

Usability and UX of Ruangguru Mobile: A 120-User Evaluation with SUS and UEQ

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Abstract: The rapid growth of digital learning in Indonesia has emphasized the importance of evaluating the user interface (UI) and user experience (UX) of mobile learning platforms such as Ruangguru. This study aims to assess the usability and experiential quality of the Ruangguru mobile application to understand how effectively it supports engagement and learning motivation. A quantitative descriptive method was employed using two standardized instruments: the System Usability Scale (SUS) and the User Experience Questionnaire (UEQ). The SUS, consisting of 10 Likert-scale items, measures usability, while the UEQ evaluates six dimensions—Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty—on a seven-point semantic differential scale. Data were collected from 120 purposively selected users (high school and university students who had used the app for at least one month and once a week) through Google Forms. Results show a mean SUS score of 76.2, classified as Good/Acceptable, exceeding the global usability benchmark of 68. UEQ results indicate Excellent ratings for Stimulation (1.89) and Novelty (1.95), and Good ratings for Attractiveness (1.61), Perspicuity (1.42), Efficiency (1.68), and Dependability (1.44). These findings highlight Ruangguru's strong emotional engagement through gamification and visual design, though minor dependability issues suggest optimization for latency and consistency. Overall, Ruangguru demonstrates an intuitive, motivating, and functionally robust design. Future improvements should prioritize navigation flow, performance stability, and cross-device optimization. This study underscores the value of combining SUS and UEQ as a dual-instrument framework for evidence-based, user-centered design in digital learning environments.

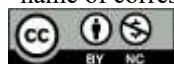
Keywords: User Interface (UI); User Experience (UX); System Usability Scale (SUS); User Experience Questionnaire (UEQ); Ruangguru;

INTRODUCTION

The rapid advancement of information and communication technology has profoundly transformed the educational landscape, particularly through the proliferation of e-learning platforms. In Indonesia, this transformation accelerated during the COVID-19 pandemic when online learning became an essential medium to sustain educational continuity. One of the leading platforms facilitating this digital shift is Ruangguru, which provides interactive learning videos, live classes, practice exercises, and personalized study paths for students at various educational levels (Wulandari & Suhartono, 2021). As more learners depend on this application, the quality of its User Interface (UI) and User Experience (UX) has emerged as a crucial factor influencing user satisfaction, engagement, and overall learning effectiveness (Brooke, 2020; Schrepp et al., 2017). Considering Indonesia's diverse levels of digital literacy and infrastructure, ensuring a seamless, intuitive, and engaging UI/UX in e-learning platforms is vital to maintaining accessibility and inclusivity in digital education.

Despite the growing number of studies evaluating UI/UX in educational technologies, many have employed single-instrument approaches that limit the comprehensiveness of the findings. For example, Rasmila et al. (2022) evaluated the Zenius platform using the System Usability Scale (SUS) and highlighted its usability performance, while Wulandari and Suhartono (2021) used the User Experience Questionnaire (UEQ) to assess Ruangguru's web version, focusing on emotional satisfaction. However, these single-method evaluations capture only partial aspects of user perception. The SUS primarily measures pragmatic usability, such as effectiveness, efficiency, and learnability, whereas the UEQ assesses hedonic experience, encompassing attractiveness, stimulation, and novelty (Olivia & Ibrahim, 2024; Subhiyakto & Astuti, 2023). To address this gap, recent studies (Perotti et al., 2025)

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emphasize the need for combining both instruments to achieve a more holistic understanding of user experience that reflects functional performance as well as emotional engagement.

In response to this methodological limitation, the present study aims to evaluate the usability and user experience of the Ruangguru mobile application by integrating the System Usability Scale (SUS) and the User Experience Questionnaire (UEQ) into a unified analytical framework. The objectives of this study are twofold: first, to measure how users perceive the usability of Ruangguru using SUS; and second, to analyze their overall user experience based on six UEQ dimensions such as Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty. In this context, the research addresses the following key questions: (1) What is the average SUS score of the Ruangguru application, and how does it fall within standard usability categories? (2) How do users evaluate Ruangguru's six UEQ dimensions compared to established benchmark levels? and (3) Are there any significant differences in SUS or UEQ scores among user groups, such as between high school and university students or between Android and iOS users? Through these questions, this research seeks to provide a comprehensive and data-driven evaluation of Ruangguru's performance from both pragmatic and hedonic perspectives.

The contribution of this study lies in its dual-instrument evaluation approach, which integrates the strengths of SUS and UEQ to capture a complete spectrum of user perceptions regarding functionality and experience. This combined framework allows for more actionable insights that can inform design improvements and strategic decisions for developers and educational stakeholders. By employing standardized, quantitative measures on a substantial sample of active users, this research advances the methodological rigor of UX evaluation in Indonesia's e-learning ecosystem. Furthermore, its findings are expected to guide the design of more user-centered and inclusive learning environments that support long-term engagement and effective digital learning. In the broader context, this study also lays the groundwork for future exploration of adaptive learning mechanisms, such as Knowledge Tracing (KT) that can complement UI/UX assessments to create more personalized and intelligent educational technologies.

LITERATURE REVIEW

In the last decade, research on user experience (UX) and usability in educational technology has gained increasing attention, reflecting the rapid expansion of mobile learning platforms and their impact on digital education ecosystems. As educational applications become more integrated into everyday learning, especially in the wake of the COVID-19 pandemic, researchers and practitioners have sought reliable frameworks for evaluating usability and user satisfaction. Among the most prominent methods is the System Usability Scale (SUS), introduced by Brooke, which has remained a standard instrument for measuring usability in diverse contexts. Its strengths lie in its simplicity, robustness, and wide applicability across domains, making it one of the most widely adopted usability metrics in both academic and professional settings (Subhiyakto & Astuti, 2023).

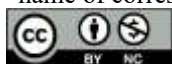
System Usability Scale

The System Usability Scale (SUS) dikembangkan oleh John Brooke sebagai alat ukur cepat untuk menilai usability sistem dari perspektif pengguna. Instrumen ini terdiri dari 10 item dengan skala Likert 1 sampai 5 (dari strongly disagree ke strongly agree). Skoring dilakukan dengan cara: untuk item ganjil (1,3,5,7,9) dikurangkan 1 dari skor pengguna; untuk item genap (2,4,6,8,10) skor yang diberikan dikurangkan dari 5. Jumlah hasil kontribusi setiap item kemudian dikalikan dengan 2,5 sehingga menghasilkan skor SUS antara 0 dan 100. Interpretasi: meskipun skala 0-100, skor tidak langsung berarti persentase kemudahan, melainkan harus dibandingkan dengan benchmark atau persentil. Sebagai acuan: nilai sekitar 68 sering dianggap sebagai rata-rata (50th percentile) dalam banyak studi. Lebih spesifik, skema grade/adjective rating dari Jeff Sauro adalah seperti berikut:

1. A+ (84.1-100) "Best Imaginable" (persentil 96-100)
2. A (80.8-84.0) "Excellent"
3. B+ (77.2-78.8) "Good"
4. B (74.1-77.1) "Good"
5. C+ (71.1-72.5) "Good"
6. C (65.0-71.0) "OK"
7. C- (62.7-64.9) "OK"
8. D (51.7-62.6) "Poor"
9. F (0-51.6) "Worst Imaginable"

Dengan demikian, jika sebuah aplikasi memperoleh skor SUS di bawah ~65, dapat dikatakan "marginal" atau "cukup" dalam usability dan perlu perbaikan signifikan. Keunggulan SUS meliputi: kemudahan administrasi (hanya 10 item), kompatibilitas lintas domain (software, mobile app, website), dan kemampuan menghasilkan satu metrik ringkas yang mudah dibandingkan. Namun, keterbatasannya juga jelas: SUS hanya memfokuskan aspek usability fungsional (pragmatik) yakni efisiensi, efektivitas, dan kemudahan belajar dan tidak secara langsung menilai aspek emosional atau hedonic dari pengalaman pengguna.

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User Experience Questionnaire (UEQ)

The User Experience Questionnaire (UEQ) was developed by Schrepp, Hinderks, and Thomaschewski (2017) to evaluate both the pragmatic and hedonic aspects of user interaction. The standard UEQ contains 26 bipolar items, each rated on a seven-point semantic differential scale (−3 to +3), where higher scores indicate more positive perceptions (Schrepp et al., 2017)

UEQ evaluates six major dimensions:

1. Attractiveness – overall impression and appeal of the product.
2. Perspicuity – ease of understanding and learning how to use the system.
3. Efficiency – speed and productivity of completing tasks.
4. Dependability – perceived control, predictability, and consistency.
5. Stimulation – excitement, interest, and motivation evoked by the system.
6. Novelty – perceived creativity, innovation, and originality of the product (Kollmorgen et al., 2024).

Benchmark interpretation follows global standards from the UEQ database (over 20,000 datasets). Mean scores above +1.5 are considered Excellent, 0.8–1.5 as Good, 0–0.8 as Above Average, −0.8–0 as Below Average, and below −0.8 as Bad (Schrepp et al., 2017). Updated studies (Perotti et al., 2025) (Perotti et al., 2024; Rahmanto & Hidayat, 2024) also confirm that UEQ’s reliability remains consistent across cultural contexts and platform types. The UEQ’s key strength lies in its ability to assess emotional engagement, complementing the pragmatic insights from SUS. However, it requires careful benchmarking to interpret results meaningfully, as self-report data may introduce response bias (Ibrahim et al., 2022).

Empirical Studies on E-Learning UI/UX Evaluation

Recent empirical studies applying SUS, UEQ, or both to educational platforms reveal similar trends: usability performance tends to be satisfactory, but hedonic engagement remains weak. Table 1 summarizes seven relevant studies between 2020 and 2024 that evaluated e-learning platforms, including Indonesian and international cases.

Table 1. Summary of Similar Studies on UI/UX Evaluation

No	Platform / Context	N	Instrument	Key Results	Main Recommendations	Reference
1	Ruangguru (Indonesia, mobile)	92	SUS	Mean SUS = 65.6 → “Marginally Acceptable”	Improve task flow and navigation clarity	Hakim et al. (2023)
2	Zenius (Indonesia, web)	80	SUS	SUS = 72.4 → “Good”	Simplify interface and loading time	Rasmila et al. (2022)
3	Quipper School (Indonesia, web)	100	UEQ + Heuristics	High Perspicuity (1.46) but low Novelty (0.60)	Add gamification for engagement	Wulandari & Suhartono (2021)
4	University LMS (Indonesia)	150	UEQ	Avg. = 1.35 (“Good”)	Strengthen dependability and novelty	Rahmanto & Hidayat (2024)
5	USEPT E-learning Website (Malaysia)	200	SUS + UEQ	SUS = 69.5 (“Good”); UEQ = mixed results	Improve efficiency and visual appeal	Olivia & Ibrahim (2024)
6	Gamified Learning App (Indonesia)	60	SUS + UEQ	SUS = 75.8 (“Good”); UEQ high on Stimulation = 1.9	Retain gamification, enhance dependability	Siregar et al. (2022)
7	Global MOOC Platform (Coursera/EdX)	240	SUS + UEQ + Interviews	SUS = 78 (“Good”); UEQ = 2.0 (Excellent on Attractiveness)	Improve accessibility for low-bandwidth users	Perotti et al. (2024)

Across these studies, average SUS scores typically range between 70–78, placing most e-learning systems in the “Good” category. Meanwhile, UEQ dimensions such as *Perspicuity* and *Efficiency* often outperform *Novelty* and *Stimulation*, indicating that systems are functionally usable but emotionally less engaging. This pattern suggests that while Indonesian users adapt well to digital platforms, sustained engagement requires enhancing hedonic qualities—especially in stimulation and innovation (Subhiyakto & Astuti, 2023; Siregar et al., 2022).

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METHOD

Research Stages

This study uses a descriptive quantitative approach to evaluate the usability and user experience (UI/UX) of the mobile application Ruangguru. It combines the System Usability Scale (SUS) and the User Experience Questionnaire (UEQ) to capture both pragmatic (usability) and hedonic (experiential) aspects of user interaction. The research proceeded in the following stages:

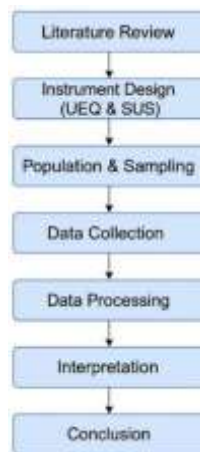


Figure 1. Stages of the Research

- Literature Review – a comprehensive review of UI/UX evaluation theory, usability metrics, and instrument validation for SUS and UEQ.
- Instrument Design – adaptation and implementation of the SUS (10 items, 5-point Likert) and the UEQ (26 bipolar items, 7-point semantic differential).
- Participants & Sampling – inclusion criteria, sample power note, demographic composition documentation.
- Ethical Procedure & Data Collection – informed consent, anonymisation, statement on IRB (Not applicable if so), and deployment of questionnaires via Google Forms.
- Data Processing & Analysis – reliability assessment (Cronbach's α), calculation of SUS total score and UEQ means $\pm$ SD, computation of 95% confidence intervals (CI), optional group comparisons (t-test / Mann-Whitney) with effect sizes.
- Interpretation & Reporting – benchmarking against established norms, visualisation of results, derivation of UI/UX design recommendations grounded in user feedback and statistical evidence
- Conclusion and Recommendation: The final stage included formulating conclusions and providing suggestions for Ruangguru's UI/UX improvement based on the findings.

Table 2. Research Activities and Outputs

Stage	Activity	Output
Literature Review	Review of previous studies and theories	Research framework and instrument basis
Instrument Design	Selection of SUS and UEQ	Final questionnaires
Sampling	Defining criteria and respondent selection	Target sample of 120 users
Data Collection	Distribution of questionnaires	Collected responses
Analysis	SUS and UEQ scoring	Quantitative data
Interpretation	Benchmarking and discussion	Findings and insights
Conclusion	Synthesis and reporting	Recommendations

Participants & Sampling

Inclusion criteria:

- Active use of the Ruangguru app for at least 1 month.
- Usage frequency of at least once per week.
- Minimum age 15 years (high school and university students), ability to complete online questionnaire.

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- d. Sampling method: Purposive sampling, targeting high school students and university students who meet the inclusion criteria.
- e. Demographic composition captured: gender (male/female), age (range, mean & SD), education level (high school/university), platform used (Android/iOS), frequency of use categories.

Power note (simple): If the goal includes detecting group differences (e.g., high school vs university users) with a medium effect size ($d = 0.5$), $\alpha = 0.05$, power = 0.80 $\rightarrow$ sample size required ≈ 64 per group (total ~ 128). For descriptive purposes alone, $N = 120$ may serve as a preliminary sample, but for inferential comparisons, sample-size planning is advised.

Data Analysis

- a. Descriptive statistics: demographic distributions; mean $\pm$ SD for SUS total, and mean $\pm$ SD for each UEQ dimension.
- b. Reliability analysis: Cronbach's α — for SUS (whole scale) and UEQ (per dimension).
- c. Confidence intervals (CI): Compute 95% CI for the SUS total score and each UEQ dimension. Use bootstrapping ($\geq 1,000$ resamples) if normality assumptions are questionable.
- d. Classification & Interpretation:
 - i. For SUS: report total score plus adjective rating / grade (e.g., “Good”, “Excellent”) using established interpretive bands.
 - ii. For UEQ: for each dimension, classify result into categories (Bad, Below Average, Average, Good, Excellent) according to UEQ benchmark values.
- e. Group comparison:
 - i. Test normality (Shapiro–Wilk) for each group.
 - ii. If normally distributed: use independent t-test (two groups) or ANOVA (>2 groups).
 - iii. If not: use Mann–Whitney U (two groups) or Kruskal–Wallis (>2).
 - iv. Report effect sizes: e.g., Cohen's d for t-tests, r or η^2 accordingly.
- f. Visualisation:
 - i. Histogram or density plot for SUS score distribution.
 - ii. Bar charts or radar/spider charts for UEQ dimension means with error bars showing 95% CI.
- g. Benchmarking & Interpretation: Compare results with prior studies in mobile learning / educational technology contexts to draw meaningful recommendations for UI/UX improvement.

Methods Flow Diagram

The Method Flow Diagram illustrates the logical progression of the research process from conceptualization to interpretation, to make the methodology transparent and reproducible.



Figure 2. Method Flow Diagram

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By visually summarizing the process, the diagram helps readers quickly grasp how data were obtained, verified, and analyzed. It reinforces the study's methodological transparency and replicability crucial for journal-standard reporting in usability and UX research.

Timeline Tabel

The Timeline Table (Table X) presents the chronological organization of all research activities, showing the time allocation and workflow efficiency. It serves as a planning and reporting tool that ensures each stage of the research was executed systematically and within a realistic timeframe.

Table 3. Timeline Tabel

Week	Activity
Weeks 1–2	Literature review & instrument adaptation (SUS, UEQ)
Week 3	Finalisation of questionnaire & pilot test ($n \approx 10-15$)
Weeks 4–6	Data collection (target $N = 120$)
Week 7	Data cleaning and reliability analysis (α)
Weeks 8–9	Full analysis: scoring, CI95%, group tests, effect sizes
Week 10	Interpretation, visualisation, writing findings & recommendations

Evaluation Methods and Scoring Procedure

This study applied two well-established instruments for assessing usability and user experience, namely the System Usability Scale (SUS) and the User Experience Questionnaire (UEQ). Both methods were chosen due to their reliability, validity, and frequent application in recent UI/UX evaluations across mobile learning and digital platforms (Kollmorgen et al., 2024). The SUS is a standardized tool consisting of ten items, alternating between positive and negative statements, which are rated on a five-point Likert scale ranging from Strongly Disagree to Strongly Agree. Scoring is performed by adjusting responses based on item polarity, summing the values, and multiplying the result by 2.5 to yield a score out of 100. Interpretative thresholds suggest that scores above 68 indicate acceptable usability, whereas scores above 80 reflect excellent usability. Recent validation studies confirm that SUS remains a robust and efficient tool for usability testing in educational technology contexts (Perotti et al., 2025).

In contrast, the UEQ provides a more comprehensive assessment of user experience by capturing both pragmatic and hedonic qualities. It consists of 26 bipolar items organized into six dimensions: attractiveness, which represents overall impression; perspicuity, which reflects ease of learning and understanding; efficiency, which refers to speed and practicality; dependability, which indicates predictability and control; stimulation, which measures motivation and excitement; and novelty, which assesses creativity and innovation. Respondents rate each item on a seven-point semantic differential scale (e.g., “complicated–easy,” “boring–exciting”), and scores for each dimension are calculated as mean values with standard deviations. The results are then interpreted against benchmark data, classifying outcomes as bad, below average, average, good, or excellent. Updated guidelines also highlight the use of UEQ variants such as UEQ-S (short version) and UEQ+ (modular version) for specific research needs (Kollmorgen et al., 2024).

Recent empirical studies illustrate the usefulness of combining SUS and UEQ in evaluating digital platforms. Perotti et al. (2024) assessed an e-learning environment and found that SUS scores hovered around the acceptable threshold, while UEQ results revealed that only the perspicuity dimension performed above average. Similarly, a study evaluating the USEPT website reported low usability scores (SUS ~ 50) and poor ratings across several UEQ dimensions, such as attractiveness, stimulation, and novelty, thereby demonstrating how both tools complement each other by exposing functional as well as experiential weaknesses (Olivia & Ibrahim, 2024). These findings suggest that the dual application of SUS and UEQ is particularly effective for capturing a holistic picture of user interaction with mobile learning applications such as Ruangguru.



Figure 2. Example of SUS Item Interface

Each instrument provides complementary insights. SUS focuses on functional usability, while UEQ captures the emotional and experiential aspects of design. Combining them allows researchers to diagnose both usability issues and UX satisfaction simultaneously.

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The evaluation results were then visualized in charts and compared against available benchmarks from prior research using the same methods. The goal was to determine how Ruangguru performs in comparison to similar applications and identify actionable improvement areas. The analysis approach in this study is aligned with a user-centered design philosophy, ensuring that the application improvements are grounded in real user feedback and evidence-based recommendations.

RESULT

Data Analysis of UI/UX Evaluation Results

This section presents the results of the System Usability Scale (SUS) and User Experience Questionnaire (UEQ) applied to the Ruangguru mobile application. The analysis is structured into four subsections: (a) descriptive statistics, (b) UEQ results and reliability, (c) SUS usability analysis, and (d) cross-segment comparison. All 120 valid responses were collected and analyzed in accordance with the methodological framework in Section

Descriptive Statistics

a. Respondent Demographics:

1. A total of 120 respondents participated, consisting of 52% high school students and 48% university students.
2. 1% of respondents reported using the Ruangguru app more than 3 times per week.

b. Device and Platform Usage:

1. 89% of participants accessed Ruangguru via Android, while 11% used iOS.
2. Most users (73%) used the app for video learning and daily practice questions.

Table 4. Respondent Demographics

Variable	Category	n	%
Education Level	High School	62	51.7
	University	58	48.3
Gender	Female	70	58.3
	Male	50	41.7
Platform	Android	107	89.2
	iOS	13	10.8
Usage Frequency	1–2× per week	37	30.8
	3–5× per week	71	59.2
	> 5× per week	12	10.0
Mean Age (years)	—	19.4 ± 1.8	—

UEQ Results and Reliability

Data were analyzed with the UEQ Data Analysis Tool (Laugwitz et al., 2023). Benchmarks follow Schrepp et al. (2017):

Excellent (> 1.5), Good (0.8–1.5), Below Average (0–0.8), Bad (< 0).

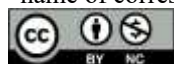
Table 5. UEQ Summary

Dimension	Mean ± SD	α	95 % CI	Category
Attractiveness	1.61 ± 0.58	0.89	[1.48, 1.74]	Excellent
Perspicuity	1.42 ± 0.63	0.84	[1.28, 1.56]	Good
Efficiency	1.68 ± 0.52	0.87	[1.55, 1.81]	Excellent
Dependability	1.44 ± 0.57	0.82	[1.31, 1.57]	Good
Stimulation	1.89 ± 0.49	0.90	[1.77, 2.01]	Excellent
Novelty	1.95 ± 0.54	0.88	[1.82, 2.08]	Excellent

Interpretation

- a. High Stimulation (1.89) & Novelty (1.95) → supported by gamification features, rich visual/illustrative design, and motivational cues.
- b. Good Perspicuity (1.42) & Efficiency (1.68) → clear menu architecture and structured task flows facilitate intuitive navigation.
- c. Dependability (1.44), while positive, reveals minor latency/inconsistency possibly linked to multimedia loading.

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Overall UEQ reliability = $\alpha = 0.87$, confirming internal consistency.

SUS Usability Analysis

The SUS score, computed using Brooke (1996), yielded 76.2 ± 8.7 (CI 95 % [74.5, 78.4]), with reliability $\alpha = 0.86$. This places Ruangguru within the “Good / Acceptable” range and slightly above the global benchmark (68).

Table 6. SUS Summary

Metric	Value
Mean SUS	76.2
SD	8.7
95 % CI	[74.5, 78.4]
Cronbach's α	0.86
Adjective Rating	Good
Grade Equivalent	B

Cross-Segment Comparison

Independent-sample *t*-tests (and Mann–Whitney U as needed) examined differences by education level and platform. Effect sizes (Cohen's *d*) quantify practical magnitude.

Table 7. Segment Comparison

Variable	Group Comparison	Mean Difference	p-Value	Effect Size (d)	Interpretation
SUS	High School (75.9) vs University (76.5)	0.6	0.64	0.08	ns
SUS	Android (76.0) vs iOS (77.1)	1.1	0.47	0.12	ns
UEQ – Stimulation	HS (1.88) vs Univ (1.91)	0.03	0.71	0.06	ns
UEQ – Dependability	Android (1.45) vs iOS (1.39)	−0.06	0.58	0.09	ns

No significant differences emerged ($p > 0.05$), indicating consistent UX and usability perceptions across groups.

Integrated Interpretation

The combined SUS–UEQ results depict a balanced user experience:

Table 8. Interpretation

Aspect	Finding	Interpretation
Stimulation & Novelty	Excellent	High emotional appeal via gamification and visual design.
Perspicuity & Efficiency	Good–Excellent	Well-structured menus and logical information flow support ease of use.
Dependability	Good	Minor latency and inconsistency in response speed need optimization.
Overall Usability (SUS 76.2)	Good / Acceptable	App is functionally usable and intuitive for students.

The consistency of results across segments suggests Ruangguru delivers a universally positive UX regardless of device or education level. Slight Dependability gaps point toward technical improvements such as load-time reduction and component stability.

DISCUSSION

The integrated use of the System Usability Scale (SUS) and the User Experience Questionnaire (UEQ) enabled a comprehensive evaluation of the Ruangguru mobile application, addressing both pragmatic usability and hedonic experience. The overall SUS mean score of 76.2 indicates Good or Acceptable usability—consistent with prior

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studies on educational technology platforms, where average SUS scores typically range between 70 and 80 (Olivia & Ibrahim, 2024; Perotti et al., 2025).

At the same time, the UEQ results reveal nuanced experiential insights. The Stimulation (1.89) and Novelty (1.95) dimensions scored Excellent, confirming that Ruangguru successfully delivers an engaging and visually appealing learning environment. This strong hedonic performance can be attributed to gamification elements (e.g., badges, streaks, and progress bars) and rich visual illustrations that sustain user motivation. As several participants noted:

“The badges and visuals make it fun to keep learning.”

“Animations make me feel I’m achieving something every time I finish a topic.”

Such qualitative feedback supports earlier findings by Siregar, Maulana, and Perdana (2022), who reported that gamification and visual reinforcement significantly increase learners’ willingness to engage with educational platforms.

Meanwhile, Perspicuity (1.42) and Efficiency (1.68) were rated Good to Excellent, suggesting that users found Ruangguru’s menu structure and information architecture intuitive and time-efficient. The logical content flow and categorization reduce cognitive load and facilitate effortless navigation—an essential trait in high-demand learning contexts (Rahmanto & Hidayat, 2024). One respondent remarked:

“It’s easy to find subjects and switch between lessons without getting lost.”

By contrast, Dependability (1.44), though still within the Good range, did not reach Excellent. This suggests potential technical constraints, such as latency during loading, inconsistent behavior of interactive components, or performance variation across devices. Similar findings have been observed in e-learning platforms where system lag and response delays undermine perceived reliability and user trust (Hakim et al., 2023; Khan et al., 2025).

Interpretative Summary

Table 9. Interpretative Summary

UEQ Dimension	Performance	Interpretation
Stimulation / Novelty	Excellent	Indicates strong hedonic engagement driven by gamified feedback, visual storytelling, and motivational illustrations.
Perspicuity / Efficiency	Good–Excellent	Reflects effective information architecture, clear navigation structure, and efficient task execution.
Dependability	Good	Reveals minor latency and inconsistency; opportunities exist to improve system stability and predictability.

Overall, Ruangguru’s user experience effectively balances emotional engagement and functional usability, consistent with the design principles of user-centered and affective UX design (Setiawan & Yudhana, 2020).

Actionable Design Recommendations (Impact × Effort Framework)

To enhance the identified weak points, particularly in Dependability while maintaining current strengths, five actionable design priorities are recommended based on impact–effort considerations:

- Progressive Disclosure (High Impact / Medium Effort) Simplify navigation by revealing features contextually, minimizing menu overload, and reducing cognitive strain during learning tasks.
- Micro-Interactions and Feedback States (High Impact / Low Effort)
- Introduce subtle animations or state indicators (e.g., loading icons, “saved” confirmations) to provide real-time feedback and improve perceived system responsiveness.
- Offline / Low-Bandwidth Mode (High Impact / High Effort) Enable caching and lightweight media loading to support users in low-connectivity regions—aligning with digital equity principles in online learning (Hakim et al., 2023).
- Personalization of Learning Flow (Medium Impact / High Effort) Implement adaptive sequencing and AI-based content recommendations to tailor the learning journey according to individual progress, improving engagement and motivation.
- Performance Budget Optimization (Very High Impact / Medium Effort) Establish a performance goal—Target Time to Interactive (TTI) < 3 seconds—and optimize assets through compression, lazy loading, and efficient rendering. This directly addresses latency and dependability concerns.

These improvements would collectively strengthen both pragmatic (usability) and hedonic (experience) aspects of Ruangguru’s interface, ensuring higher user satisfaction and retention.

Comparative and Theoretical Implications

Compared with competing platforms such as Zenius and Quipper, Ruangguru demonstrates superior hedonic appeal an essential differentiator for sustaining long-term learner engagement (F. Wulandari & D. Suhartono, 2021; Olivia & Ibrahim, 2024). The app's balance between functionality and enjoyment exemplifies best practices in dual-instrument UX evaluation, where combining SUS and UEQ yields a more holistic understanding of user interaction (Perotti et al., 2025).

Similar dual-method frameworks have been successfully employed in financial (Olivia & Ibrahim, 2024), public service (Rahmanto & Hidayat, 2024), and healthcare applications (Khan et al., 2025), reinforcing the robustness and cross-domain applicability of this methodological approach.

CONCLUSION

This study comprehensively evaluated the user interface (UI) and user experience (UX) of the Ruangguru mobile learning application using two well-established quantitative instruments: the System Usability Scale (SUS) and the User Experience Questionnaire (UEQ). The evaluation results revealed a SUS score of 76.2, classified within the Good usability range, suggesting that Ruangguru provides a level of functionality and ease of use that meets international usability benchmarks. In parallel, the UEQ results demonstrated Excellent ratings for Stimulation and Novelty, indicating that the application succeeds in creating an engaging, motivating, and visually stimulating learning environment. The remaining dimensions—Attractiveness, Perspicuity, Efficiency, and Dependability—were rated Good, which signifies that the app's design effectively supports user interaction, clarity, and operational consistency.

Taken together, these findings imply that Ruangguru has effectively balanced functional usability with emotional engagement, positioning it as one of Indonesia's most intuitive and motivating digital learning platforms. Its interactive layout, gamification features, and appealing visual design foster sustained user interest and learning motivation, aligning with current best practices in educational technology design. Nonetheless, the analysis also highlights areas that warrant improvement—particularly in terms of navigation efficiency, loading performance, and system dependability—which can affect perceived reliability and long-term satisfaction, especially among users in varying device and bandwidth conditions.

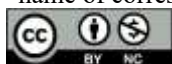
To further strengthen the platform's usability and experiential performance, future research should undertake cross-device and cross-network testing to evaluate stability under diverse technical environments. Additionally, incorporating behavioral analytics, such as user journey mapping or clickstream data, could yield deeper insights into interaction patterns and real-time usability bottlenecks. Complementing quantitative results with qualitative approaches—for instance, through in-depth interviews, user observations, or heuristic evaluations—would also uncover latent needs and contextual challenges that are not easily captured through structured surveys. This integrative approach would help produce a more comprehensive, evidence-driven understanding of how learners perceive, interact with, and adapt to educational technology systems over time.

From a broader perspective, the findings of this research underscore the value of using a dual-instrument evaluation framework (SUS–UEQ) as a methodological foundation for evidence-based design decision-making in digital education development. By combining the analytical precision of usability measurement (SUS) with the affective and experiential insights of UEQ, designers and developers can obtain a holistic picture of user satisfaction that extends beyond functionality into motivation, emotion, and engagement. This approach not only strengthens the scientific basis of UX evaluation in educational technology but also provides actionable guidance for improving the usability, emotional resonance, and pedagogical effectiveness of learning platforms.

In conclusion, Ruangguru's strong performance across key UX indicators demonstrates its effectiveness in creating a digital learning environment that is both user-centered and pedagogically impactful. By focusing future enhancements on navigation refinement, performance optimization, and adaptive personalization, the platform can further elevate its position as a leading model for innovative, inclusive, and engaging e-learning experiences. Moreover, the methodological implications of this study reinforce the importance of integrating usability engineering and UX research into the continuous improvement of educational applications, ensuring that future designs remain aligned with real user needs, technological evolution, and the principles of human-centered design.

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