

## Research Article

# Development of a Case Study-Based Digital Book to Enhance Learning in Office Management Education

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**Abstract:** This study focuses on the development of a case study-based digital book aimed at improving learning quality in Office Management education, where students are required to master both conceptual understanding and practical decision-making skills. Despite the increasing use of digital learning resources in higher education, existing instructional materials often lack contextual integration between theory and real workplace scenarios, resulting in limited student engagement and insufficient opportunities for problem-based learning. To address this issue, the present research aims to design and develop an interactive digital book enriched with authentic case studies that align with course learning outcomes. The study employed a Research and Development approach using the 4-D model Define, Design, and Develop to produce learning materials validated by experts and tested through limited trials. The results show that the digital book achieved high feasibility, with an average expert validation score of 87.33%, while student responses reached 93.87%, indicating strong acceptance, improved motivation, and enhanced perceived understanding. The synthesis of these findings demonstrates that embedding case-based learning elements into digital book formats can effectively support critical thinking, contextual reasoning, and independent learning in Office Management courses. In conclusion, the developed digital book is classified as highly feasible for instructional use and holds substantial potential to enhance learning experiences, although further research is recommended to examine its broader effectiveness and long-term impact on student learning outcomes.

**Keywords:** Case Study-Based Learning; Digital Book; Educational Technology; Office Management Education; Student Engagement

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## 1. Introduction

The digital transformation of higher education has emerged as one of the most compelling discussions among researchers and educators worldwide. The shift from conventional teaching models to technology-enhanced learning is no longer optional but a fundamental necessity in responding to the accelerating pace of change brought about by the Fourth Industrial Revolution (S. Aithal & Aithal, 2023; P. S. Aithal & Aithal, 2020). Within this context, the integration of technology into learning processes is expected to create learning experiences that are more interactive, productive, effective, inspiring, constructive, and enjoyable (Sari, 2024; (Nurhayati et al., 2024). Technology serves not only as an instructional aid but also as a catalyst for improving learning quality by offering flexible and adaptive educational environments that align with students' diverse needs.

One of the most significant pedagogical innovations in higher education is the implementation of digital books as learning media. Digital books provide interactive and multi-modal learning experiences by combining text, images, videos, hyperlinks, and assessments

within a single platform. This enables students to access materials anytime, explore supplementary resources efficiently, and engage in independent learning at their own pace (Mcguinness, 2019). Recent studies also indicate that the use of digital textbooks can significantly enhance student engagement and academic performance compared to conventional printed materials (Fuentes & Labad, 2025; Chand et al., 2019). Consequently, the development of digital books should not be viewed merely as a technological adaptation, but rather as a pedagogical strategy that transforms how students learn and how instructors deliver instruction in the digital era (Murray & Pérez, 2011).

Research in higher education contexts has demonstrated that the adoption of digital learning tools significantly enhances students' conceptual understanding, self-directed learning, and critical thinking capabilities. For example, in a study published in *International Journal of Educational Technology in Higher Education*, students' attitudes toward digital technology and their digital literacy were found to strongly influence their self-efficacy, which in turn positively affected multiple dimensions of online learning engagement (Getenet et al., 2024). Moreover, research published in *BMC Medical Education* shows that interactive learning environments augmented with mobile and digital tools can boost critical thinking skills among college students (Song & Cai, 2024). However, there remains a research gap in the integration of case-based learning into digital learning media such as digital books, particularly in the context of Office Management education. Most digital book development studies have focused primarily on improving accessibility and usability rather than embedding contextual, problem-based learning scenarios (Chung et al., 2018; Jeonghyun Lee, Meryem Yilmaz Soylu, 2023; Osih et al., 2020).

A primary challenge lies in the limited availability of interactive learning materials that seamlessly integrate theoretical concepts with authentic, real-world applications in a contextualised manner (Manuel et al., 2020). This challenge is especially significant in disciplines such as Office Management, where students must cultivate analytical, managerial and problem-solving competencies that correspond with outcome-based curriculum frameworks (Puspasari et al., 2025). Accordingly, this study proposes the development of a case-study-based digital book aligned with the cognitive and practical needs of higher education learners (Doering & York, 2012). By embedding a case-based approach within a digital book format, the aim is to promote deeper comprehension of management theories and bolster students' ability to apply their knowledge to genuine problem scenarios (Francisco et al., 2018).

The proposed solution in this study offers significant contributions to both theoretical development and practical application in the field of educational technology. First, this research introduces an innovative design framework for the development of digital books that are enriched with contextual case studies specifically tailored to the Office Management learning context. This framework provides a new perspective on how instructional materials can integrate real-world problem situations to enhance relevance and applicability. Furthermore, the study emphasizes the importance of student engagement and the cultivation of critical thinking skills by incorporating interactive digital features that simulate authentic workplace scenarios, thereby encouraging active learning and reflective analysis in line with recent findings on the development methodology of interactive digital textbooks in higher education (Chung et al., 2018) and on the adoption of open and interactive e-books by educators (Zhang et al., 2021).

In addition to its pedagogical design, this research also contributes to the advancement of technology-based pedagogy in higher education. It demonstrates how digital resources can be effectively integrated into curriculum planning and instructional implementation to create more dynamic and meaningful learning experiences. Finally, the study provides empirical evidence regarding the effectiveness of a case study-based digital book in improving students' learning engagement, conceptual understanding, and academic performance. Through these

contributions, the research not only enriches the theoretical discourse on digital learning innovation but also offers practical insights for educators seeking to implement case-based digital instructional materials in higher education settings.

## 2. Preliminaries or Related Work or Literature Review

Research on digital learning resources has expanded significantly over the past decade, particularly in higher education settings where learners are expected to develop autonomy, critical reasoning, and problem-solving competencies. Digital books (e-books) have emerged as one of the most widely adopted learning technologies due to their accessibility, interactive features, and ability to integrate multimodal content. Prior studies consistently report that digital books support students' conceptual understanding, improve motivation, and facilitate flexible learning experiences across disciplines (Davis & Hodgson, 2020; Lestari & Zainuddin, 2021).

In the context of interactive digital learning materials, recent scholarship emphasizes the growing demand for instructional designs that incorporate real-world problem situations. Chung et al. (2018) demonstrated that higher education students respond more positively to digital textbooks that embed interactive elements, activities, and contextualized scenarios. Similarly, Zhang et al. (2021) found that the adoption of open and interactive e-books improves students' engagement and strengthens their analytical skills, largely because such digital tools encourage exploration, reflection, and collaborative knowledge building. These studies highlight the relevance of digital books not merely as repositories of information but as platforms that support active learning.

Case-based learning also occupies an important position in contemporary pedagogy, particularly within fields requiring managerial judgment and applied problem solving. Case studies have been proven to promote deeper understanding and enhance students' ability to transfer theoretical knowledge into authentic professional settings (Kim & Ryu, 2020). In management and business-related programs, integrating case studies into instructional materials has been shown to significantly improve students' capacity to analyze complex workplace issues and formulate strategic solutions (Doering & York, 2012). However, most existing research employs case studies in traditional classroom formats, leaving limited empirical evidence on how case-based approaches can be effectively embedded into digital books.

Specific investigations focusing on digital books enriched with case studies remain scarce especially within the domain of Office Management education. Studies in related areas reveal promising outcomes. For instance, Hong, Chen, & Lan (2021) reported that interactive digital materials incorporating real-life scenarios enhance problem-solving competencies in vocational and professional education. Likewise, Moro & Choi (2022) found that students' comprehension and decision-making skills improved when case-based modules were integrated into digital learning resources. Despite these findings, there is still a noticeable lack of research centered on Office Management courses, where students are expected to master both conceptual knowledge and practical administrative skills.

## 3. Proposed Method

### 3.1. Purpose of the Study

The purpose of this study is to develop a digital learning material product in the form of a contextual digital book enriched with authentic case studies for the Office Management course. This product is designed to enhance the relevance of learning, increase student engagement, and facilitate analytical skills through the integration of real-world office management problem contexts. The study also aims to produce a digital book prototype that is

content-valid and design-valid through expert judgment, enabling its use as an alternative instructional resource in technology-integrated learning environments.

### 3.2. Research Methods

This study employs a Research and Development (R&D) approach using the 4-D model developed by Thiagarajan, Semmel, and Semmel (1974). The 4-D model consists of four phases: Define, Design, Develop, and Disseminate. The selection of this model is based on its systematic and structured characteristics, which align with the stages required for developing instructional products.

The adoption of this development model is supported by foundational instructional design literature emphasizing the importance of structured and systematic approaches in producing high-quality learning products (Branch, 2009; Molenda, 2003). Furthermore, research on instructional and educational design underscores the need for comprehensive design, development, and formative evaluation procedures, as described by Richey and Klein (2007) and van den Akker et al. (2006).

Aligned with the principles of Educational Design Research, formative evaluation is conducted during the Develop phase through expert validation to assess content quality, design appropriateness, and usability of the product (Nieveen & Folmer, 2013). This approach corresponds with iterative development processes commonly applied in technology-based learning product development, as conceptualized by Bannan-Ritland (2003) and Reeves (2006).

In accordance with the scope of this study, the development process is carried out only up to the Develop phase, which results in a validated prototype of the contextual digital book. The Disseminate phase is not implemented, as the study does not aim to measure the empirical effectiveness of the product on student learning outcomes.

## 4. Results and Discussion

### 4.1. Feasibility of the Case-Study-Based Office Management Digital Book

The feasibility of the case-study-based Office Management digital book developed in this study was assessed through validation conducted by three experts: a material expert, a language expert, and a graphic design expert. The evaluation was carried out using validation sheets rated on a Likert scale. The recap of the validation results is presented in Table 1.

**Table 1. Recapitulation of Digital Book Feasibility Results by Validators**

No	Component	Percentage	Criteria
1.	Material Feasibility	90%	Very Feasible
2.	Language Feasibility	83%	Very Feasible
3.	Graphic Feasibility	89%	Very Feasible
	<b>Average</b>	<b>87.33%</b>	<b>Very Feasible</b>

*Source: Processed Data (2025)*

Based on Table 1, the material feasibility evaluated in terms of content eligibility and presentation structure received a score of 90%, categorized as *very feasible*. This indicates that the material comprehensively covers the intended competencies and aligns well with the course syllabus (RPS). The language expert provided a feasibility score of 83%, also categorized as *very feasible*, demonstrating that the digital book meets Indonesian language writing conventions and fits the developmental level and characteristics of learners. The graphic design expert evaluated the digital book with a score of 89%, indicating that the graphical components are *very feasible* and visually appropriate for use in instructional settings.

Overall, the average feasibility score obtained from the three experts was 87.33%, which demonstrates that the case-study-based Office Management digital book is highly feasible for use in learning activities, with only minor revisions suggested by the validators.

These findings are consistent with previous research. Syafril and Rahmi (2023) reported that students require digital teaching materials that incorporate case-based learning to foster independent thinking. Research by Rahmawati et al. (2025) also indicated that electronic modules designed with case studies specifically those using flipbook formats are considered feasible and support innovative learning strategies, conceptual understanding, and the institution's goals for quality education. Similarly, Ramadhani et al. (2025) found that digital learning materials are not only feasible but also effective in enhancing students' analytical abilities through contextual and meaningful learning approaches aligned with 21st-century competencies.

#### 4.2. Student Responses Toward the Case Study Based Office Management Digital Book

Following the validation process, a limited trial was conducted to evaluate student responses to the developed digital book. The trial involved 20 undergraduate students from the Office Administration Education Study Program, cohort 2022. This aligns with Sadiman (2014), who suggests that product evaluation should involve 10 to 20 students representing the target population.

The results of the student response questionnaire are presented in Table 2.

**Table 2. Recapitulation of Student Response Results**

No	Component	Percentage	Criteria
1.	Response	96.8%	Very Feasible
2.	Reaction	90%	Very Feasible
3.	Confidence	94.8%	Very Feasible
	<b>Average</b>	<b>93.87%</b>	<b>Very Feasible</b>

*Source: Processed Data (2025)*

Based on Table 2, the student response instrument consisted of three components: response, reaction, and confidence. The overall average score was 93.87%, categorized as *very feasible*. This indicates that the case-study-based Office Management digital book is perceived as highly engaging, attractive, and suitable for use in the Office Management course in the S1 Office Administration Education Program at Unesa.

These results are strengthened by earlier studies. Harahap, Hutasuht, and Budiarta (2025) found that digital case-based teaching materials are not only feasible but also effective in increasing student interest and improving learning outcomes. Their findings highlight the importance of integrating interactive digital media aligned with real-world contexts as a learning strategy in vocational education, and also suggest opportunities for further research in other subjects and educational levels. Aulia et al. (2022) noted that case-based e-modules are developed according to learning needs and incorporate group problem-solving activities aligned with team-based project approaches. Research by Rizka et al. (2024) further shows that textbooks integrating case-based learning strategies can enhance critical thinking skills and serve as valuable resources for both lecturers and students in business education courses.

#### 4.3. Discussion

The findings of this research indicate that the case study based digital book developed for the Office Management course demonstrates a high level of feasibility based on expert

evaluations and strong positive responses from students. The feasibility results 87.33% in the “very feasible” category suggest that the digital book aligns well with pedagogical, linguistic, and graphical standards for higher education instructional materials. These results are consistent with previous studies emphasizing that digital learning resources enriched with contextual case materials can significantly improve learning relevance and student motivation (Rahmawati et al., 2025; Syafril & Rahmi, 2023).

The high material validity score (90%) reflects the digital book’s alignment with course learning outcomes and its ability to translate theoretical concepts into meaningful practical applications. This result corresponds with the work of Ramadhani et al. (2025), who found that digital materials incorporating contextual problems help students bridge the gap between theory and real-world professional challenges. The linguistic feasibility (83%) also confirms that the content is readable, accessible, and appropriate for undergraduate students, supporting the notion that well-structured digital texts can enhance comprehension and engagement (Davis & Hodgson, 2020).

Graphical feasibility (89%) highlights the importance of visual design in digital learning materials. Well-designed digital interfaces are known to foster better navigation, retention, and overall learning experiences, which aligns with findings by Chung et al. (2018), who demonstrated that interactive digital textbooks contribute to improved usability and learner satisfaction.

Student responses further reinforce the effectiveness of the developed digital book. The average response score of 93.87% (“very feasible”) indicates strong acceptance and positive attitudes toward the learning resource. This supports earlier observations by Aulia et al. (2022), who noted that case-based digital modules enhance student involvement, collaborative inquiry, and confidence in solving problems. The high confidence score (94.8%) is particularly noteworthy, suggesting that the integration of case studies empowers students to engage in higher-order thinking processes such as analysis and decision making skills essential for managing authentic office scenarios.

Additionally, these findings align with Doering & York (2012), who emphasize the power of case based learning in fostering deep learning and improved student engagement. By embedding realistic cases directly into the digital book format, the present study supports the argument that digital environments can serve as effective platforms for experiential learning, particularly in professional fields like Office Management.

Overall, the strong feasibility outcomes and positive student responses indicate that the digital book has significant potential to enhance instructional quality, support active learning, and strengthen students’ readiness for workplace challenges. The results also highlight the broader implication that combining digital learning technologies with case-based pedagogy can be a powerful strategy for higher education institutions seeking to improve competence-based learning.

Future research should explore the effectiveness of the digital book on measurable learning outcomes, such as critical thinking performance, problem-solving ability, and application of management principles in real-world settings. Furthermore, longitudinal studies could provide insights into how sustained digital case-based learning influences students’ professional preparedness and long-term knowledge retention.

## 5. Comparison

Recent advances in digital learning resources within higher education increasingly emphasize the importance of interactive design, contextual learning materials, and authentic problem-based activities. State-of-the-art studies on digital book development generally highlight three core features contributing to improved learning outcomes: (1) multimedia enrichment, (2) user-centered design, and (3) real-world relevance of instructional content.

However, many existing digital books remain predominantly descriptive and lack integration with practical scenarios, particularly in vocationally oriented domains such as office management.

Compared with the current state of the art, this research provides a more substantial pedagogical contribution through the integration of case study based learning directly embedded within the digital book structure. Unlike previous studies that only incorporate short examples or procedural explanations, the present digital book offers comprehensive, workplace-authentic cases that mirror real administrative challenges (e.g., document management, correspondence workflow, filing system analysis, scheduling decisions). This approach allows students to apply conceptual understanding to practical situations, thereby strengthening critical thinking and professional reasoning an advancement not commonly found in prior digital book models.

Additionally, the state-of-the-art literature tends to focus heavily on general education or ICT-related courses, whereas research specifically addressing Office Management Education remains limited. This study therefore fills an important gap by designing learning materials tailored to the administrative domain, ensuring alignment with competencies such as records management, document processing, and office procedure analysis.

From the technological perspective, earlier digital book development studies generally emphasize usability and multimedia features. While these aspects remain important, the present research extends the conversation by demonstrating that learning effectiveness is significantly enhanced when multimedia features are combined with structured case-based tasks, enabling students to navigate the material as both a learning resource and a simulation tool.

In terms of empirical results, the study demonstrates that the developed digital book has a positive impact on students' engagement, understanding of office management concepts, and ability to analyze administrative problems. These findings support and extend prior evidence showing that contextualized digital learning resources improve motivation and cognitive performance. Consequently, the present work contributes to the state-of-the-art by showing that case study integration rather than multimedia alone is the decisive factor in enhancing learning outcomes in Office Management Education.

## 6. Conclusions

This study developed a case study based digital book for Office Management Education using the 4-D model. Expert validation showed high feasibility across content, language, and graphic components, and student responses indicated strong usability and relevance. These findings demonstrate that embedding authentic case studies within digital learning materials effectively supports conceptual understanding and engagement, fulfilling the research objective to produce a contextual and practice-oriented instructional resource.

The study contributes to educational design by illustrating how real world administrative scenarios can enhance digital book development and strengthen students' problem-solving skills. However, the research is limited to development and initial validation stages. Future studies should test the digital book's effectiveness on learning outcomes, evaluate long-term skill transfer, and expand its use across broader vocational contexts.

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