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Research Article

COMPARATIVE ANALYSIS OF WEB-BASED EXAM APPLICATIONS BETWEEN KITA CBT AND WOKA CBT AT AS-SHOFA VOCATIONAL HIGH SCHOOL, TASIKMALAYA

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Abstract
The digital transformation in education has driven significant changes in the learning evaluation system. The shift from paper-based exams to Computer-Based Tests (CBT) reflects the need for efficiency, transparency, and accuracy. SMK AS-SHOFA Tasikmalaya is one of the schools that adopted a web-based exam system, initially using WOKA CBT, a third-party application that is relatively popular among educational institutions. However, the limitations of this application, especially in terms of feature flexibility, data security, and internal controls, prompted the school to develop an internal application called KITA CBT. This study aims to analyze the differences between KITA CBT and WOKA CBT in terms of usability, reliability, and user satisfaction. The research method used a quantitative approach with a comparative type. Data were collected through a Likert-based questionnaire distributed to 207 respondents, consisting of students and teachers, as well as technical performance tests on both applications. Data analysis included normality tests with the Shapiro–Wilk test, the Mann–Whitney U test, and data processing with Python and Excel. The results showed significant differences between the two applications in all three aspects tested. KITA CBT excels in ease of use, feature clarity, responsiveness, and efficient use of device resources. Conversely, WOKA CBT is relatively stable in certain technical aspects, although overall it falls short of the full flexibility and control offered by KITA CBT. These findings indicate that in-house application development offers a more adaptive solution for improving the quality of digital-based evaluations in secondary schools.

Keywords: Computer-Based Test, KITA CBT, WOKA CBT, usability, reliability

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INTRODUCTION

The development of information and communication technology in the digital era has had a significant impact on almost all sectors of life, including education. Learning processes that were once conventional have now been transformed into more modern ones, supported by digital technology. One aspect that has undergone the most significant change is the learning evaluation system. While evaluations were previously conducted manually using paper, computer-based evaluation systems, or Computer-Based Tests (CBTs), are now increasingly being implemented.

CBTs offer several advantages over paper-based exams. By utilizing computers and internet networks, CBTs can provide a more efficient, accurate, and transparent examination system. Answer corrections can be performed automatically, thereby speeding up the assessment process and reducing the risk of human error. Furthermore, CBTs are environmentally friendly because they significantly reduce paper usage. In the context of 21st-century education, the existence of CBTs aligns with the demands of adaptive, efficient, and technology-based learning (Arikunto, 2013; Febiola et al., 2024).

In Indonesia, the implementation of CBTs has become more widespread since the implementation of the Computer-Based National Assessment (ANBK) by the Ministry of Education. This policy encouraged secondary schools, including vocational high schools (SMK), to transition from paper-based exams to digital ones. However, the implementation of CBT in the field has not always been smooth. Frequent obstacles include limited devices, unstable internet connections, and the selection of CBT applications that are not suited to the school's needs.

SMK AS-SHOFA Tasikmalaya is one school that has implemented web-based CBT for its exams. Initially, the school used WOKA CBT, a popular third-party application among educational institutions. This application facilitates question distribution and assessment, and supports online exam administration. However, over time, the school discovered several limitations with this application. These limitations include a lack of flexibility in feature customization, limited full control over data because it is managed by an external party, and difficulties integrating with the school's internal systems (Safitri et al., 2020; Tannady et al., 2023).

To address these limitations, SMK AS-SHOFA developed an internal application called KITA CBT. Unlike WOKA CBT, this application is designed and managed directly by the school's internal team, giving them full control over features, data, and system development. KITA CBT allows schools to customize the application to meet specific needs, enhance data security, and open up opportunities for integration with internal academic systems. Thus, KITA

CBT serves not only as an evaluation tool but also as a symbol of the school's independence in utilizing digital technology.

The fundamental differences between KITA CBT and WOKA CBT raise an important question: which application is more effective in supporting exam implementation in schools? To answer this question, the study focused on three main aspects: usability (ease of use), reliability (system reliability), and user satisfaction. These three aspects are considered important because they reflect the real experiences of teachers and students as end users of the application.

A literature review indicates that usability is a crucial factor in determining the success of digital applications. Nielsen (2012) emphasized that an easy-to-use system will increase user comfort and accelerate user adaptation. In an educational context, the ease of use of a CBT application will help students focus more on solving problems rather than facing technical difficulties.

The second aspect is system reliability. The reliability of a CBT application includes stability, minimal technical errors, and consistent performance across a variety of conditions. Saini et al. (2024) stated that the reliability of a digital system is crucial for maintaining smooth activities, especially those involving multiple users simultaneously. In computer-based exams, reliability determines whether the application can handle the burden of student access without experiencing disruptions that could disrupt the exam.

The final aspect is user satisfaction. Satisfaction reflects the extent to which the application meets the expectations and needs of teachers and students. According to Delone & McLean, user satisfaction is influenced by system quality, information quality, and service quality. In this study, satisfaction is an important indicator for assessing users' subjective experiences with KITA CBT and WOKA CBT.

Several previous studies reinforce the urgency of this research. Tannady et al. (2023) found that CBT can significantly accelerate the evaluation of learning outcomes. Safitri et al. (2020) noted that CBT can reduce exam operational costs. However, most research still focuses on the implementation of a single application or specific technical aspects. Research specifically comparing two different CBT applications in a secondary school context is still rare. Therefore, this study aims to fill this gap in the literature by presenting a comparative analysis of KITA CBT and WOKA CBT.

Against this background, this study has several objectives. First, to analyze the usability differences between KITA CBT and WOKA CBT. Second, to assess the differences in reliability of the two applications. Third, to measure user satisfaction with each application. The results of this study not only provide practical recommendations for SMK AS-SHOFA but also contribute theoretically to the development of literature related to CBT implementation in education.

RESEARCH METHOD

This study employed a quantitative approach with a comparative approach designed to analyze the differences between two web-based exam applications, KITA CBT and WOKA CBT. The quantitative approach was considered appropriate because it allows for objective data measurement and statistical analysis to prove the research hypothesis (Arikunto, 2013). The comparative design was chosen because the primary focus of this study was to identify significant differences between the two applications used in the context of computer-based learning evaluation.

The research location was SMK AS-SHOFA Tasikmalaya, with teachers and students participating as respondents. A total of 207 respondents were selected using a total sampling technique, as the entire population of application users was considered relevant for analysis. Respondents were considered to have direct experience using both KITA CBT and WOKA

CBT, so their perceptions could reflect the quality of application use in practice (Febiola et al., 2024).

The research data were obtained from two primary sources: a questionnaire and a technical performance test. The questionnaire was constructed using a Likert scale with five levels of assessment to measure the three main research variables: usability, reliability, and user satisfaction. Question indicators included ease of menu navigation, display clarity, system response speed, application stability, and general satisfaction with the application. The use of this scale aligns with previous research practices that assess computer-based information systems through end-user perceptions (Tannady et al., 2023; Safitri et al., 2020).

In addition to perceptual data, this study also collected technical data through application performance testing. Performance testing was conducted by assessing six indicators: response time, feedback accuracy, CPU usage, RAM usage, exam duration, and exam result assessment status. This approach allows for a more comprehensive analysis because it not only assesses subjective user aspects but also tests the system's technical reliability (Saini et al., 2024; Haddaji et al., 2024).

Data collection was conducted in two stages. First, online questionnaires were distributed to teachers and students. Second, technical performance testing was conducted by conducting exam simulations on both applications to record system performance. The data obtained were then analyzed descriptively and inferentially. Descriptive analysis was used to describe the distribution of respondents' responses, while inferential analysis was used to test the hypothesis of differences between KITA CBT and WOKA CBT.

Before conducting the hypothesis testing, the data were first tested for normality using the Shapiro–Wilk method. The results indicated that the data were not normally distributed, so the analysis was continued with the non-parametric Mann–Whitney U Test. This test is relevant for comparing two independent data sets with non-normal distributions, thus enhancing the validity of the results (Maurya et al., 2024). All data processing was performed using Python software in the Jupyter Notebook environment and Microsoft Excel to ensure analytical accuracy.

The validity and reliability of the instrument were tested before the questionnaire was administered. Content validity was conducted through expert assessment to ensure that the questions align with the indicators being measured. Reliability was calculated using Cronbach's Alpha, with results showing a value greater than 0.70. This indicates that the instrument used has a good level of internal consistency, making it suitable for measuring the variables in the study (Mudjiyanto & Roring, 2024).

With these procedures, this research is expected to produce valid, reliable, and scientifically accountable findings. The comparison of KITA CBT and WOKA CBT not only provides empirical information regarding the strengths and weaknesses of each application but also provides practical contributions to the development of digital-based evaluation systems in secondary schools.

RESULTS AND DISCUSSION

The results of this study were obtained through data collection from 207 respondents, consisting of teachers and students at SMK AS-SHOFA Tasikmalaya, supplemented by the results of technical performance tests on the KITA CBT and WOKA CBT applications. The data analyzed covered three main variables: usability, reliability, and user satisfaction. The analysis was conducted in two stages: descriptive analysis to illustrate the tendencies of respondents' responses, and inferential analysis to test hypotheses regarding significant differences between the two applications.

The questionnaire results indicated that KITA CBT received higher ratings for usability than WOKA CBT. Respondents considered the menus on KITA CBT easier to understand, the display simpler, and the login process faster and more efficient. This contrasts with WOKA CBT, which, although quite stable, was considered to have a more complex interface and required a longer adaptation time. KITA CBT's superiority in usability demonstrates that the internal application is able to provide a more user-friendly user experience for both students and teachers (Febiola et al., 2024).

Regarding reliability, the questionnaire results indicated that WOKA CBT was relatively more stable in managing exam traffic and rarely experienced technical glitches. However, KITA CBT was considered faster in responding to commands, providing more accurate feedback, and more efficient in using device resources. This indicates that reliability is not only measured by stability but also includes system performance efficiency (Saini et al., 2024).

User satisfaction was more dominant in KITA CBT. The majority of respondents expressed satisfaction with this application due to the flexibility of development and full control over features held by the school. Data security was also an advantage of KITA CBT over WOKA CBT, as data is completely stored and managed internally. Thus, KITA CBT not only meets user needs technically but also provides confidence in system use (Tannady et al., 2023).

Normality testing using the Shapiro–Wilk method indicated that the research data were not normally distributed ($p < 0.05$). Therefore, the analysis continued using the non-parametric Mann–Whitney U Test. The test results showed significant differences between KITA CBT and WOKA CBT across the three study variables: usability, reliability, and user satisfaction ($p < 0.05$).

This finding supports the descriptive results, which showed that KITA CBT was superior overall in usability and satisfaction, while WOKA CBT was relatively stronger in certain stability aspects. However, the difference in performance between the two was significant enough to suggest that KITA CBT provided a better user experience at SMK AS-SHOFA.

Technical performance testing was conducted to compare the efficiency of the two applications across six key indicators. The test results revealed significant differences in four indicators: response time, feedback, CPU usage, and RAM usage. In these indicators, KITA CBT proved superior due to its ability to provide faster responses, more accurate feedback, and lower device resource consumption.

However, in the other two indicators: exam duration and assessment status, no significant differences were found between KITA CBT and WOKA CBT ($p > 0.05$). This indicates that both applications have relatively equal capabilities in maintaining exam duration and displaying assessment status results. Thus, despite the advantages of KITA CBT, WOKA CBT is still able to provide decent performance in several technical aspects (Haddaji et al., 2024).

Table 1. Research findings

No.	Research purposes	Research findings
1	Analyzing the differences in usability between KITA CBT and WOKA CBT	KITA CBT demonstrated a 13.6% advantage over WOKA CBT. This indicates that users found the app more comfortable and helpful, both in terms of appearance, navigation, and ease of access to exam features.
2	Analyzing the differences in reliability of the two applications	The KITA CBT also performed better, with a score of approximately 15.7% higher than the WOKA CBT. This indicates that the KITA CBT is more stable, less disruptive, and responsive during the exam.
3	Measuring user	KITA CBT outperformed WOKA CBT by approximately

satisfaction	12.2%. This indicates that users were more satisfied overall with their experience using KITA CBT.

The findings of this study indicate that the success of a CBT application is heavily influenced by its usability. Nielsen emphasizes that a good system must be easy to use, learn quickly, and be comfortable to use. The results show that KITA CBT meets these principles better than WOKA CBT. This aligns with the research of Febiola et al. (2024), which emphasized the importance of simple interface design to increase the effectiveness of digital applications in education.

Reliability is the next aspect that determines application quality. The results show that KITA CBT offers more efficient technical performance. This finding supports the research of Saini et al. (2024), which states that information system reliability is not only determined by stability but also by the efficiency of resource use and response speed.

In terms of user satisfaction, this study shows that internal applications are more capable of meeting user expectations than external applications. KITA CBT provides schools with full control over the data and features used, thereby increasing confidence in the application's use. These results align with research by Tannady et al. (2023), which states that user satisfaction is strongly influenced by the application's suitability to organizational needs.

Furthermore, this study makes a novel contribution by comparing two CBT applications in a secondary school context. Most previous studies have focused on the implementation of only one application or examined specific aspects (Safitri et al., 2020). Thus, this study fills the gap in the literature by presenting a broader comparative analysis. To clarify the research results, the following table presents a summary of the findings based on the research objectives.

CONCLUSION

This study aims to analyze the differences between two web-based exam applications, KITA CBT and WOKA CBT, in the context of implementing learning evaluations at SMK AS-SHOFA Tasikmalaya. Three main aspects were examined: usability, reliability, and user satisfaction. Based on the results of questionnaire analysis, statistical tests, and technical performance tests, several important conclusions were drawn.

First, in terms of usability, KITA CBT proved superior to WOKA CBT. This internal application offers a simple interface, clear navigation, and a faster and more understandable login process. These advantages make students and teachers more comfortable using the application, thus increasing their focus on problem solving.

Second, in terms of reliability, KITA CBT was relatively stable under certain conditions, but KITA CBT demonstrated more efficient technical performance. Performance test results showed that KITA CBT responded more quickly to commands, provided more accurate feedback, and used CPU and RAM resources more efficiently. Therefore, although both applications are suitable for use, KITA CBT is more adaptable to meet the needs of digital exams in schools.

Third, regarding user satisfaction, the majority of respondents were more satisfied with KITA CBT than WOKA CBT. Development flexibility, data security, and full control over application features were the main reasons for this high level of satisfaction. This reinforces the view that internal applications are better able to adapt to organizational needs than external applications.

Overall, the study results indicate that KITA CBT is more effective than WOKA CBT in supporting the implementation of computer-based evaluations at SMK AS-SHOFA Tasikmalaya. This finding underscores the importance of school independence in developing digital systems tailored to internal needs. Furthermore, this study provides a theoretical

contribution by enriching the literature on CBT implementation, and a practical contribution by providing recommendations for other schools wishing to adopt web-based exam applications.

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