr. A. Haidar, ST., M.Kom. Among the evaluated principles, Q1 (Visibility of System Status) and Q5 (Error Prevention) received the highest Severity Ratings (SR), identifying them as critical areas requiring immediate attention. Following the initial HE analysis from these experts, the researchers conducted a comprehensive review of their evaluations, and the summarized results are presented in Table 3 below.

Table 3 Evaluation Results from Experts

Questions	Total SR	Average SR	SD	Gap	Priority
Q1	25.67	5.13	3.30	-0.13	Critical Priority
Q2	16.33	3.27	2.55	1.73	High Priority
Q3	18.67	3.73	2.89	1.27	High Priority
Q4	14.00	2.80	2.17	2.20	Medium Priority
Q5	23.33	4.67	3.32	0.33	Critical Priority
Q6	14.00	2.80	2.17	2.20	Medium Priority
Q7	16.33	3.27	2.24	1.73	High Priority
Q8	11.67	2.33	1.84	2.67	Medium Priority
Q9	18.67	3.73	2.42	1.27	High Priority
Q10	18.67	3.73	2.89	1.27	High Priority

Source: Data processed, 2025.

In Table 3, the results of the expert evaluations are presented with a clear ranking of priority areas. Issues with the highest SR values, such as Q1 (5.13) and Q5 (4.67), are classified as critical priorities, indicating that they must be addressed immediately due to their significant impact on the usability of the application. These issues primarily relate to the lack of clarity in how the system communicates its status to the user, as well as the absence of adequate error prevention features.

Moreover, Q2 and Q3 were deemed to have high priority, with SR values of 3.27 and 3.73, respectively. These aspects include interface design and data security, which, although not as urgent as the critical priorities, still require prompt attention to enhance user experience and security.

Based on the results of the heuristic evaluation, the following analysis is presented based on the calculations showing the scores from each evaluator, along with the average Severity Rating (SR). Below are the main findings:

1. Identification of Major Issues Based on Severity Rating (SR)

The identification of major issues according to the SR can be divided into three categories: a) Q1 (5.13) and Q5 (4.67) have the highest SR values, falling into the Critical Priority category. This indicates that there are serious issues in the aspects tested in these questions, and they need to be addressed immediately. b) Q2 (3.27), Q3 (3.73), Q7 (3.27), Q9 (3.73), and Q10 (3.73) fall into the High Priority category, meaning there are significant issues that need to be fixed as soon as possible. c) Q4 (2.80), Q6 (2.80), and Q8 (2.33) fall into the Medium Priority category, indicating that although these issues are not as urgent, they still require attention for improvement.

2. Variation in Evaluator Ratings

To review the variation in ratings among evaluators, three points are highlighted: a) Some questions showed significant differences in ratings among evaluators, which is indicated by high variability in the chart. b) For example, Q1 and Q5 consistently received high scores, showing that nearly all evaluators agreed that there were serious issues in the aspects tested. c) On the other hand, Q4 and Q6 showed greater variation, indicating that some evaluators considered these issues problematic, while others considered them less severe.

3. Priority for Improvements

Based on the priority categories, the focus for improvements should be directed at the questions with high SR values. The actions to be taken can be summarized as follows: a) Q1 and Q5 (Critical Priority) require immediate action because the issues are serious and have a significant impact on usability. b) Q3, Q9, and Q10 (High Priority) need to be addressed soon to prevent disruption to the user experience. c) Q2 and Q7 (High Priority) should also be addressed but can wait until the primary issues are resolved.

An in-depth examination of the results reveals that performance issues—particularly in terms of speed—are the most pressing obstacles faced by users. The low SUS scores related to speed (Q7) suggest that users' tolerance for slow response times is minimal, especially in an educational context where time is critical. To address this, the application’s back-end optimization and server capacity could be improved to reduce latency and enhance overall

system responsiveness. Furthermore, a revised design with simplified interactions could also improve navigation and reduce errors that users commonly experience.

Moreover, the security concerns highlighted by users, particularly regarding data protection (Q9), underscore the need for stronger encryption protocols and secure user authentication measures. Given the growing concerns around cybersecurity in educational systems, the development of more robust security features—such as multi-factor authentication and real-time monitoring systems—would likely increase users' trust in the application, ultimately enhancing user satisfaction.

Lastly, the need for clearer user guidance and tutorials (Q5) reflects the learning curve that some users face when using new educational technology. Providing comprehensive user documentation and interactive onboarding tutorials could help improve usability, especially for new users. These measures would ensure smoother transitions for users unfamiliar with the application, ultimately improving both the user experience and user retention.

Based on the usability evaluation results using the System Usability Scale (SUS), the Qualitiva application received an average score of 69.00 (Grade C), indicating that the application is generally accepted by users, but still requires improvements in several key aspects such as speed, interface design, and data security. These findings are consistent with research by Mertha *et al.,* (2021), which shows that many digital educational applications still face usability challenges that affect their effectiveness. Application speed and responsiveness are also major obstacles in the user experience, as found in a study by Zhang *et al*., (2024), which emphasizes the importance of system performance optimization to enhance user satisfaction.

From the heuristic evaluation (HE), it was found that usability issues in the Qualitiva application primarily relate to system status visibility, user-unfriendly terminology, and the lack of error prevention features. This is similar to the findings of research by Ependi *et al.,* (2020), which identified that inconsistent interfaces and the lack of user guidance are often major barriers in the use of educational-based applications. The severity evaluation of usability issues in the HE indicates that the interface design and navigation aspects need improvement to enhance the overall user experience (Dewi *et al.,* 2023; Iryanti *et al.,* 2022). This result is also supported by research by Sauro and Lewis (2012), which states that a combination of quantitative and qualitative evaluation provides deeper insights into the usability of an application.

This study contributes significantly to understanding the usability of educational applications and provides data-driven recommendations for improvement. The findings emphasize that improving system speed, visual design, and data security is crucial to enhancing user satisfaction (Fayziyeva *et al.,* 2019). Furthermore, adjusting navigation and application features to be more intuitive can improve user efficiency in accessing key features (Shahzad *et al*,. 2024). Comparing these results with previous studies, it can be concluded that usability challenges in educational applications remain a key issue that needs to be addressed to ensure broader adoption of technology in educational settings.

Additionally, the evaluation results show that the ease of learning aspect of the Qualitiva application still needs improvement, especially for new users. Although most respondents felt confident in using the application, there is still a need for more comprehensive guides and documentation. This is in line with the findings of research by Sriyeni (2022), which highlights that clear documentation and easily accessible help features can assist users in overcoming difficulties in using educational applications. Therefore, improvements in this area could include adding interactive tutorials, better onboarding guides, and enhancing accessibility in the user interface.

Furthermore, data security aspects became a key concern in this study, where many respondents felt that protection of personal data still needed strengthening. These results support research by Shaukat *et al*., (2020); Chen and Madisetti (2025), which emphasize the importance of strong security systems in educational-based applications to prevent user data

breaches. In the context of the Qualitiva application, improving encryption systems, implementing two-factor authentication, and establishing more transparent privacy policies could be strategic steps in building user trust. Referring to these findings, this study not only provides insights into the usability of the application but also offers concrete recommendations for developers to improve the overall user experience.

CONCLUSION

Based on the explanation provided regarding the usability evaluation of the Qualitiva application using the System Usability Scale (SUS) and Heuristic Evaluation (HE), it shows that the application has a fairly good level of usability but still requires improvements in several aspects. The average SUS score of 69.00 (Grade C) indicates that the application is generally accepted by users; however, aspects such as speed, interface design, data security, and system efficiency still need to be improved. The heuristic evaluation conducted by two usability experts identified several key weaknesses, including system status visibility, the use of more user-friendly terminology, and the need for improvements in error prevention features.

Further analysis shows that the speed and responsiveness of the application are the main concerns for users, with several complaints related to system delays and a lack of reliability in operational processes. Additionally, the visual design, which is considered less attractive and intuitive, also impacts the user experience. Users also highlighted the need for clearer documentation and more comprehensive help features to enhance the ease of learning the system. In terms of security, the protection of users' personal and academic data remains a concern that must be addressed immediately to increase user trust.

As recommendations, this study suggests several improvement steps, including optimizing the application's speed, refining the interface design to be more intuitive and aesthetically pleasing, and enhancing the data security system. Furthermore, more comprehensive guides and documentation should be provided to help users, especially new ones, understand and operate the application more easily. This research provides significant contributions to the usability evaluation of educational applications and can serve as a foundation for further development to enhance the user experience and the effectiveness of the system in supporting the learning process.

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