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Digital Resource Management Needs for Equipment and Property Lending in Dance Education

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ABSTRACT

Background: Equipment and property management plays an important role in supporting practice-based dance education, particularly in facilitating access to musical instruments, costumes, and performance properties. However, conventional lending procedures often involve fragmented records, limited inventory accessibility, and administrative constraints that may complicate resource coordination. These challenges highlight the need to examine digital resource management requirements within the specific context of dance education.
Purpose: This study aimed to identify the requirements for digital equipment and property lending management in the Dance Education Study Program at Universitas Negeri Jakarta and to formulate a preliminary digital management approach appropriate to its institutional needs.
Design and Methods: This study employed a qualitative descriptive case study approach based on an institutional assessment of existing equipment and property lending practices. The documented administrative problems and proposed system requirements were examined through qualitative descriptive analysis, focusing on user needs, administrative processes, information requirements, and system requirements.
Results: The analysis identified four interconnected dimensions of digital lending management requirements: user accessibility, administrative coordination, inventory information reliability, and system usability and security. These findings informed a proposed lending mechanism integrating Google Forms and Google Sheets to organize borrowing requests, inventory records, approval procedures, and administrative monitoring. The study highlights the importance of aligning digital management functions with institutional practices to support resource accessibility in dance education. As the proposed mechanism has not been implemented or evaluated, its operational effectiveness remains to be examined in future research.

Keywords: Dance Education; Digital Resource Management; Equipment Lending; Needs Analysis; Performing Arts Education

Introduction

Dance education involves practical learning activities in which students develop movement skills, explore artistic expression, and engage in choreographic creation. These processes require supporting resources, including musical instruments, costumes, and dance properties used during practical classes, rehearsals, and performances. The significance of resource availability can also be understood through studies of practice-based education in other disciplines. Wulandari et al. (2026) emphasized the importance of managing laboratory tools and materials to support practical learning in higher education, while Fikri et al. (2026) identified laboratory management as an important component of operational support for

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competency-based learning. Although these studies were conducted outside dance education, they illustrate the relationship between the organization of physical learning resources and the practical activities they support. In dance education, this relationship provides a basis for examining how equipment and property management may influence students' access to resources required for artistic learning activities.

Managing shared learning resources also requires coordination between users and institutional administrators. Adekunle et al. (2024) examined a laboratory management system designed to address equipment reservation, resource tracking, and inventory management in an academic environment. Similarly, Jannah et al. (2021) investigated web-based asset and document management in higher education, highlighting the importance of accessible and organized inventory information. These studies demonstrate that educational resource management involves not only the physical availability of equipment but also the administrative mechanisms through which resources are recorded, accessed, and monitored. Within dance education, where musical instruments, costumes, and properties may be shared across practical courses and artistic activities, such administrative mechanisms are particularly relevant. Understanding these arrangements is therefore an important starting point for identifying resource management needs in a practice-oriented arts education environment.

The growing importance of managing shared learning resources has encouraged the development of digital systems to improve administrative processes in educational institutions. Jannah et al. (2021) examined web-based asset management as a means of organizing institutional inventories and documentation, while Adekunle et al. (2024) addressed equipment reservation and resource tracking through a laboratory management system. Extending these approaches, Wulandari et al. (2026) investigated the development and evaluation of a digital inventory system for laboratory and workshop facilities, whereas Fikri et al. (2026) focused on integrating equipment borrowing, scheduling, and inventory monitoring into laboratory services. Although these studies approached resource management through different operational functions, they predominantly emphasized the development and implementation of digital systems. Consequently, they provide useful technological and administrative references but offer more limited insight into how resource management requirements are identified within the distinctive learning practices of arts education.

This distinction becomes particularly relevant in the Dance Education Study Program at Universitas Negeri Jakarta, where the borrowing of musical instruments, costumes, and dance properties has relied on manual records and paper-based procedures. As documented in the initial institutional assessment, these practices have been associated with difficulties in determining resource availability, coordinating borrowing approvals, monitoring equipment conditions, and maintaining accessible transaction histories. Such challenges indicate the need to examine not only the potential use of digital technologies but also the administrative and information requirements arising from existing borrowing practices. Accordingly, this study aims to analyze the requirements for digital equipment and property lending management in dance education through four interconnected dimensions: user needs, administrative processes, information requirements, and system requirements. Rather than developing and testing a new application, the study seeks to formulate a context-specific set of requirements that can inform the design of a digital lending system appropriate to the operational characteristics of practice-based dance education.

Methods

This study adopted a qualitative descriptive case study approach to examine equipment and property lending practices in the Dance Education Study Program at Universitas Negeri Jakarta. The study focused on administrative processes associated with the management of musical instruments, costumes, and performance properties. The unit of analysis was the existing lending procedure, particularly the recording of equipment availability, borrowing requests, approval processes, and inventory monitoring. Administrative personnel directly responsible for these activities constituted the primary institutional context of the study. The analysis drew on the operational problems and system requirements documented in the initial institutional assessment.

The documented issues were organized and interpreted through a qualitative requirements analysis, focusing on the relationship between existing administrative practices and the functions expected of a digital lending system. The analysis examined four dimensions: user needs, administrative processes, information requirements, and system requirements. Each dimension was used to identify operational constraints and formulate corresponding system requirements. The resulting requirements provide a preliminary basis for considering a digital lending mechanism using Google Forms and Google Sheets. As the available documentation does not establish independent verification procedures or user testing, the findings are treated as an initial institutional needs assessment rather than validated evidence of system effectiveness.

Findings & Discussion

Results

The analysis of the documented equipment and property lending practices in the Dance Education Study Program at Universitas Negeri Jakarta identified four interconnected dimensions of digital resource management requirements: user needs, administrative needs, information needs, and system needs. These dimensions emerged from the operational problems described in the institutional assessment, particularly the reliance on paper-based borrowing procedures, limited access to inventory information, fragmented transaction records, and difficulties in monitoring equipment conditions. Rather than representing separate administrative concerns, the four dimensions describe related requirements that need to be considered together when designing a digital lending mechanism. Figure 1 illustrates the relationship between the identified problems, their corresponding requirements, and the proposed digital management functions.

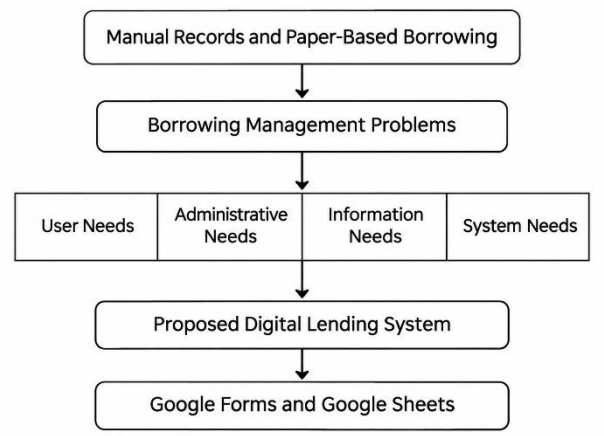

Figure 1 Mapping of Equipment and Property Lending Requirements for a Proposed Digital Management System.

As shown in Figure 1, the four dimensions address different aspects of the same lending process. User needs concern students' ability to submit borrowing requests and access information about available equipment without relying entirely on direct visits to administrative offices. Administrative needs relate to the recording and verification of requests, including the management of approval status and the reduction of repeated manual entries. Information needs concern the organization of inventory records, including item codes, categories, storage locations, physical conditions, and borrowing histories. Meanwhile, system needs emphasize ease of use, accessibility through mobile devices, and differentiated access permissions between borrowers and administrators.

These requirements informed the proposal of an integrated lending mechanism using Google Forms for borrowing requests and Google Sheets for inventory records, verification, and reporting. Within this proposed arrangement, students would have access to request forms and read-only inventory information, while administrative personnel would retain responsibility for updating records and approving transactions. The relationships illustrated in Figure 1 indicate that digitalization is not limited to replacing paper forms with online documents; it also requires coordination between resource information, borrowing procedures, and administrative responsibilities. The proposed mechanism therefore represents a preliminary system specification derived from identified operational needs rather than evidence of improved performance following implementation.

Discussion

The four dimensions identified in this study suggest that equipment and property lending in dance education should be understood as an interconnected resource management process rather than a series of isolated administrative tasks. User needs, administrative procedures, inventory information, and system accessibility are closely related because difficulties in one dimension may affect the functioning of others. For example, the availability of equipment information becomes less useful when borrowing records are not regularly updated, while an online request mechanism may provide limited administrative benefits without a clear approval procedure. This relationship extends the discussion of educational resource management beyond the digitization of individual records. Jannah et al. (2021) examined the organization of institutional assets through a web-based information system, while Adekunle et al. (2024) addressed equipment reservation and resource tracking within laboratory management. In comparison, the present analysis places greater emphasis on identifying the relationships among operational requirements before specifying a digital solution. This distinction is important because the suitability of a resource management system depends not only on its technical functions but also on how those functions correspond to existing institutional practices.

Within dance education, these relationships have implications for the organization of practice-based learning activities. Musical instruments, costumes, and performance properties may be required for different stages of practical instruction, rehearsals, and artistic production. Consequently, uncertainties regarding their availability or borrowing status may complicate the coordination of learning activities, although their direct effects on student learning were not measured in this study. The findings therefore position administrative resource management as a supporting condition for educational activities rather than merely an inventory control function. This interpretation is consistent with the broader concern for organized and accessible learning facilities reflected in the work of Wulandari et al. (2026) and Fikri et al. (2026), although both studies addressed technical learning environments. By examining equipment and property lending within a dance education program, the present

study contributes a context-specific perspective on how administrative requirements can be aligned with the practical characteristics of arts education.

The relationship between administrative processes and learning resource accessibility raises an important question regarding how the identified requirements can be translated into a practical digital management mechanism. Putra (2025) demonstrated the importance of requirements analysis in designing inventory systems that respond to existing operational problems, particularly those involving manual recording and limited information accessibility. Meanwhile, Anjani and Sarwono (2026) explored the use of Google AppSheet to support inventory control, illustrating the potential of accessible digital platforms for addressing organizational information needs. Building on these perspectives, the present study proposes the integration of Google Forms and Google Sheets as a preliminary mechanism for managing equipment and property lending in dance education. The proposed arrangement connects borrowing requests, inventory information, and administrative verification without requiring the immediate development of a customized application. However, its significance lies less in the selection of particular digital tools than in their alignment with the operational requirements identified within the educational setting.

Such alignment also requires attention to information reliability, administrative accountability, and the distribution of responsibilities among system users. Putri et al. (2026) examined a web-based asset management system that incorporated differentiated access rights, inventory tracking, and documentation to support institutional accountability. Their findings provide a useful comparison for considering how access control and transaction records may be organized within the proposed lending mechanism. Nevertheless, adopting Google Forms and Google Sheets does not automatically ensure accurate inventory records, prevent conflicting borrowing requests, or establish effective administrative control. These functions depend on consistent data updates, clearly defined approval procedures, and appropriate access permissions. Moreover, because the present study focuses on an initial institutional needs assessment rather than system implementation, the proposed mechanism has not been evaluated in terms of usability, administrative efficiency, or its effects on learning resource accessibility. Further investigation is therefore required to determine how the proposed arrangement performs under actual borrowing conditions. This distinction reinforces the central implication of the study: digital resource management in dance education should begin with an understanding of institutional practices, while technological effectiveness remains a question for subsequent evaluation.

Conclusion

This study identified the need for a more integrated approach to equipment and property lending management in the Dance Education Study Program at Universitas Negeri Jakarta. The analysis highlighted four interconnected dimensions—user needs, administrative processes, information requirements, and system requirements—that provide a basis for formulating a digital lending mechanism. The proposed integration of Google Forms and Google Sheets offers a preliminary approach to organizing borrowing requests, inventory information, and administrative verification. Beyond the selection of digital tools, the study emphasizes that effective resource management requires clear procedures, reliable information, and defined administrative responsibilities. Its contribution lies in positioning equipment and property lending as an institutional support process for practice-based dance education, rather than merely an inventory recording activity. As the proposed mechanism has not been implemented or evaluated, further research is needed to examine its usability, operational reliability, and potential contribution to learning resource accessibility under actual institutional conditions.

References

Adekunle, A. A., Abolore, B. L., Mutiu, G., & Olalekan, A. M. (2024). Design and implementation of a web-based laboratory management system for efficient resource tracking. Asian Journal of Electrical Sciences, 13(2), 19–24. https://doi.org/10.70112/ajes-2024.13.2.4248

Anjani, L., & Sarwono, A. E. (2026). Implementasi aplikasi inventory management berbasis Google AppSheet untuk pengendalian persediaan: Studi kasus pada PLN UP3 Surakarta. E-Bisnis: Jurnal Ilmiah Ekonomi dan Bisnis, 19(1), 415–424. https://doi.org/10.51903/e-bisnis.v19i1.3479

Fikri, K., Adri, M., Irfan, D., & Syukhri. (2026). Design and development of a web-based laboratory service system using the Waterfall method at SMKN 5 Padang. Journal of Authentic Research, 5(2), 2919–2930. https://doi.org/10.36312/2t7n0g62

Jannah, M., Suhartono, S., & Sidin, U. S. (2021). Sistem informasi aset (SIMaset) barang dan dokumen berbasis web. Teknosains: Media Informasi Sains dan Teknologi, 15(3), 367–380. https://doi.org/10.24252/teknosains.v15i3.23363

Putra, D. W. T. (2025). Analisis kebutuhan dalam perancangan sistem inventory hotel untuk meningkatkan efisiensi pengelolaan barang dan stok. Jurnal Ilmiah Sistem Informasi dan Ilmu Komputer, 5(2), 568–581. https://doi.org/10.55606/juisik.v5i2.1455

Putri, L. C., Amali, L. N., Padiku, I. R., Katili, M. R., & Zakaria, A. (2026). Sistem informasi manajemen aset dan persediaan berbasis web sebagai instrumen akuntabilitas pengelolaan barang milik negara. Research Review: Jurnal Ilmiah Multidisiplin, 5(2), 964–977. https://doi.org/10.54923/researchreview.v5i2.463

Wulandari, B., Rahman, D. F., Fitriyanto, D., Dewanto, S. A., & Munir, M. (2026). Development and ISO 25010 evaluation of a web-based laboratory and workshop inventory system. Jurnal Ilmiah Ilmu Terapan Universitas Jambi, 10(1), 1–16. https://doi.org/10.22437/jiituj.v10i1.47430