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Usability and Acceptance of EduPetualang: A SUS Study in Bandung Elementary Schools

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Abstract
This study aims to evaluate the usability level of the EduPetualang learning platform using the System Usability Scale (SUS). Usability is assessed through four main aspects: effectiveness, efficiency, satisfaction, and user control. The research involved 112 teacher respondents who used the platform in an educational context. Data were collected using a ten-item SUS questionnaire and analyzed quantitatively. The findings indicate that users perceived the platform as easy to use, well-integrated, and satisfactory for achieving learning goals. Overall, EduPetualang was evaluated to have excellent usability according to standardized SUS benchmarks. The results suggest that the platform supports learning activities effectively and is well-received by users, particularly educators. The study concludes that EduPetualang is suitable for implementation in classroom settings and provides recommendations for improving system features to further enhance user experience.
Keywords: EduPetualang, SUS Study, Elementary Schools

1. INTRODUCTION

Entering the 21st century, technoloThe rapid advancement of digital technology has significantly transformed the landscape of education, especially in primary schools where engaging and accessible learning tools are essential. Online learning platforms are increasingly utilized to enhance educational delivery, not only by providing interactive learning materials for students but also by offering supporting resources for teachers. These platforms are expected to facilitate a more comprehensive educational experience by addressing both instructional and administrative needs (Herlambang, 2021; Herlambang & Abidin, 2022; Permana et.al., 2024).

However, the success of such platforms is highly dependent on how well they are received and utilized by their users. In the context of primary education, students require intuitive and motivating interfaces, while teachers need accessible tools that support their pedagogical and administrative responsibilities. Therefore, usability becomes a critical factor that influences the effectiveness, adoption, and long-term sustainability of digital learning platforms (Yunansah et.al., 2022; Wahid et.al., 2023; Wahid & Asrina, 2024).

Several recent studies have emphasized the importance of evaluating the usability of educational platforms using standardized instruments. One widely accepted method is the System Usability Scale (SUS), developed by John Brooke in 1996, which provides a quick and reliable tool for measuring the perceived usability of a system. Research has shown that SUS can be effectively applied in educational contexts to assess the user-friendliness and overall satisfaction with digital learning tools, particularly in school environments where diverse user needs must be addressed (Putra et al., 2021; Sari & Nugroho, 2022).

In recent years, usability studies in educational technology have gained increasing

attention, particularly as digital platforms become integral to teaching and learning across all educational levels. Several studies have employed the System Usability Scale (SUS) to evaluate learning management systems, mobile learning applications, and web-based platforms. These studies generally report moderate to high usability scores, yet also emphasize the need for systems to adapt to user diversity and educational contexts (Nasution & Fitriani, 2023; Hidayatullah et al., 2022). However, the majority of existing research focuses on single-function platforms—often limited to student-facing features—and rarely consider platforms that also serve teacher needs, such as providing access to administrative documents, teaching references, or multi-format content delivery (e.g., games, reading rooms, or curated resources).

Moreover, studies evaluating usability in primary education settings remain underrepresented, with most usability research conducted at the secondary or tertiary level, where digital literacy and access infrastructure are generally more developed. In the few studies that address elementary school contexts, findings suggest that platform usability must account not only for intuitive navigation but also for developmentally appropriate design and content integration, especially when targeting young learners and teachers simultaneously (Putri & Gunawan, 2022).

These limitations underscore the need for evaluating hybrid learning platforms that offer integrated features for both students and teachers in the primary education domain. Despite EduPetualang's potential to meet these complex demands through its multifunctional design, there has been no empirical assessment of its usability using a standardized instrument like SUS. This represents a critical gap in the current literature—particularly in the context of Bandung Regency, where the implementation of digital learning platforms continues to expand but lacks rigorous usability validation.

EduPetualang is a digital learning platform designed to meet the specific needs of both students and teachers in primary schools. It integrates a variety of educational features, including learning materials, interactive games, a digital reading space, and administrative references for teachers. Unlike platforms built solely on proprietary content, EduPetualang compiles and organizes resources from various existing educational websites, offering users a centralized and structured learning experience. Its multifunctional design is intended to support not just cognitive development but also instructional management.

Despite its promising concept, there has been limited empirical investigation into how users actually experience EduPetualang in real educational settings. Most importantly, there is a need to assess whether the platform meets usability standards that encourage consistent use and effective learning engagement.

Considering the growing reliance on digital learning platforms in primary education, it becomes increasingly important to ensure that such platforms are not only content-rich but also accessible, user-friendly, and well-integrated into the daily practices of both students and teachers. While EduPetualang offers a comprehensive set of features designed to meet these multifaceted needs, its actual usability and acceptance in the real-world context of elementary education remain underexplored. In particular, there has yet to be a structured assessment of how users perceive the platform's ease of use, functionality, and relevance—especially in regional settings such as Bandung Regency, where contextual factors may influence user experience.

This study seeks to contribute to that gap by applying the System Usability Scale (SUS) as a systematic method to evaluate the perceived usability of EduPetualang. Although SUS has been widely employed to assess various digital systems, its application to integrated educational platforms like EduPetualang remains limited. Hence, this research provides a point of novelty by not only examining a specific platform within the underrepresented context of elementary schools in Bandung Regency but also by offering empirical data that can inform improvements in platform design and deployment.

Through this study, we aim to better understand the extent to which EduPetualang is perceived as usable and acceptable by its intended users. The findings are expected to

yield meaningful insights into user interaction with the platform and generate constructive recommendations for enhancing its development and long-term implementation in primary educational environments.

2. METHOD

This study employs a quantitative descriptive research design aimed at measuring the usability and acceptance of the EduPetualang platform among elementary school users. The System Usability Scale (SUS) was selected as the primary instrument because of its reliability, simplicity, and broad applicability in evaluating digital learning systems. The research participants consisted of elementary school teachers from several schools in Bandung Regency. A purposive sampling technique was used to select participants who have actively used EduPetualang for at least one month. The total sample size consisted of approximately 100 teacher participants in the Bandung area.

The SUS questionnaire consists of 10 items with a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The instrument evaluates various aspects of system usability, such as ease of use, complexity, consistency, and confidence in using the platform. The total SUS score is calculated by converting the individual item scores into a composite score ranging from 0 to 100, with higher scores indicating better usability. Data collection was conducted through online surveys distributed via email or platform-integrated feedback tools. Prior to filling out the SUS questionnaire, participants were briefed on the study's purpose and provided informed consent. They were instructed to use EduPetualang as usual for a specified period before responding to the survey to ensure an informed evaluation.

The collected data were analyzed quantitatively using descriptive statistics to determine the average SUS scores and distribution among users. Additionally, subgroup analyses were performed to compare usability perceptions between teachers and students. The results were interpreted based on standard SUS score benchmarks to classify usability levels (e.g., acceptable, marginal, or poor usability).

SUS consists of 10 Likert-scale based statements and covers various key aspects of system usability. Each item in the SUS has been designed to reflect one important dimension in user perception of interactive systems, either positively (odd-numbered items) or negatively (even-numbered items), thus allowing for a more balanced and comprehensive evaluation.

According to Brooke (1996), although SUS is simple and quick to use, it has high validity and reliability for evaluating user experience of digital interfaces, including in the educational context. Therefore, the SUS statements in this study have been contextualized to the EduPetualang platform, but still maintain their original structure and meaning.

The usability evaluation categories in this study, namely effectiveness, efficiency, satisfaction, and control, refer to the ISO 9241-11 (2018) definition and are reinforced by the results of the factor structure study of SUS by Lewis and Sauro (2009) and Bangor et al. (2008), which stated that these dimensions can be represented by grouping SUS items thematically.

Tabel 1. Caption Font for Table

No	Statement	category
1	I think I will use EduPetualang often.	*efficiency*
2	I find EduPetualang too complicated to use.	*Controllability*
3	I find EduPetualang easy to use.	*effectiveness*
4	I feel like I need technical assistance to be able to use EduPetualang.	efficiency
5	I feel the features in EduPetualang are well integrated.	effectiveness
6	I feel that EduPetualang has inconsistencies in its operations.	efficiency

7	I find EduPetualang easy to learn.	effectiveness
8	I find EduPetualang too confusing to use.	Controllability
9	I feel confident when using EduPetualang.	Satisfaction
10	I feel like I need a lot of training before I can use EduPetualang.	Satisfaction

The SUS instrument consists of ten questions, each scored from 1 to 5. 1 means the respondent strongly disagrees, 2 means the respondent disagrees, 3 means the respondent agrees, 4 means the respondent agrees, and 5 means the respondent strongly agrees.

Instrumen SUS terdiri dari sepuluh pertanyaan, masing-masing dengan skor 1 sampai 5. 1 berarti responden sangat tidak setuju, 2 berarti responden tidak setuju, 3 berarti responden setuju, 4 berarti responden setuju, dan 5 berarti responden sangat setuju.

For each odd-numbered question, the score for each question obtained from the user's score will be reduced by 1.

For each even-numbered question, the final score is obtained from the value of 5 minus the question score obtained from the user.

The SUS score is obtained from the sum of the scores for each question which is then multiplied by 2.5.

The rules for calculating the score apply to 1 respondent. For further calculations, the SUS score from each respondent is found for the average score by adding all the scores and dividing by the number of respondents. Here is the formula for calculating the SUS score:

$$\bar{x} = \Sigma xn$$

$\bar{x}$ = average score

Σx = total score

n = number of respondents

The conclusion of how to use the System Usability Scale (SUS) is that after being calculated, the average SUS score of all respondents is obtained. The score is then adjusted to the SUS assessment. In which category are the test results with the average score that has been obtained.

The average SUS score from many studies is 68, so if the SUS score is above 68 it will be considered above average and a score below 68 is below average. If the score you get is below 68, it means there is a problem with usability and needs improvement. However, the final conclusion can also be determined through an assessment as in the following picture.

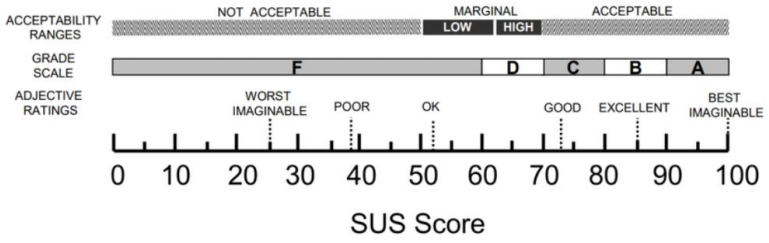

Figure 1. Acceptability range

3. RESULT AND DISCUSSION

Result

The indicator measurement/outer model analysis was conducted to ensure that the measurements are appropriate and valid in determining the relationships between latent variables and their respective indicators. The following figure presents the outer model illustrating the results of the analysis of the relationships between latent variables and their indicators.

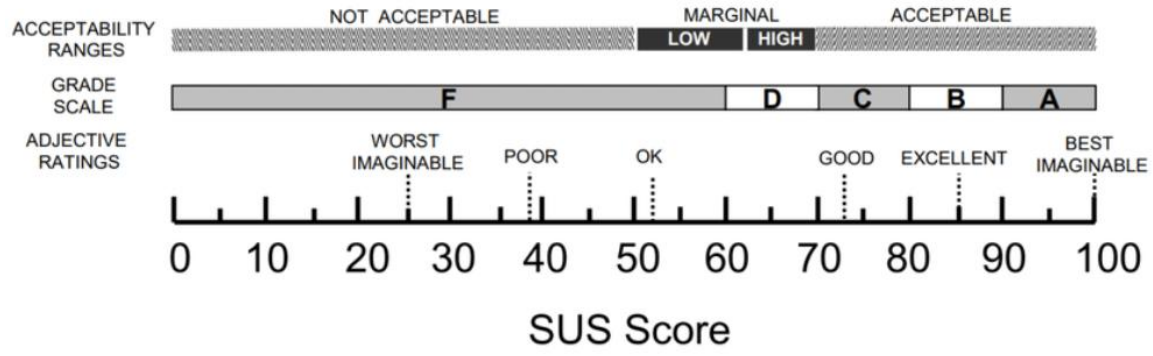

Figure 2. Acceptability ranges

Results and Discussion

This study involved 112 elementary school teachers in Bandung Regency as respondents. These teachers have used the EduPetualang platform in learning activities in their respective school environments. The selection of teachers as respondents was based on the consideration that they are direct users who have direct experience in using EduPetualang features to support the teaching and learning process. Thus, their opinions have high relevance in assessing the extent to which this platform meets the usability and acceptability aspects from the perspective of professional users at the elementary education level. Although demographic data such as age and gender were not explicitly collected, the distribution of the teacher population in this area generally reflects a relatively balanced proportion. This supports the diversity of perspectives in the evaluation, while maintaining the contextual validity of the results of this study.

Table 2. Result of respondens

No	Result data										amount	value
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		(amount x 2.5)
1	3	3	3	3	4	3	3	3	3	3	**31**	**78**
2	4	3	4	3	4	3	4	3	4	3	**35**	**88**
3	3	3	3	3	3	3	3	3	3	3	**30**	**75**
4	4	3	4	3	4	3	4	3	4	3	**35**	**88**
5	4	4	4	4	4	4	4	4	4	4	**40**	**100**
6	4	3	4	3	4	3	4	3	4	3	**35**	**88**
7	4	4	4	4	4	4	4	4	4	4	**40**	**100**
8	4	4	4	4	4	4	4	4	4	4	**40**	**100**
9	4	0	4	0	4	4	4	4	4	4	**32**	**80**
10	4	4	4	4	4	4	4	4	4	4	**40**	**100**
11	4	2	4	2	4	2	3	2	3	1	**27**	**68**
12	4	4	4	4	4	4	4	4	4	4	**40**	**100**
13	4	4	4	4	4	4	4	4	4	0	**36**	**90**
14	4	4	4	3	4	4	4	4	4	3	**38**	**95**
15	4	3	4	4	4	4	4	4	4	4	**39**	**98**
16	3	2	2	1	2	2	2	2	2	2	**20**	**50**
17	4	0	4	0	4	0	4	0	4	0	**20**	**50**

18	4	4	4	2	4	4	4	4	4	2	**36**	**90**
19	3	2	4	2	3	1	3	2	3	1	**24**	**60**
....	3	3	3	3	3	3	3	3	3	3	**30**	**75**
112	4	3	4	3	4	3	4	3	4	3	**35**	**88**
Average score (final result)												**84**

The results of the analysis show that the average System Usability Scale (SUS) score obtained from teachers using the EduPetualang platform is 84. Based on the interpretive classification by Bangor, Kortum, and Miller (2009), this score is in the "Excellent" category, which reflects a very high level of usability. This score indicates that in general users feel that the EduPetualang platform is easy to use, fun, and not technically difficult in the process of using it in an elementary school environment.

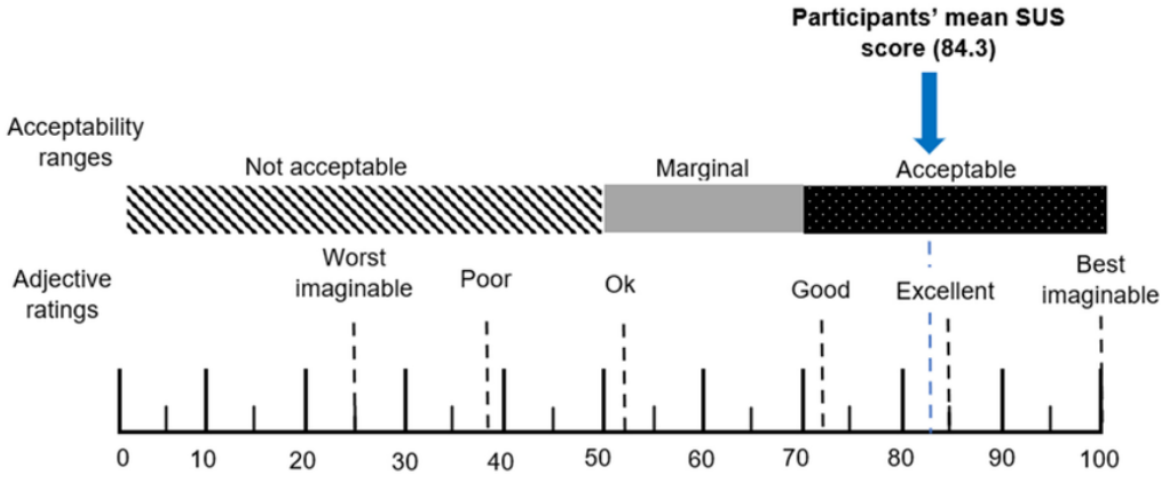

Figure 2. Acceptability ranges

When compared to previous studies that evaluated learning platforms using SUS, this score is classified as very good. For example, several studies in a similar context reported average scores ranging from 65 to 75, which are in the "Good" to "Acceptable" category (Tullis & Stetson, 2004; Lewis & Sauro, 2009). Thus, the score of 84 obtained by EduPetualang indicates that this platform has exceeded the average standard of usability commonly found in other online education systems.

These results also show that EduPetualang has great potential to be applied more widely in elementary education environments, considering that high usability is highly correlated with the level of adoption and acceptance of technology by end users (Nielsen, 1993).

To gain a deeper understanding of user perceptions of the EduPetualang platform, the SUS scores in this study were further analyzed based on four usability categories: effectiveness, efficiency, satisfaction, and control. These categories refer to the definition of usability in ISO

9241-11 (2018) and have been used in various previous usability studies (Bangor et al., 2008; Lewis & Sauro, 2009).

a. Effectiveness

Effectiveness reflects the extent to which users can use EduPetualang to achieve their goals accurately and completely. High positive scores for items such as "the platform is easy to use" and "the features are well integrated" indicate that teachers can understand the flow and functions of EduPetualang quickly and accurately, thus supporting the learning and administration process efficiently.

b. Efficiency

The efficiency dimension relates to the effort and time required for teachers to complete tasks using the platform. The findings indicate that teachers do not feel the need for much technical assistance and do not find significant obstacles in navigating features. This indicates that EduPetualang has been designed with an intuitive interface, thus minimizing the learning time of the system.

c. Satisfaction

The aspect of satisfaction is depicted from statements such as "I feel confident when using the platform" and "I do not feel the need for further training." The majority of respondents showed positive scores on this statement, which means that the user experience while using EduPetualang tends to be pleasant and not mentally burdensome. This sense of satisfaction is an important factor in ensuring the continued acceptance of technology.

d. Control

Finally, the control dimension relates to teachers' perceptions of their control over the system. Low scores on negative items such as "the system is confusing" and "too complicated" indicate that teachers feel they have quite a high level of control over the use of platform features and navigation. This is an indication that the system has avoided unnecessary complexity and is designed with a user-centric approach.

Overall, the high scores evenly distributed across the four dimensions strengthen the finding that EduPetualang has a level of usability that is not only high overall, but also consistent and balanced in the fundamental aspects of usability.

Table 3. average score per category

Pertanyaan	Average	Kategori
Q1	4.87	effectiveness
Q2	1.85	control
Q3	4.87	effectiveness
Q4	1.87	control
Q5	4.88	efficiency
Q6	1.82	control
Q7	4.71	Effectiveness
Q8	1.84	control

Q9	4.78	Effectiveness
Q10	1.90	Satisfaction

Discussion

The average results from 112 respondents showed that the EduPetualang platform scored high on positive items (Q1, Q3, Q5, Q7, Q9), which relate to perceived ease of use, understandability, and system integration, with an average value above 4.7. This finding indicates that in terms of effectiveness and efficiency, this platform has met user expectations in supporting learning and administrative management in elementary schools. This is in line with the findings of Brooke (1996) who emphasized that high scores on odd items indicate strong user perceptions of the feasibility and reliability of the system. Meanwhile, low scores on negative items (Q2, Q4, Q6, Q8, and Q10)—which reflect perceptions of complexity, dependency, and uncertainty in use—indicate that users do not experience significant difficulties in operating the system. This supports the argument of Bangor et al. (2008) that low scores on negative items in the SUS are an important indicator that the system does not burden users cognitively or technically. Thus, user control over the system is in the good category, reinforcing the belief that this platform has a mild learning curve.

However, although the average score is generally very high, the user satisfaction category represented by question Q10 still shows room for improvement. Although still in the good category, the score obtained (an average of 1.90) indicates that although users find the system useful, there is still potential for improvement in the user experience design aspect or the emotional appeal of the platform.

From an overall usability perspective, the average SUS score of 84 places the EduPetualang platform in the "Excellent" category, even approaching the best imaginable level according to the interpretation of the SUS scale by Sauro (2011). This strengthens the argument that this platform has been very well received by teachers as its users at the elementary school level.

4. CONCLUSION

This study aimed to evaluate the usability and acceptance of the EduPetualang platform in elementary schools in Bandung Regency using the System Usability Scale (SUS). Based on responses from 112 teachers, the analysis revealed an average SUS score of 84, which falls into the "excellent" category. This indicates that the EduPetualang platform is perceived as highly usable and acceptable by its users.

The findings demonstrate that the platform meets key usability criteria: effectiveness, efficiency, user control, and user satisfaction with high ratings for ease of use, consistency, and learnability. The low scores on negative SUS items further reinforce the positive reception, indicating minimal confusion or frustration during use.

These results confirm the hypothesis that EduPetualang is a well-accepted and usable digital learning platform for elementary education. This contributes to the growing evidence on the role of integrated educational technology platforms in enhancing teaching and learning experiences.

For future research, it is suggested to expand the evaluation by incorporating more diverse user demographics such as students and school administrators, and by triangulating with qualitative feedback. Additionally, future development of EduPetualang may consider refining user experience design to further enhance satisfaction and long-term engagement

5. ACKNOWLEDGE

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