Journal of Curriculum Studies Research

https://curriculumstudies.org

E-ISSN: 2690-2788

Volume: 8 Issue: 1 2026

pp. 388-407

User Experience Analysis of a National Instructional Platform for Self-Learning and Competency Improvement: A Teacher's Perspective

Nuur Wachid Abdul Majid*[a], Dinda Alya Maghfira[a], Reisa Aulia Sodikin[a], Sofyan Iskandar[b], & Mohamed Nor Azhari Azman[c]

* Corresponding author
Email: nuurwachid@upi.edu
a. Undergraduate of Information System and Technology Education, Kampus UPI di Purwakarta, Universitas Pendidikan Indonesia, Bandung, Indonesia.
b. Undergraduate of Elementary School Teacher Education, Kampus UPI di Purwakarta, Universitas Pendidikan Indonesia, Bandung, Indonesia.
c. Department Engineering Technology, Faculty of Technical and Vocational, Sultan Idris Education University, Tanjung Malim, Perak, Malaysia.

Article Info
Received: November 16, 2025
Accepted: April 26, 2026
Published: May 5, 2026

10.46303/jcsr.2026.20

How to cite
Majid, N. W. A., Maghfira, D. A., Sodikin, R. A., Iskandar, S., & Azman, M. N. A. (2026). User Experience Analysis of a National Instructional Platform for Self-Learning and Competency Improvement: A Teacher's Perspective. *Journal of Curriculum Studies Research*, 8(1), 388-407.
https://doi.org/10.46303/jcsr.2026.20

ABSTRACT
Continuous professional development is vital for educators in the digital era. To support this, Indonesia's Ministry of Education, Culture, Research, and Technology launched the Platform Merdeka Mengajar, a national platform for teachers' self-directed learning. This study examines teachers' user experience (UX) with PMM using the User Experience Questionnaire (UEQ). A quantitative survey was administered to 250 active users nationwide, and the data were analyzed using descriptive statistics, confidence intervals, benchmarking against international UEQ datasets, and Cronbach's alpha to assess reliability. Results indicate positive user perceptions across all six UEQ dimensions, with Dependability and Attractiveness rated highest, underscoring the platform's reliability and engagement. Novelty scored lowest, indicating limited perceived innovation. Overall, PMM demonstrates effective, dependable, and user-friendly design but requires innovation to sustain engagement. These findings inform policymakers and developers on optimizing national digital learning ecosystems through user-centered design improvements.

KEYWORDS
User experience; Platform Merdeka Mengajar; Teacher competence; E-learning; UX evaluation; UEQ.

INTRODUCTION

Education has undergone transformative changes to meet the evolving demands of the 21st century and stakeholders' need to acquire relevant competencies. The shift from traditional to digital learning requires teachers to develop new pedagogical skills to effectively integrate technology into teaching and learning processes (Almasco, 2023; Herlandy et al., 2020; Tamimi, 2024). 21st-century education demands comprehensive reforms in curriculum, teacher professional development, and collaborative learning ecosystems, as well as technological adaptation, to ensure alignment with industry and societal needs (Herlandy et al., 2020; Kabir & Miah, 2022; Majid et al., 2020; Mudaly, 2025). The development of digital literacy and higher-order thinking skills (HOTS) has also become a crucial component in modern educational ecosystems, as these competencies enable educators and learners to effectively engage with technology-enhanced learning environments (Begimbetova et al., 2025; Valentín Melgarejo et al., 2025). These transformations require continuous policy innovation and strengthening of human resources and digital infrastructure (Ajani, 2024; Alahmad et al., 2021; Utami et al., 2021).

In Indonesia, the *Merdeka Belajar* policy, launched by the Ministry of Education, Culture, Research, and Technology, aims to improve teacher quality and learning outcomes by fostering innovation, flexibility, and technology integration (Prasetyaningsih et al., 2024). Teacher professional development has been identified as a critical factor influencing instructional effectiveness and competency development in digital learning environments (Kholifah et al., 2024). To this end, the government developed *Platform Merdeka Mengajar* (PMM), a national instructional platform designed to support self-paced learning, professional training, and resource sharing among teachers. PMM provides structured learning modules, digital classrooms, video tutorials, and assessment tools to empower teachers to enhance their competencies continuously. Adopting large-scale digital training through PMM reflects the government’s efforts to make teacher development more accessible, cost-efficient, and equitable across regions (Arnes et al., 2023). Furthermore, the platform motivates teachers to actively engage with and complete the available learning materials, thereby fostering continuous professional development (Aulia et al., 2023; Dehbi et al., 2023). Prior to this digital transformation, most teacher training and capacity-building activities were conducted offline through in-house training sessions (Caswita & Kristivan, 2022; Raharjo et al., 2023). However, implementing the online system has posed challenges, particularly in areas with limited internet connectivity, unreliable electricity, and geographical constraints (Anggraini & Winarti, 2023). Additionally, disparities in teachers' digital competence, ranging from highly proficient to struggling with technology, affect the platform's overall effectiveness (Lock et al., 2021; Ghazali et al., 2022; Pratama et al., 2022; Zahra & Majid, 2023). This variation in digital readiness aligns with instructional design theory, which emphasizes how prior experience and contextual factors influence technology adoption (Richey & Klein, 2014). Therefore, understanding how teachers

perceive and interact with PMM is essential to ensuring that digital transformation in education leads to meaningful learning experiences and sustainable teacher development.

The theoretical foundation of this study draws on established UX frameworks that conceptualize user experience as a multidimensional construct. Hassenzahl (2003) distinguishes between pragmatic quality, which refers to a product's ability to support users in achieving their goals efficiently and effectively, and hedonic quality, which encompasses aspects of stimulation, identification, and aesthetic appeal. Similarly, Nielsen (1994) proposed five core usability attributes, namely learnability, efficiency, memorability, error prevention, and satisfaction, that collectively define the quality of interaction between users and digital systems. These frameworks informed the selection of the User Experience Questionnaire (UEQ) as the primary instrument in this study. The UEQ operationalizes UX across six dimensions, namely Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty, which correspond directly to pragmatic qualities (Perspicuity, Efficiency, Dependability) and hedonic qualities (Attractiveness, Stimulation, Novelty) as conceptualized by Hassenzahl (2003). This alignment makes the UEQ particularly appropriate for evaluating a national educational platform such as PMM, where both functional usability and motivational engagement are critical to sustained teacher professional development.

Several studies have examined user experience in educational platforms using various frameworks (Saleh et al., 2022; Darmawan et al., 2025). Saleh et al. (2022) applied the UEQ to evaluate the user experience of Moodle as a learning management system, collecting data from 867 participants across Jordanian institutions, and demonstrated that UEQ effectively captured both pragmatic and hedonic quality aspects of e-learning platforms, providing actionable feedback for system improvement. Darmawan et al. (2025) similarly employed the UEQ to evaluate student UX on a school-based e-learning web platform, finding that while dimensions such as Attractiveness, Efficiency, and Dependability received positive scores, Novelty and Stimulation remained comparatively lower, indicating persistent challenges in innovation across digital learning systems. Pratama et al. (2022) applied the UEQ to evaluate an integrated learning information system and found that usability and efficiency were critical determinants of user satisfaction. Similarly, Santoso et al. (2022) employed the UEQ+ to assess cross-cultural UX in online learning tools, demonstrating that attractiveness and stimulation significantly influenced continued use of the platform. Farlian and Ridwansyah (2023) further confirmed the UEQ's effectiveness in evaluating digital public service applications in the Indonesian context. Recent studies have also highlighted that the effectiveness of large-scale learning management systems, particularly national educational platforms, is strongly influenced by usability, accessibility, and alignment with user needs in diverse educational contexts (Badaru & Adu, 2022). Despite these contributions, no study has specifically applied the UEQ to evaluate a national teacher professional development platform such as PMM, leaving a significant gap in understanding how Indonesian teachers perceive its usability, engagement, and overall experience.

Despite its large-scale implementation, the effectiveness of PMM from a user experience (UX) perspective has not been sufficiently explored. Previous studies have focused primarily on teachers' participation rates or content relevance (Arnes et al., 2023; Marisana et al., 2023) but have lacked insight into teachers' perceptions of usability, engagement, and satisfaction. A high-quality user experience (UX) is essential for ensuring the long-term success of digital learning platforms (Lock et al., 2021). Attractiveness, efficiency, dependability, and novelty directly influence teachers' motivation and learning outcomes (Santoso et al., 2022; Pratama et al., 2022). Thus, evaluating UX using validated instruments, such as the User Experience Questionnaire (UEQ), provides valuable insights to improve platform design and functionality. This research fills a gap by examining teachers' experiences to evaluate the UX quality of PMM. Therefore, this study aims to empirically evaluate the user experience quality of the Platform Merdeka Mengajar (PMM) from the perspective of Indonesian teachers, identify the platform's strengths and weaknesses across the six UEQ dimensions, and provide evidence-based recommendations for its future development and improvement. In light of these transformations, this study is guided by the following research questions: (1) How do Indonesian teachers perceive the user experience of the Platform Merdeka Mengajar (PMM) across the six UEQ dimensions? (2) Which dimensions of PMM's user experience are perceived as strengths, and which require improvement? (3) What recommendations can be derived from teachers' UX perceptions to inform the future development of PMM?

To address these questions, this paper is organized as follows. Section 2 describes the research methodology, including the survey instrument, data collection procedure, and data analysis techniques. Section 3 presents the results across the six UEQ dimensions, supported by confidence-interval analysis, response distributions, reliability testing, benchmarking, and key performance indicators. Section 4 discusses the findings in relation to existing literature, followed by conclusions and recommendations for future research and platform development in Section 5.

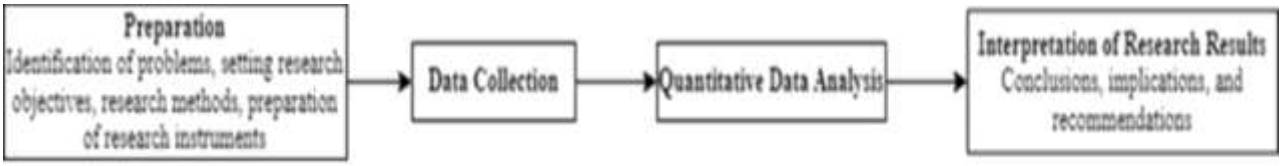
RESEARCH METHOD

Research Design

This study adopted a cross-sectional survey design, in which data were collected at a single point in time from a sample of active PMM users. This design is appropriate for descriptive and evaluative research that aims to capture users' perceptions and experiences with a digital platform at a given moment (Creswell & Creswell, 2018). The quantitative approach was selected because it enables the systematic measurement of user experience constructs through standardized instruments, allowing for objective comparison and benchmarking against international standards. This is consistent with the post-positivist paradigm, which assumes that user experience can be measured, quantified, and analyzed statistically to produce generalizable findings (Cohen et al., 2018).

Figure 1.

Research Procedure Flow



Research Group/Participants

Data were collected from 250 active users of the Merdeka Mengajar Platform (PMM), comprising teachers aged 20 to 40 years who teach across primary to secondary educational levels and have been using the platform for one to two years. PMM is a national instructional platform developed by Indonesia's Ministry of Education, Culture, Research, and Technology to support teachers' self-directed professional development through structured learning modules, digital classrooms, and assessment tools. The sampling method used was purposive sampling, in which participants were selected based on the criterion of being active PMM users, ensuring that all respondents had sufficient firsthand experience with the platform to provide meaningful UX evaluations. The questionnaire was distributed through WhatsApp groups and personal teacher networks, facilitating access to a geographically diverse pool of active PMM users across Indonesia. The respondents comprised teachers spanning various educational levels across Indonesia. In terms of digital proficiency, respondents exhibited a range of competency levels, from basic digital skills to advanced technological capabilities, consistent with the broader digital divide observed among Indonesian teachers (Anggraini & Winarti, 2023). In terms of demographic characteristics, the respondents included both male and female teachers, spanning a diverse age range reflective of the broader Indonesian teacher population. The demographic diversity of the sample strengthens the representativeness of the findings and provides a more comprehensive picture of teachers' UX perceptions across different contexts.

Data Collection Tools

The instrument used in this study was the User Experience Questionnaire (UEQ). The UEQ is an internationally validated questionnaire with 26 seven-point bipolar scale statements measuring six main dimensions: Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty. The theoretical basis for these dimensions draws on Hassenzahl's (2003) distinction between pragmatic and hedonic qualities and Nielsen's (1994) usability attributes, thereby making the UEQ a comprehensive and theoretically grounded instrument for evaluating digital product experiences. The UEQ is widely used in research to evaluate the quality of user experience in various applications, including online learning systems and other digital services. Recent studies also show that the UEQ yields valid results that can be compared with international benchmarks, facilitating the interpretation of an application's UX quality (Pratama et al., 2022; Santoso et al., 2022). Therefore, the UEQ is appropriate for evaluating the user experience of the PMM application in this study. The questionnaire was prepared in an online

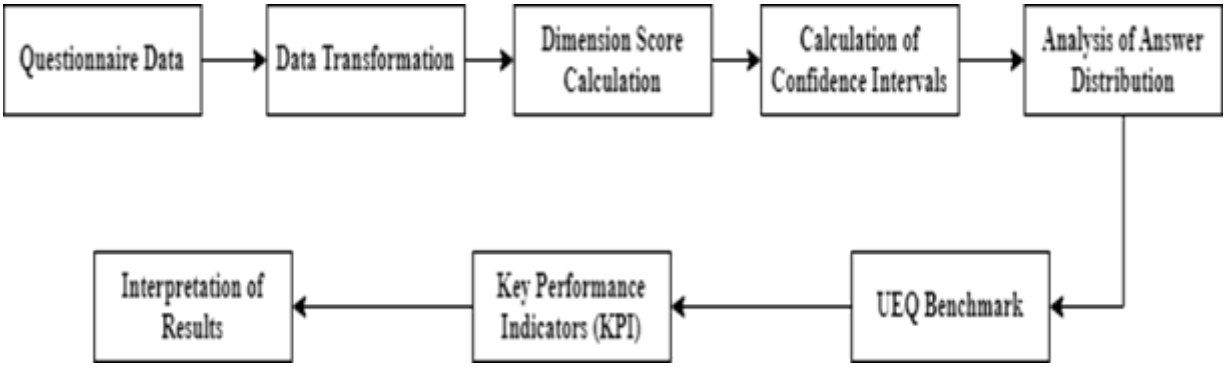
format for easier access by respondents and distributed to active PMM application users, who were asked to complete it based on their experiences.

Data Analysis Techniques

This study employed a quantitative approach to data analysis in accordance with the UEQ procedure. First, data collected from the UEQ questionnaire were prepared for analysis. Next, the data were transformed to convert respondents' answers into numerical form using the UEQ scale, which ranges from -3 to +3, with +3 indicating the most positive perception and -3 the most negative. Dimension scores were then calculated by grouping each question item into one of the six UEQ dimensions and computing the average value. A confidence interval was subsequently calculated to assess the certainty of the measurement results and confirm that the obtained scores were reliable. The distribution of respondents' answers on each item was also analyzed to gain a deeper understanding of response patterns. UEQ benchmarking was then performed by comparing the research results with the international UEQ benchmark database to assess the tested system's position against existing standards. A sample size analysis was performed to ensure the sample size was statistically adequate, and key performance indicators (KPIs) were established to measure important aspects of this study. To ensure the validity and reliability of the study, several measures were undertaken. In terms of validity, the UEQ has been validated internationally and widely used in various digital product evaluations, supporting its construct validity. Content validity was further supported by the direct alignment of each UEQ dimension with the core aspects of user experience being examined. To assess reliability, internal consistency was evaluated using Cronbach's Alpha for each of the six UEQ dimensions. Values ranging from 0.53 to 0.80 were obtained, indicating acceptable to high reliability across most dimensions, except for the Novelty scale, which was interpreted with greater caution due to its lower alpha (0.53).

Figure 2.

Data Analysis Procedure



Ethical Issues

This study was conducted in accordance with established ethical principles for research involving human participants. Before data collection, participants were informed of the study's purpose, and their voluntary participation was confirmed. Informed consent was obtained from

all respondents before they completed the questionnaire, and participants were informed of their right to withdraw at any time without consequences. To protect participants' privacy, all collected data were treated as confidential and analyzed in aggregate, ensuring that no individual responses could be identified. The study did not involve any sensitive personal data beyond professional background information, and no potential harm to participants was anticipated. Ethical clearance for this research was obtained from the relevant institutional authorities before data collection began.

RESULTS

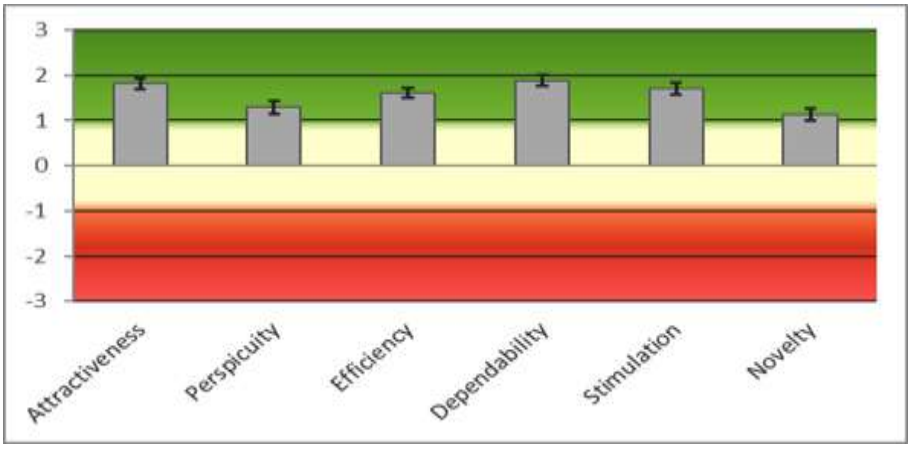
Average Score Per Dimension

During the data transformation stage, each item in the questionnaire was adjusted to account for variations between positive and negative statements. To maintain consistency in the assessment, the answers were converted to a range of -3 to +3. +3 indicates the most positive perception, and -3 indicates the most negative perception. These values were then used to calculate the mean for each of the six UEQ dimensions and for each item in the questionnaire. According to the interpretation guidelines, scores between –0.8 and +0.8 are neutral. Scores above +0.8 indicate a positive evaluation, and scores below –0.8 indicate a negative evaluation.

The diagram below shows the average scores for each UEQ dimension: Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty. Most dimensions scored above +1, indicating they fall into the positive category per the guidelines. This shows that, in general, respondents rated their experience using the application as satisfactory, though there were variations between dimensions. The novelty dimension tended to have the lowest score, indicating room for improvement in terms of the application's innovation.

Figure 3.

Average Score From 6 Dimensions

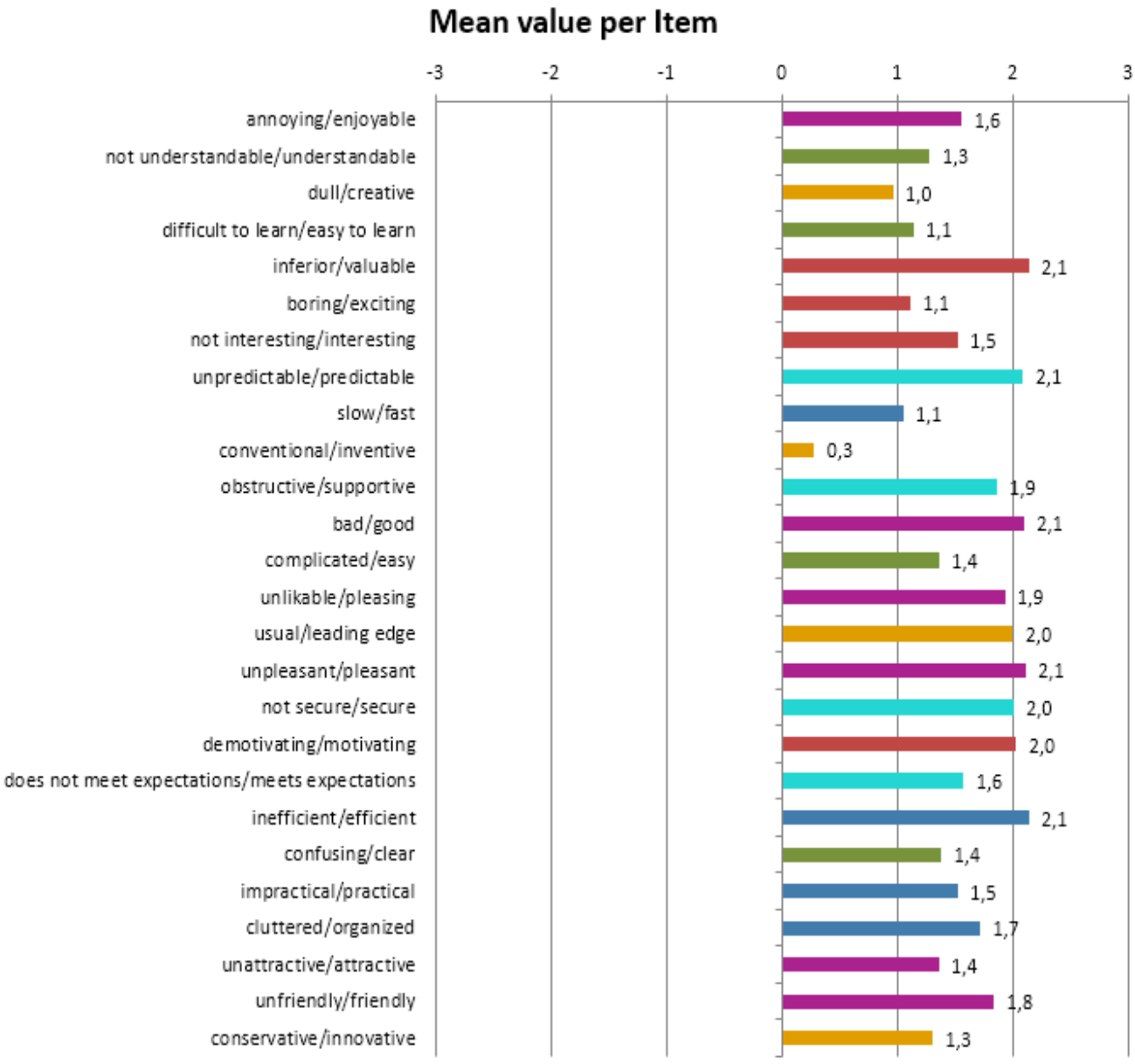


The second diagram provides a closer look at the mean value per item. In this diagram, each pair of bipolar words from the questionnaire is compared based on average respondent ratings. Average values above 1.5 indicate that the product performs very well and is positively

received by users. The item with the highest value, "less useful/useful," is 2.1, indicating that the product is considered very useful and effective. Additionally, the items "unpredictable/predictable," "bad/good," "uncomfortable/comfortable," and "inefficient/efficient" have positive values of 2.1. These results suggest that the product works well and provides a pleasant, easy-to-understand experience, helping users achieve their goals without obstacles.

Figure 4.

Average Score From 26 Items



Items with low average scores (below 0.5) indicate areas that need improvement. The most notable item in this category is "conventional/creative" with an average score of 0.3, suggesting that users perceive PMM as lacking innovation and being conventional. These findings show that, although the product is highly functional and useful, it lacks the innovative

and creative elements necessary to make the user experience more engaging and memorable. Therefore, this area will be the main focus of future product development and improvement.

Confidence Interval (CI)

Confidence intervals measure the precision of average value estimates at the scale and item levels. These intervals describe the range of values most likely to contain the actual population average. The narrower the interval, the greater the certainty in the measurement results and the greater the trustworthiness of the data. The width of the interval depends on the number of respondents and the consistency of their answers. The more consistent the respondents' answers are, the narrower the interval, meaning the estimated value is more accurate.

According to the confidence interval per scale table, all dimensions in the PMM application have positive average values and relatively narrow interval ranges. For instance, the Dependability dimension had the highest average value, 1.885, with a range of 1.770 to 2.000. This indicates that users' perceptions are quite consistent in this regard. The Attractiveness and Stimulation dimensions also have high averages (1.817 and 1.703), with narrow intervals, indicating reliable measurement results. In contrast, the Perspicuity dimension (mean 1.293; range 1.153–1.433) and the Novelty dimension (mean 1.140; range 1.011–1.269) had the lowest scores, suggesting room for improvement.

Table 1.

Confidence Interval per 6 Scale

Confidence Intervals (p=0.05) per Scale						
Scale	**Mean**	**Std. Dev.**	**N**	**Confidence**	**Confidence Interval**	
Attractiveness	1.817	0.906	250	0.112	1.705	1.930
Perspicuity	1.293	1.131	250	0.140	1.153	1.433
Efficiency	1.609	0.922	250	0.114	1.495	1.723
Dependability	1.885	0.925	250	0.115	1.770	2.000
Stimulation	1.703	1.074	250	0.133	1.570	1.836
Novelty	1.140	1.037	250	0.129	1.011	1.269

Based on the confidence-interval-per-item table, the average scores tend to be positive, with varying intervals. Items 20 and 16 have the narrowest intervals, with confidence values of 0.131 and 0.142, respectively. These values indicate a high degree of consensus among respondents on these items. Therefore, the sample means (2.140 for item 20 and 2.004 for item 16) are likely to reflect the true population means. The low standard deviations for these items (1.057 and 1.146, respectively) reinforce this conclusion.

Meanwhile, item 10 has a confidence value of 0.210 and the highest standard deviation (1.692), resulting in the widest confidence interval. This suggests significant differences in opinion among respondents regarding this item. Item 3 has a standard deviation of 1.755 and also has a large interval width, indicating a lack of consensus. In this case, even though we have a sample mean, we are less confident that it accurately estimates the population mean.

These confidence interval results carry important implications for understanding the reliability of the findings. The narrow intervals observed across most dimensions, particularly Dependability and Attractiveness, suggest that the sample mean values are highly representative of the broader population of PMM users, lending credibility to the conclusion that these dimensions are genuinely perceived as strengths of the platform. Conversely, the wider intervals for Novelty and Perspicuity indicate greater variability in user perceptions, which may reflect the influence of contextual factors such as differences in digital literacy levels, teaching experience, and regional infrastructure on how teachers evaluate these aspects of the platform. This variability underscores the importance of interpreting these dimensions with caution and highlights the need for more targeted investigations into the specific user groups that drive these divergent perceptions.

Table 2.

Confidence Interval per 26 Items

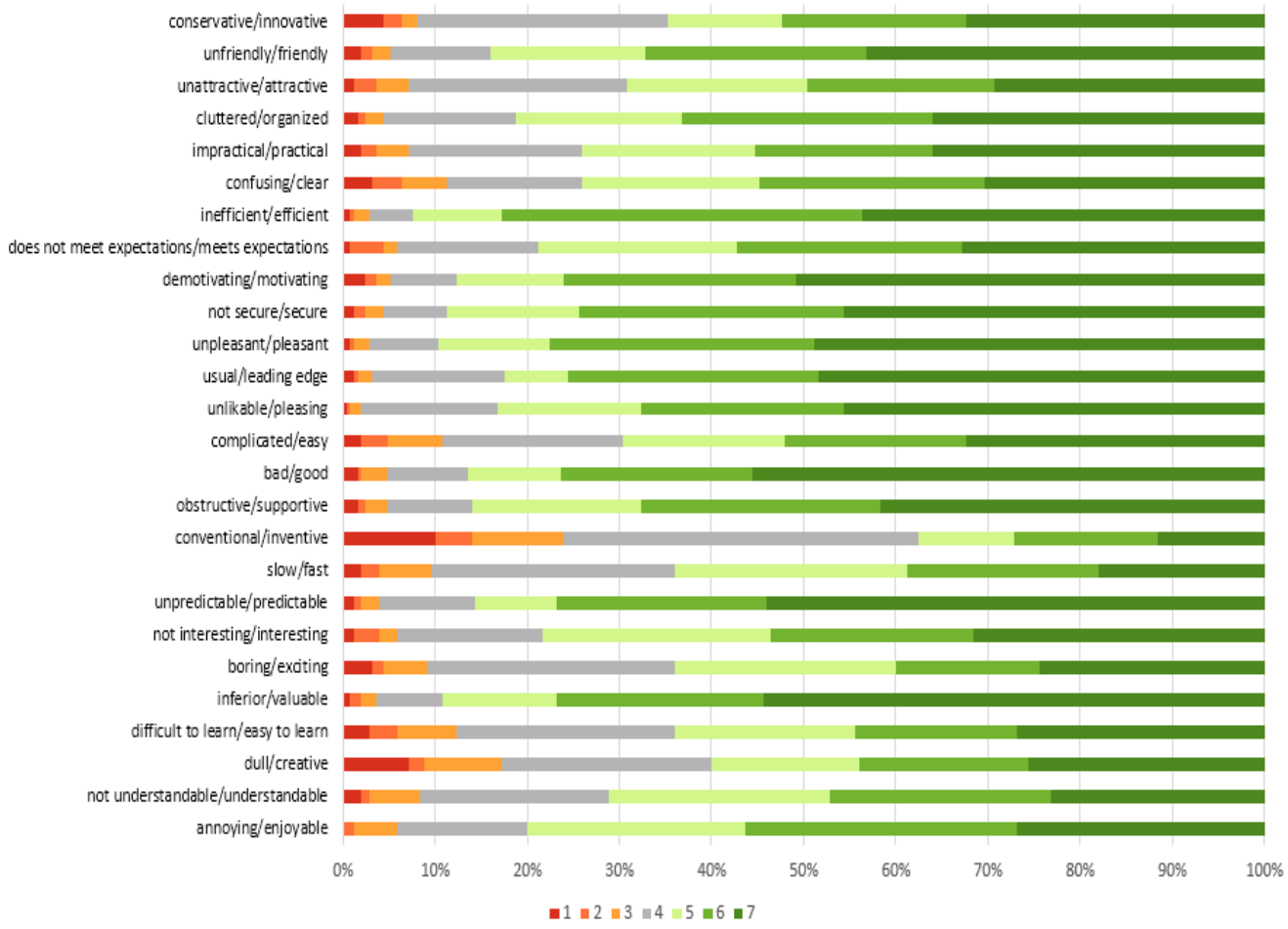
Confidence Intervals (p=0.05) per Item						
Scale	**Mean**	**Std. Dev.**	**N**	**Confidence**	**Confidence Interval**	
1	1.56	1.22	250	0.15	1.41	1.71
2	1.28	1.38	250	0.17	1.11	1.46
3	0.96	1.76	250	0.22	0.75	1.18
4	1.14	1.57	250	0.20	0.95	1.34
5	2.14	1.22	250	0.15	1.99	2.29
6	1.12	1.49	250	0.18	0.93	1.30
7	1.52	1.38	250	0.17	1.35	1.70
8	2.09	1.29	250	0.16	1.93	2.25
9	1.05	1.39	250	0.17	0.88	1.22
10	0.28	1.69	250	0.21	0.07	0.49
11	1.86	1.30	250	0.16	1.70	2.03
12	2.10	1.31	250	0.16	1.94	2.26
13	1.36	1.54	250	0.19	1.17	1.56
14	1.93	1.22	250	0.15	1.78	2.08
15	2.00	1.28	250	0.16	1.85	2.16
16	2.11	1.15	250	0.14	1.97	2.25
17	2.01	1.25	250	0.15	1.85	2.16
18	2.03	1.36	250	0.17	1.86	2.20
19	1.58	1.38	250	0.17	1.41	1.75
20	2.14	1.06	250	0.13	2.01	2.27
21	1.38	1.57	250	0.20	1.19	1.58
22	1.52	1.47	250	0.18	1.34	1.71
23	1.72	1.32	250	0.16	1.56	1.88
24	1.36	1.43	250	0.18	1.18	1.54
25	1.84	1.37	250	0.17	1.67	2.01
26	1.31	1.62	250	0.20	1.11	1.51

Distribution of Respondents' Answers

To gain a deeper understanding of the respondents' perceptions, the analysis examined the distribution of responses for each item. The figure below illustrates the distribution of responses for each item. Based on this figure, most items show a strong tendency toward positive values (scores of 5, 6, and 7), as indicated by light and dark green. This indicates that respondents generally had a very positive experience with the product. Items such as "bad/good," "not useful/useful," and "unpredictable/predictable" received the highest proportion of positive scores, with nearly all responses falling in the 6-7 range. These results confirm that the product is good, useful, and predictable, consistent with the previous analysis.

Figure 5.

Distribution of Respondents' Answers per Item



However, several items tend to be distributed more evenly or lean toward negative scores (1, 2, and 3), represented by orange and red. The items "monotonous/creative" and "conventional/innovative" have the most varied response distributions. For the "monotonous/creative" item, a significant proportion of respondents chose negative scores (1, 2, and 3), indicating that most users do not find the product to be very creative or innovative. Similarly, the "conventional/creative" item has a wide distribution, with a fairly large proportion of negative responses. This confirms that some users consider this product to be less innovative.

The even distribution of responses on this item indicates that respondents are not strongly in agreement, with some giving positive ratings and others negative.

Scale Consistency Analysis

To assess the instrument's reliability, scale consistency was evaluated using Cronbach's Alpha. The alpha value reflects the extent to which items in a scale measure the same construct; thus, the higher the value, the more reliable the measurement results. The following table shows the results of the Cronbach's Alpha calculations. It demonstrates that the attractiveness and stimulation scales are highly reliable, with an Alpha value of 0.80. This indicates that the items used to measure these two dimensions are highly consistent. Similarly, the Perspicuity scale has good internal consistency, with a Cronbach's alpha of 0.73.

However, the Efficiency and Dependability scales have slightly lower alpha values of 0.65 and 0.67, respectively. While these values do not reach the standard threshold of 0.70, they are still considered sufficiently reliable for analysis. Novelty is the only scale with low reliability, as indicated by a Cronbach's alpha of 0.53. This suggests that the items used to measure novelty are less consistent. This may be due to respondents having different understandings of the concept of "novelty," resulting in varied responses. Therefore, the analysis results for the novelty scale should be interpreted with greater caution.

Table 3.

Reliability and Correlation per Item

Scale	Cronbach's alpha
Attractiveness	0.80
Perspicuity	0.73
Efficiency	0.65
Dependability	0.67
Stimulation	0.80
Novelty	0.53

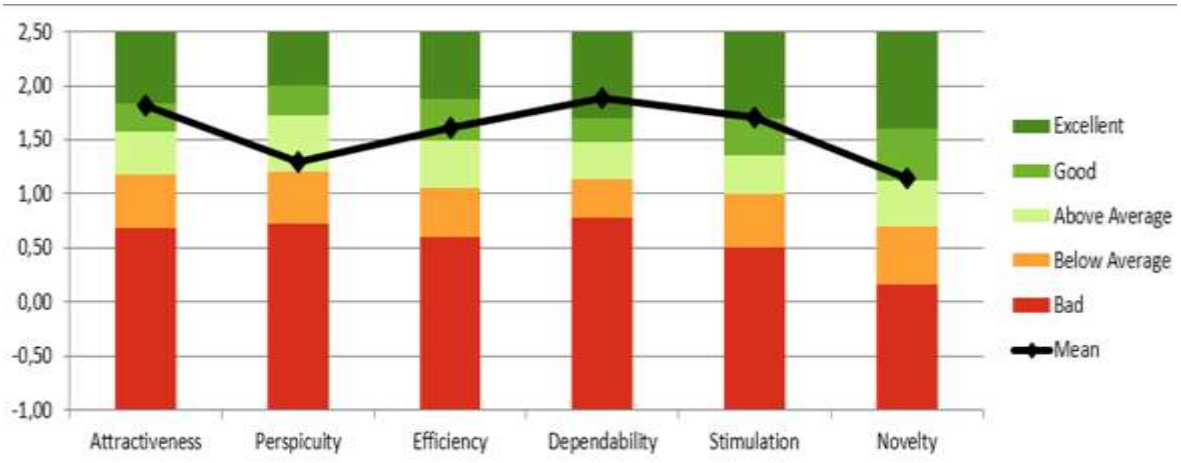
UEQ Benchmarking

Benchmark analysis compares research results with existing standards or references. This comparison provides a more objective view of the product's position in a broader context. The graph below shows the performance of the PMM application across six key dimensions: Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty. Overall, the product performs very strongly in almost all dimensions. The highest average score is in the Dependability dimension, which falls in the "Excellent" category. This indicates that the product is considered very reliable and effectively meets user expectations. Additionally, Attractiveness, Perspicuity, Efficiency, and Stimulation show solid performance, with average scores between the "good" and "above average" categories. This indicates that the product works well and efficiently, providing a pleasant, easy-to-understand experience.

However, Novelty is the only dimension with a relatively lower score. Although it is still rated "Good," the lower average score suggests the product is less innovative or distinctive than other products evaluated with the UEQ. This finding is consistent with previous analyses indicating that the product is often considered "monotonous" and "conventional." Therefore, developers need to invest in innovative and creative elements to enhance the product's competitiveness in this key area of future improvement.

Figure 6.

Benchmark Comparison Results Diagram

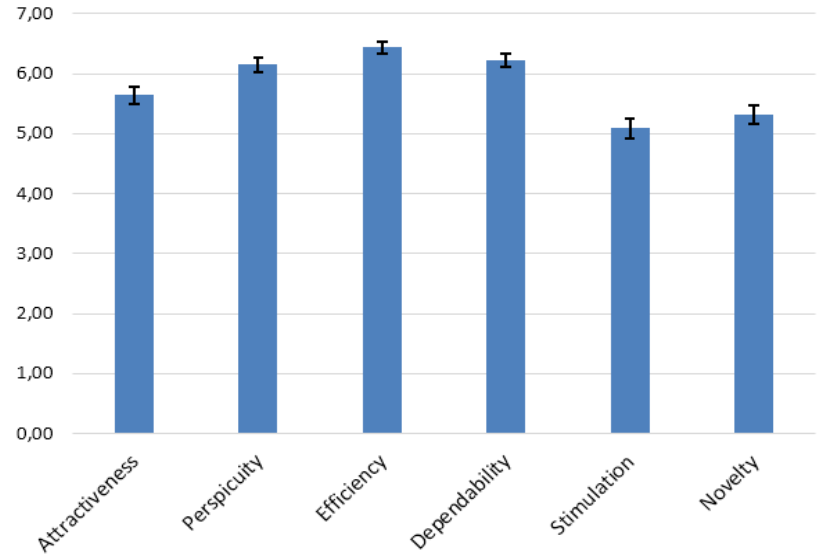


Key Performance Indicators (KPI)

Key performance indicators (KPIs) are measurable metrics used to evaluate the success of a project or organization in achieving its strategic objectives. In the context of user experience (UX), KPIs serve as important tools for measuring how effectively a product meets user needs and expectations. One effective way to formulate appropriate KPIs is to analyze the importance of each product aspect to users.

Figure 7.

Average Importance Ratings Diagram



The Importance Ratings chart below shows users' main priorities. The chart shows that Efficiency and Perspicuity have the highest average scores (above 6). Therefore, Efficiency and Perspicuity are the most important aspects for users. Users greatly appreciate products that are time-efficient and easy to understand. Additionally, the dimensions of Dependability and Attractiveness have averages above 5.5, indicating that they are also considered important, albeit slightly less so than efficiency and Perspicuity. Users appreciate products that are dependable and visually appealing. The dimensions with the lowest average scores are stimulation and novelty, with averages below 5.5. Although they are still considered important, stimulation and novelty are the least important aspects for users. Users prioritize basic functions and usability over innovative or motivating features.

DISCUSSION

The findings of this study reveal that *Platform Merdeka Mengajar* (PMM) generally provides Indonesian teachers with a positive user experience. The positive scores across all six UEQ dimensions align with previous studies that emphasize the importance of usability and engagement in enhancing teachers' self-learning motivation (Farlian & Ridwansyah, 2023; Santoso et al., 2022).

The highest score on the Dependability dimension suggests that teachers perceive PMM as a trustworthy, stable platform for accessing professional development materials. This aligns with prior findings that reliability influences users' continued use of e-learning systems (Pratama et al., 2022). Similarly, the high attractiveness and efficiency scores suggest that the PMM design and interface facilitate intuitive navigation and effective completion of learning tasks (Dehbi et al., 2023). These dimensions contribute to user satisfaction and sustained adoption, which is consistent with the usability principles proposed by Richey and Klein (2014). They argue that learning platforms must balance cognitive load with design simplicity to optimize engagement.

However, the Novelty dimension scored the lowest, reflecting that users perceive PMM as conventional rather than innovative. This may be due to its uniform interface design, limited interactive elements, and lack of gamified or creative learning components. Similar issues have been reported in studies of other national e-learning systems where repetitive interface designs often lead to decreased teacher engagement and exploration (Lock et al., 2021; Alahmad et al., 2021). The low Novelty score warrants a more nuanced discussion of what constitutes meaningful innovation in the specific context of a national teacher professional development platform. Unlike consumer-facing applications, where novelty is often driven by aesthetic trends or entertainment value, innovation in a professional learning platform such as PMM must be pedagogically purposeful and contextually appropriate. In the Indonesian context, meaningful innovation should prioritize accessibility and inclusivity, ensuring that new features remain functional across varying levels of internet connectivity and digital literacy. For instance, adaptive learning pathways that adjust content difficulty and format based on individual teachers' competency levels would address the documented digital divide among Indonesian

educators (Anggraini & Winarti, 2023). Similarly, progress visualization tools that provide teachers with clear, actionable feedback on their professional development trajectories could enhance motivation without requiring high bandwidth or advanced digital skills. Collaborative features that enable peer learning and knowledge sharing among teachers across regions could also foster a sense of professional community, which is particularly valuable in geographically dispersed educational systems such as Indonesia's. While AI-driven recommendations and gamification elements have been shown to enhance engagement in digital learning environments (Ghazali et al., 2022), their implementation in PMM should be approached incrementally and tested with diverse user groups to ensure they are perceived as genuinely useful rather than superficially novel. Ultimately, innovation in PMM should be defined not by technological sophistication alone, but by its capacity to meaningfully enhance teachers' professional growth in ways that are equitable, sustainable, and responsive to the realities of Indonesian education.

The contextual factors unique to Indonesia play a significant role in shaping teachers' UX perceptions of PMM and must be considered when interpreting the findings in relation to international benchmarks. Indonesia's vast geographical diversity, coupled with persistent disparities in internet connectivity, electricity access, and digital infrastructure across regions, creates a highly heterogeneous user environment rarely encountered in UX studies in more technologically advanced contexts (Anggraini & Winarti, 2023). Teachers in remote or underserved areas may experience PMM differently from their urban counterparts, as unreliable connectivity can affect perceived efficiency and dependability, even if the platform itself is technically robust. Furthermore, PMM occupies a uniquely central role in Indonesia's national education policy as the primary vehicle for teacher professional development under the Merdeka Belajar framework. This institutional positioning may influence teachers' perceptions of UX in ways that differ from evaluations of commercially developed platforms, as they may feel a degree of obligation or institutional pressure to engage with PMM regardless of their subjective experience. This dynamic is rarely captured in international UX benchmarks, which typically evaluate platforms used on a purely voluntary basis. Therefore, while PMM's performance across most UEQ dimensions compares favorably with international standards, these contextual nuances suggest that direct comparisons should be made with caution, and that future UX evaluations of national educational platforms should incorporate context-specific factors as integral components of the analytical framework.

Furthermore, differences in teachers' digital literacy levels may explain variations in perceptions across dimensions. Teachers who are more tech-savvy likely experience the platform as efficient and stimulating, whereas those who are less tech-savvy may perceive it as rigid or monotonous (Anggraini & Winarti, 2023). Therefore, targeted training in digital pedagogy and UX literacy should accompany the implementation of PMM to ensure equitable access and effective utilization across teacher demographics.

Comparing the findings of this study with previous research reveals both consistencies and distinctions. The high Dependability score observed in PMM aligns with Pratama et al. (2022), who similarly found that reliability and predictability were among the strongest dimensions in their UEQ evaluation of an integrated learning information system in Indonesia. Furthermore, the strong Attractiveness score in this study is consistent with Santoso et al. (2022), who reported that visual appeal and overall impression significantly contributed to positive perceptions of UX in online learning tools such as Zoom. However, the low Novelty score in this study contrasts with findings from Farlian and Ridwansyah (2023), who reported relatively higher novelty perceptions in an evaluation of a digital public service application, suggesting that government-developed educational platforms may face greater challenges in delivering innovative experiences than other digital services. Moreover, the infrastructure and digital literacy challenges unique to Indonesia, as noted by Anggraini and Winarti (2023), may further constrain teachers' ability to fully appreciate or engage with novel features, a factor not commonly reported in UX studies conducted in more digitally advanced contexts. These comparisons underscore the importance of contextualizing UX evaluations within the sociotechnical environment of the target users.

From a policy perspective, these findings support the idea that large-scale national platforms can improve teacher competence by integrating usability-focused design with consistent capacity-building initiatives. The Ministry of Education can leverage these insights to refine PMM's design and strengthen its role as a catalyst for sustainable teacher professional development in the digital era.

Limitations

This study has several limitations that should be acknowledged. First, the sample was limited to 250 active PMM users, and the sampling method may not fully capture the diversity of Indonesian teachers across regions, teaching levels, subjects, and digital proficiency levels. Second, the study relied solely on a quantitative survey instrument, which may not capture the nuanced qualitative experiences of teachers in interacting with PMM. Third, the cross-sectional nature of the data collection means that longitudinal changes in teachers' UX perceptions over time could not be assessed. Finally, the relatively low Cronbach's Alpha for the Novelty scale (0.53) suggests that findings on this dimension should be interpreted with caution, as the scale's internal consistency did not meet the conventional threshold of 0.70.

CONCLUSION

This study provides empirical evidence of the quality of the user experience of the *Platform Merdeka Mengajar* (PMM) from the perspective of Indonesian teachers. The analysis of responses from 250 teachers to the User Experience Questionnaire (UEQ) revealed that teachers generally perceive PMM positively, particularly in terms of dependability, attractiveness, and efficiency. These results underscore the platform's strengths in reliability, accessibility, and ease of use, key factors in the successful adoption of national digital learning

platforms. However, the relatively low score for novelty underscores the need for innovation in the PMM interface design and interactive features. Enhancements in creative content presentation, adaptive learning recommendations, and gamified elements could significantly improve teacher engagement and satisfaction. The findings also emphasize the importance of providing continuous training and technical support to address disparities in teachers' technological proficiency.

In conclusion, PMM is an effective national instrument for advancing teacher competence through self-directed learning. Future research should employ mixed-methods approaches to explore the qualitative insights behind users' perceptions and assess the longitudinal impact of PMM use on teachers' pedagogical performance. Strengthening innovation, personalization, and inclusivity within PMM will ensure its sustainability as a cornerstone of Indonesia's digital education transformation.

Acknowledgment

This article is a part of a research project funded by the Directorate of Research, Technology, and Community Service (DRTPM) under the Directorate General of Higher Education, Research, and Technology (Ditjen Dikti) of the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) of the Republic of Indonesia in 2024. Gratefulness is expressed to the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek), Universitas Pendidikan Indonesia, IT in Education Research Group, Center of Advanced Technology for Sustainable Education, and all the other organizations involved in the completion of this research.

REFERENCES

Ajani, O. (2024). Enhancing Pre-Service Teacher Education: Crafting a Technology-Responsive Curriculum for Modern Classrooms and Adaptive Learners. *Research in Educational Policy and Management, 6*(2), 209-229. https://doi.org/10.46303/repam.2024.32

Alahmad, A., Stamenkovska, T., & Gyori, J. (2021). Preparing pre-service teachers for 21st century skills education. *GiLE Journal of Skills Development*, *1*(1), 67–86. https://doi.org/10.52398/gjsd.2021.v1.i1.pp67-86

Almasco, M. A. A. (2023). 21st century skills: Teachers' integration in face-to-face instruction. *World Journal of Advanced Research and Reviews*, *19*(1), 315–333. https://doi.org/10.30574/wjarr.2023.19.1.1316

Anggraini, G., & Winarti, W. (2023). Problematika penggunaan platform merdeka mengajar (PMM) pada daerah tanpa jaringan listrik (studi di SMPN Satu Atap 2 Mentaya Hulu). *Bitnet: Jurnal Pendidikan Teknologi Informasi*, *8*(2), 103–112. https://doi.org/10.33084/bitnet.v8i2.5534

Arnes, A., Muspardi, M., & Yusmanila, Y. (2023). Analisis pemanfaatan platform merdeka mengajar oleh guru PPKn untuk akselerasi implementasi kurikulum merdeka.

EDUKATIF: Jurnal Ilmu Pendidikan, *5*(1), 60–70. https://doi.org/10.31004/edukatif.v5i1.4647

Aulia, D., Murni, I., & Desyandri, D. (2023). Peningkatan kompetensi guru sekolah dasar melalui platform merdeka mengajar (PMM). *Jurnal Ilmiah Profesi Pendidikan*, *8*(1b), 800–807. https://doi.org/10.29303/jipp.v8i1b.1310

Badaru, K., & Adu, E. (2022). Platformisation of education: An analysis of South African universities' learning management systems. *Research in Social Sciences and Technology,* 7(2), 66–86. https://doi.org/10.46303/ressat.2022.10

Begimbetova, G., Retnawati, H., Kassymova, G., Triyono, M., Azman, M., & Sodikin, R. (2025). Developing Students' HOTS Digital Literacy Profile by Using IRT. Journal Of Curriculum Studies Research, 7(2), 155-176. https://doi.org/10.46303/jcsr.2025.16

Caswita, C., & Kristivan, I. (2022). Increasing teachers' competence in applying multi learning methods through in house training activities at SDN Sukamulya, Tasikmalaya City. *Inovasi-Jurnal Diklat Keagamaan*, *16*(2), 99–106. https://doi.org/10.52048/inovasi.v16i2.331

Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge. https://doi.org/10.4324/9781315456539

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Darmawan, A. N., Faroqi, A., & Pratama, A. (2025). Evaluation of Student UX on E-Learning Web Using User Experience Questionnaire (UEQ). *bit-Tech*, *8*(1), 1120–1130. https://doi.org/10.32877/bt.v8i1.2860

Dehbi, A., Dehbi, R., Bakhouyi, A., & Talea, M. (2023). Survey analysis of students and teachers' perceptions of e-learning and m-learning in Morocco. *International Journal of Interactive Mobile Technologies (IJIM)*, *17*(3), 102–122. https://doi.org/10.3991/ijim.v17i03.36325

Farlian, G. F., & Ridwansyah, R. (2023). The method user experience questionnaire analysis of identitas kependudukan digital application. *Paradigma - Jurnal Komputer Dan Informatika*, *25*(2), 128–134. https://doi.org/10.31294/p.v25i2.2353

Ghazali, M.A.I.M, , Zuraina, A, & Abdul Rahim, A.A. (2022). Adopting design and development research (DDR) approach in framing the ESL preservice teachers' roles and responsibilities to teach writing skills. *Journal of Pharmaceutical Negative Results*, *13*(6), 695–704. https://doi.org/10.47750/pnr.2022.13.S06.098

Hassenzahl, M. (2003). The thing and I: Understanding the relationship between user and product. In M. Blythe, C. Overbeeke, A. F. Monk, & P. C. Wright (Eds.), *Funology: From usability to enjoyment* (pp. 31–42). Kluwer Academic Publishers. https://doi.org/10.1007/1-4020-2967-5_4

Herlandy, P. B., Azim, F., & Majid, N. W. A. (2020). The effectiveness of augmented reality based learning on vocational competencies of vocational school students. *Edumatic:*

Jurnal Pendidikan Informatika, *4*(2), 120–128. https://doi.org/10.29408/edumatic.v4i2.2653

Kabir, M. R., & Miah, A. S. M. S. (2022). Managing the preparation of the 21st century competence accredited teachers. *Journal for Researching Education Practice and Theory*, *5*(2), 65–82.

Kholifah, N., Nurtanto, M., Mutohhari, F., Subakti, H., Ramadhan, M. A., & Majid, N. W. A. (2024). The mediating role of motivation and professional development in determining teacher performance in vocational schools. *Cogent Education*, 11(1), 2421094. https://doi.org/10.1080/2331186X.2024.2421094

Lock, J., Lakhal, S., Cleveland-Innes, M., Arancibia, P., Dell, D., & De Silva, N. (2021). Creating technology-enabled lifelong learning: A heutagogical approach. *British Journal of Educational Technology*, *52*(4), 1646–1662. https://doi.org/10.1111/bjet.13122

Majid, N. W. A., Sumiati, T., Putri, H. E., & Prasetio, A. P. (2020). MOOCs phenomenon and role in STEM-related education and EFA movement. *Journal of Physics: Conference Series*, *1521*, 042046. https://doi.org/10.1088/1742-6596/1521/4/042046

Marisana, D., Iskandar, S., & Kurniawan, D. T. (2023). Penggunaan platform merdeka mengajar untuk meningkatkan kompetensi guru di sekolah dasar. *Journal Basicedu*, *7*(1), 139–150. https://doi.org/10.31004/basicedu.v7i1.4363

Mudaly, V. (2025). Work-Integrated Learning in a Changing Educational Context. *Research in Social Sciences and Technology, 10*(2), 108-129. https://doi.org/10.46303/ressat.2025.29

Nielsen, J. (1994). *Usability engineering*. Academic Press. https://doi.org/10.1016/C2009-0-21512-1

Prasetyaningsih, N., Muiz, A., & Fatimah, F. (2024). Penggunaan platform merdeka mengajar (PMM) untuk peningkatan kompetensi guru di sekolah dasar. *Journal Basicedu*, *8*(1), 788–798. https://doi.org/10.31004/basicedu.v8i1.7108

Pratama, A., Faroqi, A., & Mandyartha, E. P. (2022). Evaluation of user experience in integrated learning information systems using user experience questionnaire (UEQ). *Journal of Information Systems and Informatics*, *4*(4), 1019–1029. https://doi.org/10.51519/journalisi.v4i4.394

Raharjo, R., Abdullah, I., Indiyanto, A., Mariam, S., & Raharjo, F. H. (2023). Impact of online learning on teachers' authority during the COVID-19 pandemic in Indonesia. *International Journal of Educational Reform*, *32*(2), 230–246. https://doi.org/10.1177/10567879221140091

Richey, R. C., & Klein, J. D. (2014). *Design and development research*. Routledge. https://doi.org/10.4324/9780203826034

Saleh, A. M., Abuaddous, H. Y., Alansari, I. S., & Enaizan, O. (2022). The Evaluation of User Experience on Learning Management Systems Using UEQ. *International Journal of*

Emerging Technologies in Learning (iJET), *17*(07), 145–162. https://doi.org/10.3991/ijet.v17i07.29525

Santoso, H. B., Schrepp, M., Hasani, L. M., Fitriansyah, R., & Setyanto, A. (2022). The use of user experience questionnaire plus (UEQ+) for cross-cultural UX research: Evaluating Zoom and Learn Quran Tajwid as online learning tools. *Heliyon*, *8*(11), e11748. https://doi.org/10.1016/j.heliyon.2022.e11748

Tamimi, M. (2024). Effects of Digital Story-telling on Motivation, Critical Thinking, and Academic Achievement in Secondary School English Learners. *Research in Social Sciences and Technology, 9*(1), 305-328. https://doi.org/10.46303/ressat.2024.18

Utami, L. P. R. A., Padmadewi, N. N., Artini, L. P., & Dewi, N. L. P. E. S. (2021). Teachers' perceived attitudes toward the implementation of 21st century skills at primary school. *International Journal of Language and Literature*, *5*(1), 1–10. https://doi.org/10.23887/ijll.v5i1.27667

Valentín Melgarejo, T., Ramos Pando, C., Valentín Melgarejo, P., Pariona Cervantes, D., López Basilio, D., & Zenteno Ruiz, F. (2025). Curricular Concretion at the Classroom Level for Competency-Based Performance in Initial Teacher Training. *Journal of Curriculum Studies Research*, *7*(2), 318-333. https://doi.org/10.46303/jcsr.2025.23

Zahra, S. A., & Majid, N. W. A. (2023). Pengembangan aplikasi game sistem tata surya untuk siswa sekolah dasar menggunakan metode MDLC. *Jurnal Penelitian Sains Dan Pendidikan (JPSP)*, *3*(2), 195–206. https://doi.org/10.23971/jpsp.v3i2.7289