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User Experience Evaluation of SPADA Indonesia Using the User Experience Questionnaire (EQ)

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Abstract: User experience (UX) has become a crucial determinant of the effectiveness and sustainability of online learning platforms. SPADA Indonesia, as the national online learning system, plays a strategic role in expanding access to higher education across Indonesia. However, systematic evaluation of its user experience from the users' perspective remains limited. This study aims to analyze the user experience of SPADA Indonesia using the User Experience Questionnaire (EQ). A quantitative descriptive-evaluative survey method was employed involving 255 lecturers from 104 universities across 24 provinces in Indonesia. Data were collected using the Indonesian-adapted EQ and analyzed with the EQ Data Analysis Tool. The results indicate that SPADA Indonesia demonstrates positive performance across all six EQ dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. While the platform provides a functional and enjoyable learning experience, the novelty dimension scored comparatively lower, indicating room for improvement in innovation and creativity. This study contributes empirically to UX evaluation in online learning platforms and provides practical recommendations for improving SPADA Indonesia.

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Introduction

The rapid advancement of digital technology has significantly transformed the landscape of higher education, particularly through the widespread adoption of online learning platforms (Belawati & Nizam, 2020). These platforms are no longer viewed merely as technological tools, but as integral components of learning ecosystems that influence accessibility, interaction, learning quality, and institutional collaboration (Widjaja, 2025). The expansion of online and blended learning models has become increasingly important in responding to geographical, economic, and infrastructural disparities, especially in countries with diverse regional characteristics such as Indonesia.

In response to these challenges, the Indonesian Ministry of Education, Culture, Research, and Technology introduced SPADA Indonesia (Sistem Pembelajaran Daring Indonesia) as a national online learning system (Belawati & Nizam, 2020). SPADA Indonesia is designed to support equitable access to higher education, facilitate inter-university credit transfer, and promote collaboration among higher education institutions. Through SPADA

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Indonesia, students are able to enroll in courses offered by other universities and receive academic credit recognition at their home institutions, thereby strengthening the national higher education network.

As a national-scale learning management system, SPADA Indonesia is expected to deliver not only reliable technical performance but also a positive and meaningful user experience. User experience (UX) refers to users' overall perceptions, emotions, and responses resulting from interaction with a digital system (Díaz-Oreiro et al., 2019). In the context of online learning, UX plays a critical role in shaping users' motivation, engagement, satisfaction, and continued use of the platform. A system that is difficult to understand or inefficient to use may discourage participation and reduce learning effectiveness, whereas a well-designed system can enhance interaction, efficiency, and learning outcomes.

In educational technology, user experience is not merely related to the ease of operating a digital platform, but also concerns how technological systems support meaningful learning interactions and instructional activities. A well-designed learning platform should provide intuitive navigation, efficient access to learning resources, reliable system performance, and engaging features that encourage continuous user interaction. Therefore, evaluating user experience is an important aspect of ensuring that digital learning platforms align with the needs and expectations of their users.

Despite its strategic importance, evaluations of SPADA Indonesia have predominantly emphasized technical infrastructure, system functionality, and pedagogical implementation. While these aspects are essential, they do not fully capture how users perceive and experience the platform in real usage contexts. Limited attention has been given to systematic evaluation of user experience from the perspective of actual users, particularly lecturers who actively utilize SPADA Indonesia in teaching and academic collaboration. This gap is significant, as users' perceptions provide valuable insights into system strengths, weaknesses, and areas requiring improvement (Ajie et al., 2019).

Although previous studies have examined the usability and technical performance of online learning platforms, further investigation is needed to understand how users perceive the overall learning experience, particularly in terms of attractiveness, clarity, efficiency, reliability, stimulation, and innovation. Therefore, evaluating SPADA Indonesia through the User Experience Questionnaire (UEQ) is essential to identify areas that require improvement and support the development of a more user-centered digital learning environment.

The growing competition among digital learning platforms and increasing user expectations further highlight the importance of user experience evaluation. Users today expect online learning systems to be not only functional, but also intuitive, efficient, engaging, and innovative. Negative user experiences may lead to reduced motivation and resistance to technology adoption, whereas positive experiences support sustained use and institutional success (Widjaja, 2025). Therefore, systematic UX evaluation has become a crucial component in the continuous development and quality assurance of digital learning platforms.

One widely recognized instrument for evaluating user experience is the User Experience Questionnaire (EQ). The EQ is a standardized instrument developed to measure both pragmatic and hedonic aspects of user experience (Laugwitz et al., 2008). It evaluates six dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. The pragmatic dimensions focus on usability-related aspects such as clarity, efficiency, and reliability, while the hedonic dimensions address emotional and experiential aspects such as stimulation and innovation (Díaz-Oreiro et al., 2019). The EQ has been

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internationally validated and widely applied in the evaluation of various digital products, including educational technology systems (Saleh et al., 2022).

The use of the EQ allows researchers to obtain a comprehensive and structured understanding of user experience and to compare results with international benchmark data. This makes the EQ particularly suitable for evaluating a national learning platform such as SPADA Indonesia, where large-scale adoption and diverse user backgrounds require a reliable and comparable evaluation framework.

Therefore, this study aims to analyze the user experience of SPADA Indonesia using the User Experience Questionnaire (EQ). Specifically, the study seeks to examine user perceptions across the six EQ dimensions, identify strengths and weaknesses of the platform, and compare the results with international benchmark data. The findings are expected to contribute theoretically to research on user experience in educational technology and practically to the continuous improvement of SPADA Indonesia as a national online learning platform.

Research Method

This study adopted a quantitative research approach with a descriptive–evaluative survey design to provide a systematic evaluation of the user experience of SPADA Indonesia. The research process was structured into several sequential stages to ensure methodological clarity and consistency with the objectives of the study. This approach is widely used in user experience and educational technology research to examine users' perceptions of digital systems in real usage contexts (Ajie et al., 2019; Díaz-Oreiro et al., 2019).

In educational technology, user experience is not merely related to the ease of operating a digital platform, but also concerns how technological systems support meaningful learning interactions and instructional activities. A well-designed learning platform should provide intuitive navigation, efficient access to learning resources, reliable system performance, and engaging features that encourage continuous user interaction. Therefore, evaluating user experience is an important aspect of ensuring that digital learning platforms align with the needs and expectations of their users.

The first stage involved identifying the research focus and population. The population consisted of active users of SPADA Indonesia, specifically lecturers from higher education institutions across Indonesia. Lecturers were selected because they are key actors in utilizing SPADA Indonesia for instructional delivery, course management, and inter-university collaboration. Their continuous interaction with the platform enables them to provide comprehensive evaluations of its user experience.

The second stage concerned sampling. A purposive sampling technique was employed to ensure that only lecturers with direct experience using SPADA Indonesia participated in the study. To reflect the national scope of the platform, stratified considerations were applied based on institutional type and geographical distribution. As a result, 255 lecturers from 104 universities located in 24 provinces were involved in the study. This broad distribution supports the representativeness of the data and aligns with the national implementation of SPADA Indonesia (Belawati & Nizam, 2020).

The third stage focused on data collection. Data were collected using the Indonesian-adapted version of the User Experience Questionnaire (EQ). The EQ is a standardized instrument developed to measure both pragmatic and hedonic aspects of user experience (Laugwitz et al., 2008). It consists of 26 bipolar adjective pairs measured on a semantic differential scale ranging from −3 to +3. These items capture users' perceptions across six

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dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty (Díaz-Oreiro et al., 2019). The questionnaire was distributed online to participants during the active use period of SPADA Indonesia. Prior to completing the questionnaire, respondents were informed about the purpose of the study and provided informed consent.

The final stage involved data analysis and interpretation. The collected data were processed using the EQ Data Analysis Tool to obtain mean scores for each EQ dimension. Descriptive statistical analysis was applied to summarize users' perceptions of the platform. Based on EQ interpretation guidelines, mean values above 0.8 indicate a positive user experience evaluation (Laugwitz et al., 2008). Furthermore, benchmark analysis was conducted by comparing the obtained scores with international EQ benchmark datasets. This comparison allowed the classification of each dimension into quality categories, namely Excellent, Good, Above Average, Below Average, or Bad. The results of the analysis were then interpreted to identify strengths and weaknesses of SPADA Indonesia and to formulate evidence-based recommendations for improving the platform's user experience.

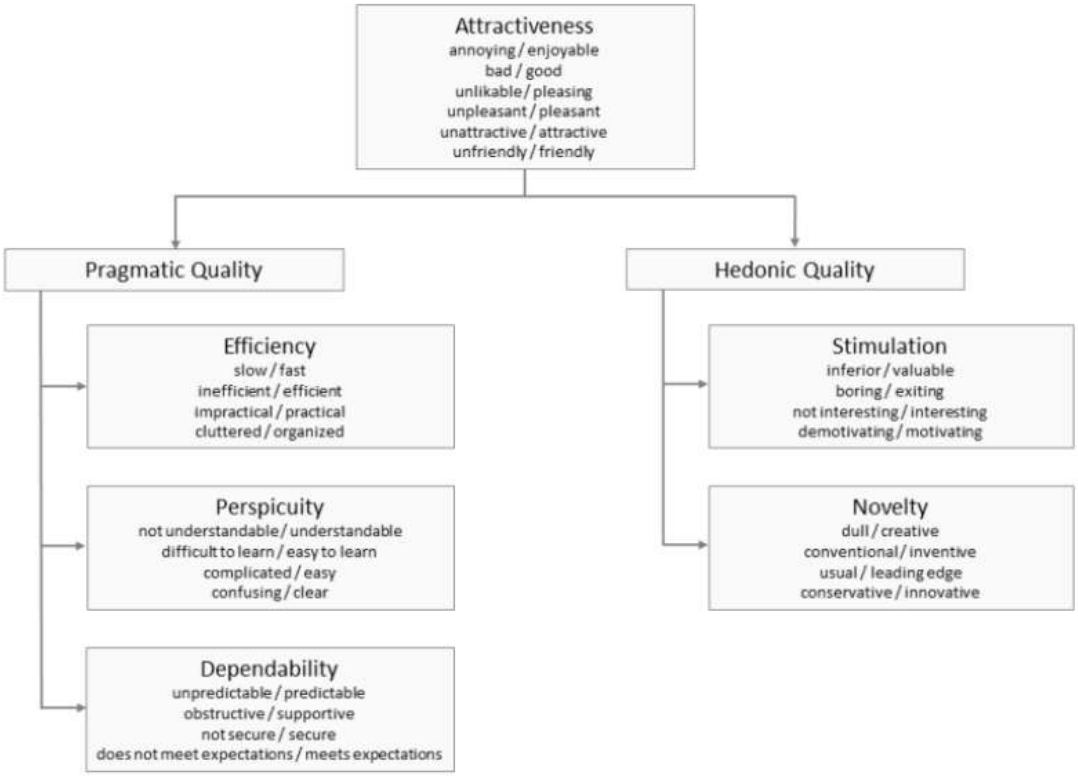


Figure 1. UEQ Structure Scale (Schrepp, 2019)

Figure 1 illustrates the structure of the User Experience Questionnaire (UEQ), which consists of six dimensions representing different aspects of user experience. These dimensions are attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. The six dimensions can be further categorized into pragmatic and hedonic quality aspects. Pragmatic quality comprises perspicuity, efficiency, and dependability, which focus on the functional aspects of user interaction, including ease of understanding, task completion, and system reliability. Meanwhile, hedonic quality consists of stimulation and novelty, which reflect the extent to which a system provides an engaging, motivating, and innovative

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experience. Attractiveness represents the overall impression users develop when interacting with the system. In this study, the UEQ framework provides a comprehensive basis for examining lecturers' perceptions of SPADA Indonesia, covering both functional usability and experiential quality.

Result and Discussion

Result

This section summarizes the main findings of the study by presenting the core results and their interpretation in a concise manner suitable for journal publication.

The analysis of the EQ data collected from 255 lecturers indicates that SPADA Indonesia demonstrates a positive overall user experience. All six EQ dimensions obtained mean scores above the threshold value of 0.8, which, according to EQ interpretation guidelines, indicates good system performance (Laugwitz et al., 2008). As presented in Table 1, perspicuity achieved the highest mean score (M = 1.62), followed by efficiency (M = 1.58) and attractiveness (M = 1.45). These results suggest that SPADA Indonesia is perceived as easy to understand, efficient to use, and generally appealing, which are critical factors for user acceptance and sustained use in online learning environments (Ajie et al., 2019; Díaz-Oreiro et al., 2019).

The dependability dimension also received a good evaluation (M = 1.41), indicating that users perceive the system as reliable, predictable, and supportive of their teaching activities. This finding aligns with previous studies emphasizing the importance of system reliability and control in enhancing users' trust and continued use of digital learning platforms (Widjaja, 2025).

Meanwhile, stimulation (M = 1.36) and novelty (M = 1.05), which represent hedonic quality aspects, obtained comparatively lower scores, although they remain within the positive evaluation range. The lower novelty score indicates that, while functional, SPADA Indonesia is perceived as less innovative compared to other digital platforms. Similar findings have been reported in prior research on institutional and national learning management systems, which often prioritize stability and usability over innovation and emotional engagement (Díaz-Oreiro et al., 2019).

Benchmark comparison results, summarized in Table 2, show that most EQ dimensions fall into the Good category when compared with international EQ benchmark data, while the novelty dimension is classified as Above Average. Benchmarking against international datasets is essential for positioning system performance within a broader context and has been widely recommended in EQ-based evaluations (Laugwitz et al., 2008; Saleh et al., 2022).

Overall, the results indicate that SPADA Indonesia successfully supports lecturers' functional needs in online teaching activities. However, enhancing hedonic aspects such as stimulation and novelty may further improve user engagement, motivation, and long-term satisfaction. These improvements are particularly important for sustaining large-scale national learning platforms amid increasing competition and rising user expectations (Belawati & Nizam, 2020).

Table 1. Mean Scores of EQ Dimensions for SPADA Indonesia

EQ Dimension	Mean Score	Interpretation
Attractiveness	1.45	Good
Perspicuity	1.62	Good

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Efficiency	1.58	Good
Dependability	1.41	Good
Stimulation	1.36	Good
Novelty	1.05	Above Average

Table 1 presents the mean scores of the six User Experience Questionnaire (UEQ) dimensions for SPADA Indonesia. The results indicate that all six dimensions obtained positive mean scores, exceeding the recommended threshold of 0.8. Perspicuity achieved the highest mean score (M = 1.62), indicating that lecturers generally perceive the platform as easy to understand and learn. This was followed by efficiency (M = 1.58), suggesting that users can accomplish their tasks effectively, and attractiveness (M = 1.45), reflecting a generally positive overall impression of the platform. Dependability also demonstrated a positive evaluation (M = 1.41), indicating that users perceive the system as relatively predictable and reliable. Meanwhile, stimulation (M = 1.36) and novelty (M = 1.05) received comparatively lower scores. Although both dimensions remained within the positive range, the findings suggest that the platform has opportunities to improve its engaging features and innovative characteristics. Overall, these results indicate that SPADA Indonesia is perceived more positively in terms of functional usability than experiential innovation.

Table 2. EQ Benchmark Classification of SPADA Indonesia

EQ Dimension	Benchmark Category
Attractiveness	Good
Perspicuity	Good
Efficiency	Good
Dependability	Good
Stimulation	Good
Novelty	Above Average

Table 2 presents the benchmark classification of SPADA Indonesia based on the international UEQ benchmark dataset. The results show that five dimensions, namely attractiveness, perspicuity, efficiency, dependability, and stimulation, were classified as Good, while novelty was classified as Above Average. These classifications indicate that SPADA Indonesia demonstrates a competitive user experience compared with other products included in the UEQ benchmark dataset. The Good classification across five dimensions suggests that the platform performs positively in terms of overall appeal, ease of use, efficiency, reliability, and user stimulation. However, the Above Average classification in novelty indicates that the platform's perceived innovativeness has not reached the Good benchmark category. This finding highlights an opportunity to strengthen innovative features and improve the overall user experience. Therefore, although SPADA Indonesia demonstrates satisfactory performance across the evaluated dimensions, further development is particularly needed in its novelty-related aspects.

Discussion

The findings of this study demonstrate that SPADA Indonesia provides a positive user experience, particularly in terms of pragmatic quality dimensions such as perspicuity, efficiency, and dependability. High perspicuity scores indicate that lecturers perceive the system as easy to understand and learn, which is a critical factor in technology acceptance

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and continued use in higher education environments (Ajie et al., 2019; Díaz-Oreiro et al., 2019). Ease of use reduces cognitive load and allows users to focus on pedagogical tasks rather than technical difficulties, a condition that has been consistently emphasized in studies on online learning systems (Belawati & Nizam, 2020; Widjaja, 2025).

The difference between pragmatic and hedonic quality dimensions may reflect the platform's primary orientation toward supporting functional academic activities. Features related to navigation, task completion, and system reliability appear to meet lecturers' basic operational needs. However, the comparatively lower scores in stimulation and novelty suggest that functional usability alone may not be sufficient to create an engaging and innovative digital learning experience.

The strong performance in efficiency suggests that SPADA Indonesia enables lecturers to accomplish teaching-related tasks effectively and with minimal effort. This finding aligns with prior research indicating that system efficiency is closely related to perceived usefulness and user satisfaction in digital learning platforms (Díaz-Oreiro et al., 2019; Saleh et al., 2022). Similarly, positive evaluations of dependability reflect users' trust in the system's reliability, predictability, and control. System dependability is essential in national-scale platforms, where technical instability may significantly disrupt learning activities across institutions (Widjaja, 2025).

In contrast, the hedonic quality dimensions—stimulation and novelty—received comparatively lower scores. Although still within the positive range, these results indicate that SPADA Indonesia is perceived as less engaging and less innovative than other contemporary digital platforms. Previous studies have noted that institutional and national learning management systems often prioritize stability and standardization over innovation and emotional engagement (Laugwitz et al., 2008; Díaz-Oreiro et al., 2019). However, hedonic quality plays an important role in fostering user motivation, enjoyment, and long-term engagement, particularly in technology-mediated learning environments (Saleh et al., 2022).

The benchmark comparison further contextualizes these findings by positioning SPADA Indonesia within international user experience standards. Most EQ dimensions were categorized as Good, while novelty was classified as Above Average, indicating that SPADA Indonesia performs competitively when compared with a wide range of digital systems evaluated using the same instrument (Laugwitz et al., 2008; Schrepp, 2019). These results confirm that SPADA Indonesia has successfully met its core functional objectives as a national online learning platform, while also highlighting areas for experiential enhancement.

Overall, the discussion suggests that SPADA Indonesia excels in supporting lecturers' functional needs but requires further development in experiential and emotional aspects of user experience. Addressing these aspects is increasingly important as user expectations evolve and competition among digital learning platforms intensifies (Belawati & Nizam, 2020; Widjaja, 2025).

Conclusion

This study concludes that SPADA Indonesia demonstrates a positive overall user experience based on the evaluation using the User Experience Questionnaire (EQ). All six EQ dimensions achieved mean scores above the recommended threshold, indicating that the platform effectively supports lecturers' teaching activities in terms of clarity, efficiency, and system reliability (Laugwitz et al., 2008; Díaz-Oreiro et al., 2019). These findings affirm the

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effectiveness of SPADA Indonesia as a national online learning system that facilitates teaching and inter-university collaboration across higher education institutions in Indonesia.

Nevertheless, the relatively lower scores in the novelty and stimulation dimensions reveal the need for improvement in innovation, interface design, and interactive features. While SPADA Indonesia is functionally reliable, enhancing its hedonic qualities is essential to improve user engagement, emotional satisfaction, and long-term sustainability in an increasingly competitive digital learning landscape (Saleh et al., 2022; Widjaja, 2025).

Recommendation

Based on the findings, SPADA Indonesia developers and policymakers should prioritize improving the platform's hedonic quality by incorporating more innovative features, interactive learning tools, and visually engaging interface designs. These improvements are expected to enhance user satisfaction, motivation, and engagement. Furthermore, regular user experience evaluations should be conducted to identify user needs and support continuous platform development. Future research should involve broader user groups, including students and system administrators, and employ mixed-method approaches to gain deeper insights into user experiences and identify further opportunities for improving SPADA Indonesia as a more effective, engaging, and user-centered digital learning platform.

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