Digital Innovation in Education Services: A Qualitative Study of Android-Based PPDB Implementation to Enhance Transparency and Service Quality

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Abstract
The rapid development of digital technology has encouraged educational institutions to adopt innovative approaches in delivering public education services. One critical area of digital transformation is the New Student Admission System (PPDB), which plays a strategic role in ensuring transparency, fairness, and service quality. This study aims to examine the implementation of an Android-based PPDB system as a form of digital innovation in education services at State Senior High School 1 Seputih Banyak. A qualitative descriptive approach was employed to explore users' experiences and perceptions of transparency and service quality in the digital admission process. Data were collected through semi-structured interviews with students, parents, and school stakeholders who were directly involved in the PPDB process and analyzed using thematic analysis. The findings indicate that the Android-based PPDB system contributes positively to the modernization of education services by improving efficiency, accessibility, and transparency. Users perceived clearer dissemination of admission information, greater openness in the selection process, and enhanced convenience compared to manual admission mechanisms. The system also improved service quality by reducing administrative complexity and facilitating faster communication. However, challenges related to technical reliability and varying levels of digital literacy among users were identified as factors influencing system effectiveness. Overall, the study highlights that digital PPDB implementation can strengthen public trust and enhance education service delivery when supported by reliable infrastructure and adequate user assistance. The findings underscore the importance of user-centered qualitative evaluation in understanding the practical impact of digital innovation in education services.

INTRODUCTION

The rapid advancement of digital technology has significantly reshaped the delivery of public services, including those in the education sector. Educational institutions are increasingly encouraged to adopt digital innovations to enhance efficiency, transparency, and service quality (OECD, 2020; Dwivedi et al., 2021). One crucial area of education services that requires such transformation is the New Student Admission System (Penerimaan Peserta Didik Baru / PPDB), which serves as a strategic gateway to formal education. The implementation of digital and mobile-based platforms, particularly Android-based systems, has emerged as an important approach to modernizing PPDB processes and improving public trust in education services (Sari et al., 2017; Warsita, 2015).

Numerous studies have explored the implementation of online PPDB systems, emphasizing their role in improving administrative efficiency, accelerating access to information, and promoting transparency in student selection processes (Sholihin & Mujilahwati, 2014; Razak et al., 2022). Previous research has reported that digital admission systems can reduce procedural complexity and minimize opportunities for bias or manipulation (Putri et al., 2018). However, existing studies also highlight persistent challenges, including unequal access to digital infrastructure, limited digital literacy among users, and technical issues such as system instability during peak registration periods (Fransiyanti, 2014; Hainim et al., 2010). These challenges indicate that the effectiveness of PPDB systems cannot be assessed solely from technical or administrative perspectives.

Most prior research on PPDB implementation has focused on institutional readiness, system performance, or policy compliance, often relying on descriptive or evaluative approaches (Anggita et al., 2023; Puspitasari, 2014). While these studies provide important insights into system functionality, they tend to overlook the experiences and perceptions of users who directly interact with the system. Understanding how students and other stakeholders perceive transparency, usability, and service quality is essential, particularly in public education contexts where fairness and accountability are key concerns (Kristiansen et al., 2009). In practice, the adoption of Android-based PPDB systems does not automatically guarantee improved transparency or service quality. Users may experience difficulties related to unclear information, limited technical support, or challenges in navigating digital platforms. Differences in digital literacy among students and parents further complicate the implementation of mobile-based admission systems (Joanne, 2017).

To respond to these challenges, this study conducts an in-depth qualitative investigation of Android-based PPDB implementation as a form of digital innovation in education services. The research examines users' experiences and perceptions of the PPDB system, focusing on how transparency and service quality are constructed and interpreted in real educational settings. By adopting a qualitative approach, this study seeks to capture nuanced insights that cannot be adequately explained through quantitative measurements alone (Creswell & Poth, 2018). Although digital admission systems have been widely discussed in the literature, there remains a limited number of qualitative studies that specifically examine Android-based PPDB platforms from a user-centered perspective at the school level. In particular, empirical evidence from Indonesian public senior high schools remains scarce. This study addresses this gap by exploring the implementation of Android-based PPDB at State Senior High School 1 Seputih Banyak, providing contextualized insights into how digital education services operate in practice.

The originality of this research lies in its emphasis on users' lived experiences in evaluating digital innovation within education services. Rather than focusing on technical efficiency or policy outcomes, this study highlights how transparency and service quality are perceived and experienced by users of an Android-based PPDB system. This perspective offers a deeper understanding of the social and practical dimensions of digital transformation in education (Vial, 2019). This study contributes to the broader discourse on digital innovation in education services by integrating qualitative insights into the evaluation of mobile-based admission systems. The findings are expected to inform policymakers, school administrators, and education practitioners in designing more inclusive, transparent, and user-oriented PPDB systems. Furthermore, the study enriches the literature on education service innovation by providing empirical evidence from a public senior high school context in Indonesia, thereby supporting more effective and equitable digital transformation in education.

METHODS

This study employed a qualitative descriptive approach to explore the implementation of an Android-based PPDB system as a form of digital innovation in education services. A qualitative design was selected to gain an in-depth understanding of users' experiences and perceptions regarding transparency and service quality in the PPDB process, as qualitative research is particularly suitable for examining meanings, interpretations, and social phenomena that cannot be fully captured through quantitative measurements (Creswell & Poth, 2018; Merriam & Tisdell, 2016). The research was conducted at State Senior High School 1 Seputih Banyak, East Lampung, Indonesia, a public senior high school that has adopted an Android-based platform for student admissions as part of its digital service innovation.

The participants consisted of students, parents, and school stakeholders who had direct experience with the PPDB process. Participants were selected using purposive sampling to ensure that the data collected reflected relevant and meaningful experiences related to the use of the Android-based PPDB system. Purposive sampling allows researchers to intentionally select participants who are most knowledgeable about the phenomenon under investigation and are therefore capable of providing rich qualitative insights (Patton, 2015).

Data collection was carried out through semi-structured interviews, enabling participants to freely express their experiences while allowing the researcher to explore specific issues related to system

transparency, ease of access, clarity of information, and overall service quality. Semi-structured interviews are widely used in qualitative research because they provide flexibility for probing and follow-up questions while maintaining focus on the research objectives (Kallio et al., 2016). This flexibility ensured that emerging issues relevant to digital innovation in education services were thoroughly explored. The collected data were analyzed using thematic analysis. Interview transcripts were carefully reviewed to achieve data familiarization, followed by the identification of initial codes. These codes were then grouped into broader themes reflecting key aspects of digital innovation, transparency, and education service quality. Thematic analysis was chosen for its systematic yet flexible approach to identifying patterns of meaning within qualitative data (Braun & Clarke, 2006). This analytical process facilitated a coherent interpretation of participants' experiences and supported the development of meaningful findings. To ensure the trustworthiness of the study, several strategies were applied. Credibility was enhanced through careful data collection and sustained engagement with participants, while dependability was supported by maintaining consistency in research procedures. Confirmability was ensured by grounding interpretations in participants' statements rather than researcher assumptions. These criteria are commonly used to establish rigor in qualitative research (Lincoln & Guba, 1985). Ethical considerations were also observed throughout the study, with participants informed about the research purpose, their voluntary involvement, and confidentiality maintained in the reporting of findings.

RESULTS AND DISCUSSION

A. Result

The research results are derived from qualitative data obtained through semi-structured interviews with students, parents, and school stakeholders who were directly involved in the implementation of the Android-based PPDB system at State Senior High School 1 Seputih Banyak. To ensure clarity and simplicity, the results are presented thematically in six main points and summarized in Table 1, followed by descriptive explanations of each theme.

Table 1. Research Results on Android-Based PPDB Implementation

No	Theme	Key Findings
1	Implementation of Android-Based PPDB	The system was introduced to replace manual PPDB, aiming to modernize education services through efficiency, transparency, and digital accessibility.
2	User Experiences	Students, parents, and school staff reported varied experiences, with overall positive perceptions after adaptation to the system.
3	Transparency of PPDB Process	Clear information, open selection results, and real-time status updates enhanced perceptions of fairness and accountability.
4	Accessibility and Ease of Use	The application was generally user-friendly, though users with limited digital literacy required technical assistance.
5	Perceived Service Quality	Digital PPDB improved efficiency and responsiveness, contributing to user satisfaction despite occasional system issues.
6	Implementation Challenges	Technical, human resource, and administrative challenges were identified, prompting schools to adopt mitigation strategies.

As Results in Table 1, the findings of this study indicate that the implementation of the Android-based PPDB system encompasses multiple interrelated aspects of digital innovation in education services. To provide a clearer and more comprehensive understanding of these findings, the results are further elaborated thematically. The following sections describe in detail the six main themes identified from participants' experiences, covering system implementation, user experiences, transparency, accessibility, perceived service quality, and implementation challenges.

Implementation of Android-Based PPDB as a Digital Innovation in Education Services

The implementation of the Android-based PPDB system at State Senior High School 1 Seputih Banyak was motivated by the need to improve transparency, efficiency, and accessibility in student admission services. Previously, the PPDB process relied on manual and semi-online mechanisms that required physical visits to the school, often resulting in administrative congestion and limited access to accurate

information. The development of the Android-based PPDB system aimed to modernize education services by simplifying admission procedures and ensuring more transparent selection processes. The application includes key features such as online registration, digital document submission, automated data processing, and real-time announcements of admission results. These features support the selection process by reducing manual intervention and enhancing procedural clarity. The shift from a manual to a fully digital PPDB mechanism represented a significant transformation in service delivery. Participants acknowledged that the digital system minimized administrative complexity and changed PPDB into a more structured and technology-driven education service.

User Experiences in Using the Android-Based PPDB System

Students reported that the Android-based PPDB system made the registration and selection process more practical and time-efficient. The ability to complete all procedures remotely reduced the need for repeated visits to the school and allowed students to monitor their registration status independently. Parents generally perceived the system as helpful in providing clearer information regarding admission requirements, pathways, and schedules. However, some parents experienced initial difficulties due to limited digital literacy, which required assistance from family members or school personnel. From the school's perspective, staff members viewed the system as effective in managing large volumes of applicants and improving administrative organization. Overall, users reported increasing levels of comfort and trust in the system as they became familiar with its features. Familiarity with the application played an important role in strengthening users' confidence in the digital admission process.

Transparency of the PPDB Process through Digital Platform

Transparency was a dominant theme in participants' accounts of the Android-based PPDB system. Users emphasized that information related to admission requirements, selection pathways, and registration schedules was clearly displayed within the application. This clarity reduced uncertainty and minimized misinformation during the admission period. The digital platform also enabled open access to selection results and admission announcements. Participants highlighted that real-time publication of results and status updates enhanced their perception of fairness and accountability. Access to ranking information and registration status allowed users to independently track their progress in the selection process.Users generally perceived the digital PPDB system as more objective and accountable compared to previous manual mechanisms, reinforcing trust in the admission process.

Accessibility and Ease of Use of the Android-Based PPDB Application

Most participants described the application as relatively easy to navigate, with a user interface that supported basic admission tasks. Familiar Android-based features facilitated user interaction with the system, particularly among students. However, accessibility challenges were identified among users with limited digital literacy, especially older parents. To address this issue, the school provided technical assistance and informal guidance during the PPDB period. Despite these efforts, technical constraints such as system slowdowns and difficulties in uploading documents were reported, particularly during peak usage times.

Perceived Service Quality of Digital PPDB Implementation

Participants perceived an improvement in service quality following the implementation of the Android-based PPDB system. The digital platform reduced registration time and streamlined administrative procedures, contributing to greater efficiency in service delivery. Responsiveness from school staff in addressing user complaints and providing guidance further supported positive perceptions of service quality. System reliability was identified as a critical factor influencing satisfaction; although the system generally functioned well, occasional technical disruptions affected users' experiences. Overall, students and parents expressed satisfaction with the digital PPDB service due to its convenience and transparency.

Challenges in Implementing Android-Based PPDB System

Several challenges were identified in the implementation of the Android-based PPDB system. Technical issues related to infrastructure capacity and internet connectivity were commonly reported. Differences in digital literacy among students and parents also affected equitable access to the system. Administrative and policy-related constraints, including compliance with admission regulations, influenced system flexibility. To address these challenges, the school adopted strategies such as providing technical assistance, strengthening communication channels, and coordinating with relevant stakeholders to ensure smoother implementation of the digital PPDB system.

B. Discussion

The findings of this study demonstrate that the implementation of Android-based PPDB at State Senior High School 1 Seputih Banyak represents a substantive form of digital innovation in education services. The transition from manual admission procedures to a mobile-based digital system reflects a broader transformation in how public education services are delivered. Digital PPDB functions not only as a technological tool but also as a service innovation that restructures administrative processes, enhances efficiency, and aligns admission services with contemporary digital governance practices. These findings are consistent with the concept of digital innovation as an integrated process involving technology, organizational change, and user engagement. The study further shows that the digital PPDB system contributes significantly to enhancing transparency in the admission process. The availability of clear and timely information regarding admission requirements, selection pathways, schedules, and results enables users to independently monitor the process. This openness strengthens perceptions of fairness and accountability while reducing uncertainty and opportunities for non-transparent practices. Transparency, in this context, is not limited to information disclosure but extends to users' confidence in the integrity of the selection process.

Digital innovation also influences the perceived quality of education services. Participants reported improvements in efficiency, including faster registration processes and reduced administrative complexity. These changes were associated with increased satisfaction among students and parents, particularly due to the convenience of remote access and improved communication. However, system reliability emerged as a critical factor shaping service quality perceptions, as technical disruptions during peak periods affected user experiences.

The findings highlight the central role of digital literacy in supporting the effective implementation of digital PPDB services. Users with adequate technological skills were better able to navigate the system and benefit from its features, while limited digital literacy among some parents created barriers to full participation. This digital divide underscores the importance of socialization, guidance, and technical assistance as complementary components of digital innovation in education services. From a policy and practice perspective, the results suggest that digital PPDB systems should be supported by strong institutional frameworks that emphasize inclusivity, technical reliability, and user-oriented design. The experience of State Senior High School 1 Seputih Banyak illustrates the potential for Android-based PPDB systems to be replicated in other educational institutions, provided that adequate infrastructure, capacity-building, and regulatory support are in place. By situating these findings within existing literature, this study contributes a qualitative, user-centered perspective that enriches current understanding of digital innovation in education services and highlights the practical conditions necessary for its success.

CONCLUSIONS AND SUGGESTIONS

A. Conclusion

This study concludes that the implementation of an Android-based PPDB system constitutes a meaningful form of digital innovation in education services at State Senior High School 1 Seputih Banyak, Indonesia. The digitalization of the admission process has improved transparency by providing clear and accessible information related to admission requirements, selection procedures, and results. From the users' perspective, the system enhances service efficiency, reduces administrative complexity, and enables more independent participation in the admission process. These findings indicate that Android-based PPDB systems can strengthen public trust and contribute positively to the modernization of education services.

Furthermore, the effectiveness of the digital PPDB system is closely linked to technical reliability and users' digital literacy. While the system offers significant benefits in terms of accessibility and service quality, challenges related to system stability and unequal technological competence among users remain influential. Therefore, digital innovation in education services should be accompanied by adequate infrastructure support and continuous user assistance to ensure inclusive and sustainable implementation. Overall, this study demonstrates that user-centered qualitative evaluations are essential for understanding the practical impact of digital transformation in public education services.

B. Suggestion

Based on the findings, it is recommended that education authorities and schools strengthen technical infrastructure and ensure system reliability to support the sustainable implementation of digital PPDB services. Schools should also prioritize digital literacy programs and provide continuous technical assistance to ensure inclusive access for all users, particularly parents with limited technological skills. Future research is encouraged to explore digital PPDB implementation in diverse educational contexts and to integrate mixed or comparative approaches in order to further examine the long-term impact of digital innovation on education service quality and public trust.

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