Sinkron : Jurnal dan Penelitian Teknik Informatika
Volume 10, Number 4, July 2026
DOI : https://doi.org/10.33395/sinkron.v10i4.16784
e-ISSN : 2541-2019
p-ISSN : 2541-044X

Usability Evaluation of the PSP Mobile Application Based on User Experience

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Submitted: Aug 22, 2026 | **Accepted**: Sep 24, 2026 | **Published**: Oct 1, 2026

Abstract: PSP Mobile is an application developed to support digital payment services and the delivery of billing information. This study aims to evaluate the usability of the PSP Mobile interface based on user experience, specifically focusing on ease of use, task completion effectiveness, completion time, usage errors, and information clarity. The study employed a usability evaluation approach involving eight users who performed several task scenarios, ranging from accessing the app and logging in to locating the payment menu, completing the payment process, and obtaining proof of payment. Data were collected through usability testing, direct observation, and post-test interviews. The evaluation results indicate that, overall, users were able to successfully complete the tuition payment process. The average time required for users to locate and access the payment menu was 38.5 seconds. However, several usability issues were identified, such as an excessive number of icons on the home screen, relatively small text size, visually similar symbols, limited button visibility, and a lack of information regarding where proof of payment is stored. These findings demonstrate that while the application supports key user activities, improvements are still needed regarding navigation, information readability, and feedback presentation. The evaluation results serve as the basis for design improvement recommendations aimed at making PSP Mobile easier to understand, more efficient to use, and better aligned with user needs. These improvements are expected to enhance usability and the user experience for individuals with varying levels of digital literacy, enabling more optimal use of the application.

Keywords: Usability Evaluation, User Interface, Mobile Application, Tuition Payment, User Experience

INTRODUCTION

Advancements in information technology have driven the digitalization of various services—including financial and administrative functions—through digital applications that enable users to access information and conduct transactions more quickly and conveniently. The growth of financial technology (FinTech) has also contributed to transforming financial management by enhancing efficiency, transparency, and access to digital financial services (Review, The, Of, In, & Efficiency, 2025). In the context of school financial administration, PSP Mobile was developed as an application that provides payment services, billing information, and monitoring of a child's activities for parents or users.

The success of a mobile application is determined not only by the completeness of its functions but also by the quality of the User Interface (UI) and User Experience (UX) provided to users. Evaluating mobile applications is essential to determine the extent to which the system is easy to understand and use, as well as its ability to meet user needs. Recent research indicates that issues such as complex navigation, inconsistent layouts, and difficulty accessing features can impact usability and the user experience (Erfina, 2025). Furthermore, studies on mobile applications show that UI/UX evaluation can be used to identify interface issues and provide a foundation for the development or refinement of the application's design (Daffa et al., 2025).

PSP Mobile offers various functions that support payment and information services for users; however, the mere presence of these functions does not automatically indicate that the application interface meets user needs and characteristics. Therefore, a usability evaluation is required to identify usage issues and determine which aspects of the user experience need improvement. Recent studies have evaluated mobile applications using approaches such as the System Usability Scale (SUS), User Experience Questionnaire (UEQ), usability testing,

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and heuristic evaluation, all of which provide insights into ease of use, efficiency, satisfaction, and interface issues (Cecilia, Effendy, Saputra, & Az-zahra, 2025).

This study employs a usability evaluation approach at the prototyping stage to identify interface issues based on user experience. Evaluating at the prototype stage allows for the identification of interface problems before the application is fully implemented, thereby serving as a basis for formulating design improvement recommendations (Lestari et al., 2026). Lorincz & Bariši (2026) emphasize that discrepancies in user experience between a prototype and a launched system can arise from the prototype's limited fidelity and the complexity of the actual system. Therefore, usability evaluation at the prototyping stage is essential to identify potential issues early on and minimize user experience gaps prior to full system implementation.

Based on these issues, this study aims to evaluate the usability of the PSP Mobile interface design using a usability evaluation approach. The evaluation was conducted to identify problems encountered by users while interacting with the application, covering ease of use, task completion effectiveness, completion time, and errors occurring during use. The evaluation results were subsequently used to formulate recommendations for interface design improvements that better align with user needs. This study is expected to provide insights for enhancing the usability, ease of use, and user experience of PSP Mobile, as well as serve as a foundation for future application development.

LITERATURE REVIEW

Usability is a crucial aspect of mobile application evaluation, encompassing ease of use, efficiency, and user satisfaction. Evaluation methods such as SUS, UEQ, heuristic evaluation, and Nielsen's Attributes of Usability can be employed to identify interface issues. Previous research indicates that usability evaluation can reveal usage obstacles and serve as a basis for design improvement recommendations. Building on this, the present study utilizes usability evaluation to identify interface issues in PSP Mobile and formulate improvement recommendations based on user experience (Ganesha & Shop, 2025). Research by Lorincz & Bariši, (2026) demonstrates that prototype testing can be used to detect usability issues during the early stages of development, prior to full system implementation.

This study reveals that a usability evaluation of the E-Open application prototype identified various issues regarding effectiveness, efficiency, and user satisfaction. Design improvements were implemented based on user findings and heuristic evaluation, though the revised design has not yet undergone further user testing (Vaherdi, Az-zahra, & Syawli, 2025). Research indicates that the usability of the BWS website is influenced by learnability, efficiency, and error aspects, whereas memorability does not significantly impact user satisfaction (Anjani, Kurniawati, & Amsury, 2025). A study on an information system using the UEQ method showed positive results for attractiveness, perspicuity, and efficiency, while dependability, stimulation, and novelty require improvement (No, Hal, & Rachmawati, 2025). Research by Putu et al., (2025) indicates that the usability of the WeTV application needs improvement, particularly regarding user experience and efficiency; a "Think Aloud" evaluation identified four key issues that served as the basis for improvement recommendations. Research findings demonstrate that the SIPFO application possesses excellent usability, achieving 100% effectiveness, 100% efficiency, and a satisfaction score of 4.78/5 (Artamevia, Paputungan, Informatika, Industri, & Indonesia, 2025). A study by Yakub et al., (2025) evaluated the usability of BTN Mobile using the System Usability Scale (SUS) with 50 respondents; the results yielded an average score of 64.85—falling into the "Poor" and "Marginal" categories—indicating a need to improve features and interface elements that currently confuse users.

METHOD

This research was conducted through several systematically arranged stages to obtain usability evaluation results for the system under study. The research stages consisted of problem identification, a literature review, data collection, and usability evaluation. The workflow of the research stages is illustrated in Figure 1.



Figure 1 Research Method

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Problem Identification

The first stage is problem identification, which aims to identify issues within the application, particularly those related to usability and user experience (Eka, Jayanti, Tri, & Putra, 2025). During this stage, a preliminary observation of the PSP Mobile application is conducted to understand usage workflows, the user interface, navigation, features, and user interactions. These observations serve to identify conditions or issues that could potentially affect the ease with which users operate the application. Problem identification establishes the foundation for determining the research focus, the object of evaluation, and the data requirements for the subsequent stage. This approach aligns with mobile application evaluation studies that utilize identified issues and user feedback as the basis for determining which usability aspects require evaluation.

Literature Review

Once the problem has been defined, the next stage is the literature review. This stage involves examining various scholarly sources—such as research journals, scientific articles, and other academic materials—relevant to information technology, User Interface (UI), User Experience (UX), usability, mobile application evaluation, and usability measurement methods. The literature review serves to establish a theoretical foundation and gain insight into evaluation approaches employed in previous studies. Recent literature indicates that mobile application UX evaluation can be conducted using quantitative, qualitative, or mixed-method approaches, with the specific method chosen depending on the evaluation objectives and the application's characteristics (Lu, Qu, & Chen, 2025).

Data Collection

The next stage involves collecting data from PSP Mobile users. Data is gathered by engaging users as sources of information regarding their experiences while using the application. Data collection instruments were designed based on the research objectives and the usability evaluation methods established in the previous stage (Eka et al., 2025). During this stage, respondents use or interact with the application and subsequently provide assessments based on their usage experience. The data obtained includes quantitative data from questionnaires as well as supporting data—such as feedback or issues encountered during use—in accordance with the research instruments employed. Directly involving users as data sources is crucial, as usability evaluation aims to understand how the system is utilized within the context of actual user interaction. Research from 2025 on mobile application evaluation also demonstrates the use of questionnaires and user testing to gain insights into usability and user experience.

Usability Evaluation

The usability evaluation phase aims to assess the ease of use, effectiveness, and efficiency of the PSP Mobile application based on the user's experience while interacting with the system. The evaluation involves observing the user's task completion process, completion time, and any obstacles or errors encountered during use (Saidah, Selamat, & Adnan, 2025). The evaluation results are used to identify issues regarding navigation, the interface, information presentation, and user interaction, which subsequently serve as the basis for formulating recommendations to improve the PSP Mobile UI/UX.

RESULT

Prototype Design and User Interaction Flow

Based on the user requirements analysis, a prototype design for the PSP Mobile interface was developed, representing the primary user flow for paying tuition fees (UKT). The interaction flow begins with the Splash Screen, followed by the Login Screen for authentication. Upon successful login, the user is directed to the Home Page, where they can select the bill payment menu. Next, the user accesses the Bill Page, completes the payment process via the Payment Page, and subsequently receives information regarding the Payment Status and Payment Proof. This design systematically illustrates the usage flow—from logging into the application to obtaining proof of payment—thereby serving as a basis for the usability evaluation process. The interaction flow of the PSP Mobile prototype is illustrated in Figure 2.

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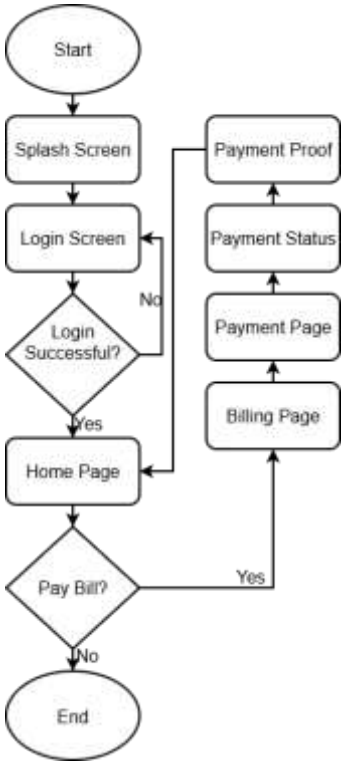


Figure 2 Interaction Flow of the PSP Mobile Prototype

Analysis of Findings Based on User Needs

The evaluation results were analyzed by correlating the findings with the user requirements established in the previous stage. The analysis focused on the clarity of interaction flows, ease of locating features, usage errors, menu navigation time, levels of user confusion, and the clarity of system feedback. This analysis identified interface elements that met the requirements as well as aspects requiring improvement. These findings served as the basis for recommendations to refine the PSP Mobile design—ensuring it is more intuitive, efficient, and aligned with user needs—as detailed in Tables 1 and 2.

Table 1 Usability Evaluation Results for the Application Login Process

Component	Content
Task Description	The user opens the application and logs in using an available account
Evaluator Checklist	• The user can find the application • The login page is understood • Login details are filled in correctly • No confusion on the login page • Error messages are clear (if they appear)
Success Indicators	• Completed in ≤ 1 minute • Maximum of 1 input error • No questions from the user

Table 2 Usability Evaluation Results for the Payment Menu

Component	Content
Task Description	The user searches for and opens the tuition fee (UKT) payment menu
Evaluator Checklist	• Menu is found quickly • Menu label is clear • Navigation is not confusing • No mis-clicks occur
Success Indicators	• Menu found in ≤ 30 seconds • Maximum of 1 mis-click

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PSP Mobile Interface Design

Figure 3 illustrates the PSP Mobile interface design, representing the primary user flow for making digital academic bill payments. The design comprises several interconnected screens, spanning the process from authentication to obtaining proof of payment. On the login screen, users can enter their username and password, with an alternative fingerprint authentication option also available. Upon successful login, users are directed to the home page, which displays balance information, service menus, and news updates. Users can then access the billing page to view the bill amount, payment information, bill details, and payment status. Following the payment process, the system provides proof of payment containing transaction details such as the payment date, invoice number, bill type, status, total bill amount, and total payment amount. This sequence of interfaces demonstrates the connections between each stage of user activity, serving as a representation of the task flow for usability testing. Overall, this design serves as the subject of evaluation to assess navigation ease, information clarity, interaction efficiency, and the interface's alignment with user needs.

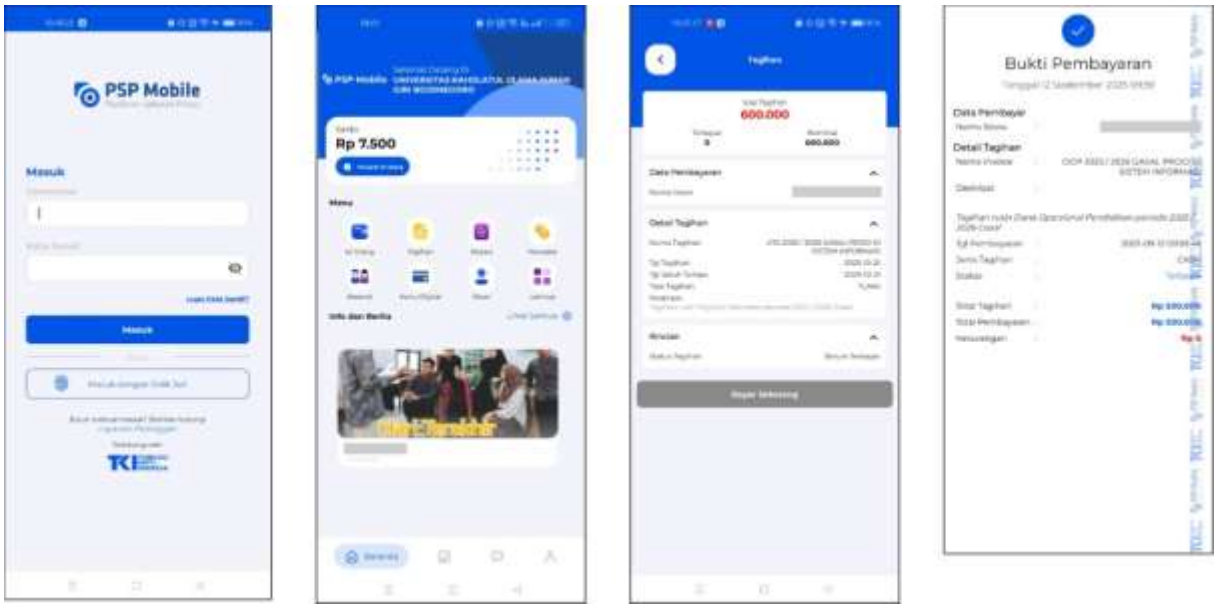


Figure 3 PSP Mobile Interface Layout for the Bill Payment Process

Usability Evaluation Observation Results

Observations were conducted with eight users (P1–P8) to evaluate their ability to complete the task of locating the tuition payment menu within the PSP Mobile application. The evaluation covered several indicators: the time required to locate the menu, the number of errors or misclicks during the search process, user behavior when interacting with the interface, and feedback provided after task completion. The results revealed variations in user experience regarding the location of the payment menu. Some users were able to locate the menu immediately without errors, whereas others took longer and made misclicks while attempting to identify the various icons on the home screen. Overall, these observations provide insight into the ease of navigation and the clarity of the interface elements used to access the tuition payment feature. Detailed observation results for each user are presented in Table 3.

Table 3 Observation Results: Task to Locate the Tuition Payment Billing Menu

User	Time	Errors	Observation	User Comment
P1	45 seconds	1 mis-click	Confused due to too many icons	The billing menu was hidden
P2	20 seconds	None	Found it immediately	The icon was clear to me.

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p-ISSN : 2541-044X

P3	1 minute	2 mis-clicks	Appeared hesitant	The symbol looked similar to others
P4	30 seconds	None	Fast enough	Too many menus on the homepage.
P5	35 seconds	None	Needed time to look at all the icons	The menu name text is very small.
P6	25 seconds	None	Smooth	OK
P7	50 seconds	1 mis-click	Scrolled down unnecessarily	I thought the menu was further down
P8	22 seconds	None	Found it quickly	The icon was quite visible

DISCUSSIONS

Usability Testing Observation Results

Usability evaluation results indicate that the PSP Mobile application enables users to successfully complete the tuition fee (UKT) payment process. Observational data covered task completion times, error counts, and issues encountered during usage. The average time required for navigation was 38.5 seconds, suggesting that users could relatively easily locate and access the necessary features. Regarding the readability of billing information, most users understood the presented details, although some felt the text size was relatively small. The payment process was also successfully executed, with only a small number of users experiencing issues related to internet connectivity. Meanwhile, the information on the payment receipt was considered sufficiently clear, though a small minority of users faced difficulties understanding or accessing it due to limited digital literacy. Overall, the observations indicate that the issues encountered were minor and did not prevent users from completing the primary tuition payment process.

Interpretation of Evaluation Results

The evaluation results indicate that the PSP Mobile application generally enables users to successfully complete the UKT (tuition fee) payment process. However, certain usability issues were identified that warrant attention. Regarding navigation, some users experienced delays in locating the necessary buttons or menus, resulting in a less-than-optimal interaction process. In terms of readability, the billing information was considered sufficiently clear, although some users encountered difficulties due to the relatively small text size. Meanwhile, the process of downloading payment receipts functioned smoothly, with virtually no issues reported for this feature; the challenges that did arise were primarily linked to users' limited digital literacy regarding the storage location of the downloaded receipt files. Overall, the evaluation demonstrates that the application provides a positive user experience for the UKT payment process, though there is room for refinement in specific interface aspects—particularly navigation clarity, text size, and the provision of information regarding receipt storage—to better accommodate users with varying levels of digital literacy.

CONCLUSION

Usability evaluation results indicate that the PSP Mobile application generally performs well in supporting the tuition fee (UKT) payment process. Users were able to complete key tasks—ranging from logging in, locating the payment menu, and making a payment to obtaining proof of payment—with an average navigation time of 38.5 seconds. However, several usability issues were identified, particularly regarding navigation clarity, text size, button visibility, icon similarity, and information concerning the storage of payment receipts. Consequently, improvements to the interface and information presentation are necessary to make the application more intuitive, efficient, and aligned with user needs. This usability evaluation can serve as a foundation for the further development and refinement of the PSP Mobile design to enhance the user experience.

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