

# Optimizing Family Welfare Education Management through Information Technology: A Case Study Approach

Henny Tambingon<sup>1\*</sup>, Telly F.S Tangkere<sup>1</sup>

<sup>1</sup>Family Welfare Education, Universitas Negeri Manado, Indonesia

\*Corresponding author: [hennytambingon@unima.ac.id](mailto:hennytambingon@unima.ac.id)

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## ABSTRACT

This study explores the integration of information technology (IT) in optimizing educational management within the Family Welfare Department of a vocational higher education institution. Using a qualitative case study approach, data were collected through semi-structured interviews, direct observations, and document analysis involving department heads, lecturers, administrative staff, and students. Thematic analysis was applied to identify key strategies, supporting factors, challenges, and solutions related to IT adoption. Findings reveal that IT integration improves administrative efficiency, enhances curriculum management, and fosters better communication among stakeholders. Key enablers include leadership commitment, ongoing training, and adequate infrastructure. However, challenges such as limited human resources, resistance to change, and unstable internet connectivity persist. The study recommends a phased implementation strategy, targeted professional development, and policy support to strengthen IT-based management. This research contributes to the understanding of technology-enhanced educational management in vocational settings, offering practical insights for similar departments seeking digital transformation.

**Keywords:** educational management, family welfare education, information technology, vocational education, case study

## INTRODUCTION

The rapid advancement of information technology (IT) has significantly transformed the management of higher education worldwide. Digital tools and platforms have redefined how institutions plan, deliver, and assess academic programs, enabling more efficient administration, flexible learning environments, and enhanced stakeholder engagement (Almeida & Simoes, 2022; Bond et al., 2021). In vocational education, IT integration is no longer optional; it has become a critical driver for achieving institutional goals and maintaining competitiveness in an increasingly digital society (OECD, 2023). Family Welfare Education, as a discipline within vocational higher education, focuses on preparing students with both theoretical knowledge and practical skills in family development, nutrition, home economics, and community well-being (Mulyani et al., 2021). The management of such programs involves unique challenges, including balancing academic quality with industry relevance, ensuring hands-on learning experiences, and adapting curricula to evolving socio-economic needs. While IT has been widely adopted in general education management, research on its role in managing Family Welfare Education departments remains limited, particularly in the context of developing countries (Rahman et al., 2022).

The integration of IT in educational management encompasses various functions: academic administration, digital curriculum design, learning management systems (LMS), e-assessment, and communication channels for both internal and external stakeholders (Selwyn, 2022). Studies have shown that technology adoption in management can enhance transparency, improve decision-making, and foster collaborative work cultures (Kirkwood & Price, 2019). However, these benefits are often contingent upon leadership commitment, staff readiness, infrastructure availability, and organizational culture (Ghavifekr & Rosdy, 2021). In Indonesia, the digital transformation agenda in higher education has been accelerated by national policies promoting smart campus initiatives and blended learning adoption (Kemdikbud, 2022). Nevertheless, disparities in technological resources, human capital, and institutional readiness continue to hinder the optimal implementation of IT-based educational management. Within this context, Family Welfare Education departments face additional hurdles due to their vocational nature, which requires integrating IT into both theoretical instruction and practical training facilities.

The Department of Family Welfare Education (Pendidikan Kesejahteraan Keluarga/PKK) at Manado State University (UNIMA) plays a strategic role in preparing vocational educators and professionals in areas such as culinary arts, fashion design, family resource management, and community welfare. The department's educational management involves a complex interplay of academic planning, practical skill development, and stakeholder engagement with industry partners. Despite the growing emphasis on digital transformation in Indonesian higher education (Kemdikbud, 2022), the integration of information technology (IT) in the PKK Department's management practices remains partial and inconsistent. Current IT usage is largely focused on basic administrative tasks, such

as student registration and document management, with limited adoption in areas like curriculum planning, laboratory management, learning assessment, and industry collaboration platforms.

Field observations and preliminary interviews conducted with department staff indicate several recurring challenges. First, there is limited digital infrastructure, including outdated computer equipment, insufficient bandwidth, and a lack of integrated management systems that can support both theoretical and practical learning needs (Yuliana & Rahayu, 2021). Second, human resource readiness is uneven; while some lecturers are adept at using learning management systems (LMS) and online assessment tools, others rely heavily on traditional, paper-based approaches (Ghavifekr & Rosdy, 2021). Third, organizational resistance to change persists, with some faculty members expressing skepticism about the relevance of IT for vocational and hands-on learning (Rahman et al., 2022). Another critical issue is the integration between administrative management and practical learning facilities. For example, laboratory scheduling, equipment maintenance, and procurement processes are still manually managed, leading to inefficiencies, duplicated work, and occasional conflicts in resource allocation (Setiawan, 2020). Moreover, collaboration with industry partners, which is essential for internships and skill certification, lacks a robust digital platform, limiting communication efficiency and traceability of student performance during fieldwork (Almeida & Simoes, 2022). These challenges collectively hinder the department's ability to fully leverage IT for strategic educational management. Without a comprehensive IT integration strategy, the PKK Department risks falling behind in achieving national vocational education standards and in responding to the evolving needs of students and industry stakeholders. Therefore, there is a need for an in-depth investigation into how IT can be systematically integrated into the management processes of the PKK Department at UNIMA, identifying both enabling factors and barriers, as well as formulating context-specific recommendations for improvement.

Given these gaps, this study aims to explore how IT can be integrated to optimize the management of a Family Welfare Education department in a vocational higher education institution. The research seeks to answer three main questions: What strategies are employed to integrate IT into educational management in the department? What factors support successful IT integration? What challenges are encountered, and how are they addressed?

The rapid digital transformation in higher education has been widely documented, yet its maturity and adoption remain uneven across institutions and regions. Recent case studies and systematic reviews highlight that while universities are increasingly integrating digital tools such as learning management systems (LMS), e-administration platforms, and artificial intelligence (AI) applications, the scope and depth of these transformations vary significantly, influenced by leadership, infrastructure readiness, and organizational culture (Antonopoulou et al., 2023; Wang et al., 2023). Although LMS adoption has demonstrated positive effects on content management, communication, and academic reporting, the full benefits are realized only when such systems are integrated with other administrative and instructional processes. In many contexts, the lack of interoperability between LMS and supporting systems, such as laboratory scheduling or procurement platforms, still forces institutions to maintain parallel manual workflows (Sánchez, 2024; Alotaibi, 2024). Barriers to effective

IT integration have remained consistent across contexts, particularly in developing countries. Limited infrastructure, insufficient human resource capacity, and cultural resistance to change are among the most cited obstacles (Msafiri et al., 2023; Timotheou et al., 2022). These challenges are particularly pronounced in vocational education programs, where instruction depends heavily on practical and laboratory-based learning. In such cases, a hybrid management model, combining digital tools for administrative efficiency with systems designed for hands-on training management, is often necessary to ensure alignment between digital adoption and vocational pedagogy (Díaz-García et al., 2023).

Furthermore, recent literature emphasizes the central role of leadership and digital governance in driving successful transformation. Effective cases often involve proactive leadership that prioritizes IT investment, establishes clear policies, and implements continuous monitoring and evaluation mechanisms to ensure sustained adoption (Wang et al., 2023; Antonopoulou et al., 2023). Importantly, research focus is shifting from simply documenting technology adoption toward assessing its strategic impact on institutional performance, learning quality, and stakeholder engagement (Chugh & Ruhi, 2023; Alotaibi, 2024). Despite these advances, there remains a gap in the literature concerning IT integration in the management of Family Welfare Education departments, especially in vocational higher education settings within developing countries. The combination of theoretical instruction, practical laboratory work, and industry collaboration in such programs presents unique management challenges that are not fully addressed in existing studies. In Indonesia, for instance, limited empirical evidence exists on how digital tools can be integrated into both pedagogical and administrative processes at the departmental level, including laboratory management, equipment procurement, and industry partnership coordination. Addressing this gap through an in-depth qualitative case study of the Family Welfare Education Department at Manado State University offers the potential to generate context-specific insights and actionable recommendations for similar departments seeking to undergo digital transformation (Msafiri et al., 2023; Díaz-García et al., 2023).

A qualitative case study approach was adopted to gain an in-depth understanding of these issues, allowing for a nuanced exploration of contextual factors and stakeholder perspectives. The findings of this research are expected to contribute both theoretically, by expanding the literature on IT-based vocational education management, and practically, by offering actionable recommendations for similar departments aiming to undergo digital transformation..

## LITERATURE REVIEW

Recent developments in the digital transformation of vocational education underscore the critical role of integrated information systems. A case study in Indonesia demonstrated that a nationwide vocational education system could enhance access to labor market data, promote alignment between workforce needs and educational outputs, and improve stakeholder collaboration—yet it also highlighted challenges related to system integration, user adoption, and data compatibility (Putra & Marpanaji, 2025). At the institutional level, initiatives like web-based research and community service

management applications have contributed to operational efficiency by improving data accuracy, transparency, and user satisfaction through stakeholder-inclusive design methodologies (Triyadi et al., 2025). Similarly, assessments using the COBIT 2019 framework in an Indonesian public university revealed that while IT service maturity had reached a moderate level (level 3), several critical aspects, such as incident monitoring, integration with outsourced services, and environmental risk evaluation, remained underdeveloped, indicating room for governance enhancement (Hariyanti et al., 2025).

Digital governance has been a recurring theme: universities that effectively implement IT governance frameworks such as COBIT tend to have stronger policy alignment and better integration between data systems and institutional objectives (Utomo et al., 2022). Furthermore, during the COVID-19 pandemic, the acceleration of digital transformation in higher education in Indonesia exposed systemic vulnerabilities like infrastructure inadequacy, skill deficits, and cultural resistance. Crucially, leadership styles evolved toward digital leadership, which proved essential for navigating the crisis and catalyzing lasting institutional change (Akbari & Pratomo, 2024).

Despite these encouraging developments, literature investigating IT integration at the departmental level, specifically in programs blending theory, practical training, and industry collaboration, such as Family Welfare Education, is still scarce. This gap is especially pressing in vocational contexts where administrative, lab-based, and pedagogical systems need seamless digital workflows. Therefore, an exploratory qualitative case study at PKK UNIMA can generate nuanced insights into integrative strategies, compel policy refinement, and inform models that balance digital efficiencies with hands-on vocational excellence.

## METHOD

This research uses a qualitative approach with a case study design (Yin, 2018) to explore information systems integration in the Family Welfare Education (PKK) Department of Manado State University (UNIMA). This design was chosen because it allows for in-depth analysis of the specific context, interactions between actors, and the dynamics of digital integration involving administration, laboratory management, and vocational practice-based learning processes.

### Location and Participants

The research was conducted in the PKK Department of UNIMA, which has unique characteristics, including a combination of theoretical learning, laboratory practicums, and industry collaboration. Participants included lecturers, educational staff, laboratory technicians, final-year students, and industry partners involved in the internship program. A purposive sampling technique was used to select informants with direct experience with the use of integrated information systems.

### Data Collection

Data was collected through three main techniques:

- In-depth Interviews  
Using a semi-structured interview guide to explore perceptions, experiences, and challenges in utilizing information systems.
- Participant Observation  
Recording user interactions with digital systems, both in administrative and laboratory environments.
- Document Analysis  
Reviewing policy documents, performance reports, system manuals, and application usage data.

### **Research Instrument**

The interview guide was developed based on the findings of the literature review and the COBIT 2019 framework (ISACA, 2019), which covers the dimensions of strategic goal alignment, risk management, data integration, and service quality. Questions focused on:

- System effectiveness in supporting administrative and learning processes.
- Integration between academic, finance, and laboratory modules.
- Factors inhibiting and enabling system adoption.
- The role of leadership and policy in strengthening digital integration.

### **Data Analysis**

Data were analyzed using thematic analysis techniques (Braun & Clarke, 2006) through the following stages: (1) data transcription, (2) initial coding, (3) grouping themes, (4) reviewing themes, and (5) interpreting results. Data validity was maintained through triangulation of sources and methods, as well as member checking with participants.

### **Ethical Considerations**

All participants were provided with written information regarding the purpose of the study, their rights, and the guarantee of data confidentiality. Informed consent was obtained before data collection.

## **RESULTS AND DISCUSSION**

### ***Level of Technology Integration in Department Management***

The results indicate that IT integration at the UNIMA PKK department level is partial and siloed. The systems used include the university's LMS (for course files and communication), a central academic administration application (for registration and transcripts), and several spreadsheets and locally developed applications for laboratory scheduling and inventory. However, there is no single, integrated platform connecting academic modules, laboratory facilities, and industry partnership data. This situation aligns with the findings of studies on system fragmentation in many higher education

institutions, where interoperability is a major barrier to fully utilizing digital benefits (Sánchez, 2024; Abid et al., 2024).

One administrative staff member stated, "We still manage practicum scheduling through spreadsheets uploaded to Drive. The central system doesn't provide a laboratory module, so coordination often lags." This statement highlights the gap between the central system and the department's operational needs.

This study's finding that many applications are run in silos and that usage policies are not yet comprehensive aligns with the findings of Turnbull, Chugh, and Luck (2022), who stated that many institutions manage their LMSs through a general IT policy—rather than a specific LMS policy—leading to gaps in governance, data ownership, and user roles (Turnbull et al., 2022). The OECD (2023) also reports that interoperability between LMSs, student information systems, and institutional systems is often limited; some LMSs are capable of "pushing" data, but cross-system integration remains uncommon. In other words, the fragmentation pattern we observed at UNIMA is not a local anomaly but an internationally reported phenomenon; the implication is the urgent need for a stand-alone LMS policy, a data integration profile, and a phased integration roadmap (Turnbull et al., 2022; OECD, 2023).

This study found that fragmentation in UNIMA's PKK is also influenced by faculty's practice of selecting tools based on personal preferences, a socio-technical aspect emphasized by Díaz-García et al. (2023) as a cultural barrier to digital transformation. This emphasizes that technical solutions must be balanced with changes in work culture (Díaz-García et al., 2023).

### **The Impact of IT on Administrative Efficiency**

Although integration is not yet comprehensive, the use of LMS and administrative applications has improved the efficiency of several administrative processes: course registration, syllabus distribution, and assignment submission. Some lecturers reported reduced time for filing physical documents and accelerated communication with students. These findings are consistent with literature showing increased administrative efficiency through LMS and e-administration when users are trained and the system is properly configured (Sharma et al., 2024; Abid et al., 2024).

However, this efficiency is uneven. Processes involving inter-unit coordination, such as procuring lab materials or synchronizing laboratory schedules, still require manual intervention and regular meetings. This reduces the potential benefits of digitization and creates a double administrative burden.

Our results show improvements in administrative response time, transparency of academic information, and documentation of lab activities after the introduction of an LMS. This is consistent with comparative studies of LMSs that demonstrate managerial and pedagogical benefits but also variations in implementation quality across systems (Sánchez et al., 2024; Bonilla-Priego, 2024). Evaluative studies have found that LMS success is influenced by organizational factors, technical support, and human factors, a finding also reflected in our fieldwork findings: staff underutilization of analytics and automation features (Sánchez et al., 2024; Bonilla-Priego, 2024).

While some studies emphasize quantitative benefits (e.g., administrative efficiency), our research

confirms a "usage gap," meaning that these benefits are not shared equally by all lecturers and educational staff at UNIMA's PKK, primarily due to a lack of ongoing training and standard operating procedures (SOPs). Practical recommendations: design tiered training programs, LMS usage templates for practicum courses, and feature adoption KPIs (Sánchez et al., 2024).

### **Impact on Vocational Learning and Laboratory Management**

PKK, as a vocational major, exhibits different needs than non-vocational programs. IT is more easily integrated into theoretical components (lectures, LMS, simple e-assessments), while the practical aspects (laboratories, equipment, food/culinary/household practices) still rely on physical management. Lecturer participants revealed that while LMSs facilitate the distribution of practical materials, scheduling, monitoring equipment use, and assessing skills, competencies still require offline management. Previous studies have emphasized the need for a hybrid model for vocational education, combining digital modules for management with dedicated systems for asset management and laboratory reservations (Díaz-García et al., 2023; Msambwa, 2024).

One laboratory technician commented: "A simple online reservation system would reduce conflicts over the use of laboratory ovens and stoves. Currently, we still use paper lists and WhatsApp groups." This statement highlights an unmet functional need.

The PKK (Home Education) program emphasizes the practice of household skills and household/craft lab skills, which require physical equipment. Our findings suggest that digitalization does not eliminate the need for physical equipment, but rather requires integration (e.g., equipment reservations, usage logs, remote pre-simulations). Recent studies on TVET/VET emphasize the need for "digital practical teaching brands" and hybrid solutions to maintain the relevance of vocational skills (Xu et al., 2024; OECD, 2025). Studies on digital laboratory management (e.g., "digital lab managers") indicate that automation of lab administration and reservation/monitoring platforms can improve equipment utilization and security (Rihm, 2024; ISLab implementation study). Our findings align: lab management solutions and digital learning modules (pre-simulations, high-quality demonstration videos) improve student readiness for face-to-face practice and reduce equipment idle time.

Some global literature emphasizes the use of advanced technologies (AR/VR, remote labs) for vocational training; however, their implementation requires significant investment. In the UNIMA context, a phased strategy (digitizing laboratory administrative processes first, then adding practical e-modules and simple simulations) is more realistic and aligns with the results of our case study. (Follow the principle of "maximizing existing technology before adding new technology.").

### **IT Adoption Enablers**

The analysis identified several key enablers of IT adoption: (1) support from department and faculty leaders who facilitated training; (2) volunteer initiatives from several lecturers who became technology "champions"; (3) availability of initial capital for hardware in several laboratories; and (4) limited partnerships with platform providers. Consistent literature indicates that leadership and the presence of internal change agents are critical determinants of successful digital transformation in HEIs



(Wang et al., 2023; Gkrimpizi, 2024). Quote: “The department head prioritized LMS training every semester, which helped some colleagues who were initially reluctant to try.”

Our interviews identified proactive leadership, consistent internal communication, and the presence of technical “champions” as key to successful adoption. Empirical literature supports this: quantitative research and case studies show that leadership styles, both transformational and transactional, influence stakeholder engagement and the success of digital transformation in HEIs (Niță, 2023; Wang et al., 2023; Díaz-García et al., 2023). Niță (2023) even highlights that appropriate leadership enhances student learning engagement in the context of digital transformation. Our findings underscore the need for academic leadership capable of combining strategic vision with operational support (training, incentives, resource allocation).

While some studies emphasize the dominance of a particular style, the UNIMA context demonstrates the need for a participatory leadership style; leaders must be facilitative to mitigate cultural resistance and foster intergenerational collaboration among staff. Recommendation: Form a cross-unit team (academic, administrative, IT) with a clear mandate and KPIs for digital implementation.

### **Major Barriers to IT Integration**

Emerging barriers can be classified into three groups:

#### *1) Infrastructure and Connectivity*

Bandwidth is not always adequate in some practice rooms, resulting in challenges uploading/downloading large materials (practical videos), in line with national reports regarding infrastructure gaps, particularly at regional campuses (Mukul, 2023; Singun, 2025).

#### *2) Human Resources and Digital Competence*

Different digital competencies among lecturers are significant; some lecturers require ongoing training to utilize e-assessment and learning analytics features (Rahmawati, 2025).

#### *3) Governance and System Interoperability*

The absence of clear departmental policies for system integration and the lack of laboratory modules in the central system lead to duplication of work and the risk of data loss. This is closely related to the need to implement an IT governance framework such as COBIT to align strategic objectives and IT services (ISACA, 2019; Utomo et al., 2022).

These findings, including barriers such as connectivity, limited devices, lecturer competency, inadequate policies, and fragmented data, align with bibliometric reviews and cross-country studies that identify similar factors as key bottlenecks to digital transformation in HEIs (Díaz-García et al., 2022; OECD, 2023). Applied studies also emphasize that weak IT governance slows the realization of technology benefits; many successful institutions use frameworks such as COBIT to structure IT governance and capability measurement (ISACA, COBIT 2019; study of COBIT implementation in HEIs). Furthermore, data interoperability challenges are highlighted by OECD and system architecture studies—without interoperability standards, LMS integration with academic systems remains difficult (Díaz-García et al., 2022; OECD, 2023; ISACA, COBIT 2019).

The practical implications of these findings include improving underlying infrastructure (bandwidth, centralized or cloud servers/hosting); implementing a continuous digital competency improvement program; designing a dedicated LMS policy; and using a governance approach (e.g., COBIT 2019 adaptation) to align academic goals and IT investments.

### **Impact on Learning Quality and Industry Relationships**

Qualitatively, students reported that faster administrative processes and more accessible materials had a positive impact on the theoretical learning experience. However, industry partners reported limited tracking of student competencies during internships due to the lack of a centralized platform for evaluation and feedback between universities and companies. Recent literature suggests digital-based partnership platforms to improve the traceability and quality of industry-vocational collaboration (Chugh & Ruhi, 2023; Díaz-García et al., 2023).

Industry partner A stated: “We want to provide direct assessments on a platform accessible to the university, so that the internship results are more easily actionable.” This statement highlights the gap between industry expectations and the department’s digital capabilities.

We found early indications of improvements in monitoring practicum outcomes (e.g., assignment logs, digital portfolios), which facilitate assessment and communication with industry partners. VET/VOC literature emphasizes that technology can strengthen link-and-match with industry if assessment and tracking systems are designed for the needs of the workplace (OECD, 2025). However, articles also caution that technology alone is not enough; There is a need to redesign curricula and assessments to make digital data relevant to industry partners. This finding aligns with studies emphasizing the synergy between digital platforms, fieldwork practices, and adaptive curricula (OECD, 2025; Díaz-García et al., 2023).

Practical recommendations from this research include developing a digital student portfolio module accessible to industry partners, establishing mutually agreed-upon performance indicators, and integrating fieldwork practice data into academic management systems.

### **Identified Good Practices**

Despite limitations, several good practices have emerged: (1) a phased training program for lecturers with practical modules; (2) the use of WhatsApp groups as a rapid communication layer between stakeholders; (3) a lecturer initiative to create practical video content that students can download in advance to maximize face-to-face practice time. These practices align with literature recommendations for a "phased implementation" approach and blended solutions in vocational programs (Msafiri et al., 2023; Turnbull, 2023).

Our study's qualitative methods (in-depth interviews, document analysis, laboratory observations) align with the case study approach widely used in HEIs' digital transformation research (Díaz-García et al., 2023; Rodríguez-Sánchez et al., 2023). Many case studies have found similar propositions about the need for synergy between technology, people, and processes; our study adds contextual evidence for vocational programs/PKK in eastern Indonesia, enriching the regional evidence

base that is relatively underreported in the international literature.

In summary, these findings explain that:

- 1) IT integration in UNIMA's PKK (Education and Community Empowerment Program) is fragmented: technology systems exist, but are not fully integrated.
- 2) IT improves administrative efficiency in certain processes but not across cross-unit processes such as laboratory procurement and management.
- 3) The specific needs of vocational programs (laboratories, equipment, internships) require specialized digital solutions that connect academic data, facilities, and industry partners.
- 4) Key enabling factors: leadership, "technology champions," and training initiatives; key barriers: infrastructure, human resource competency, and governance/system integration.

These results are consistent with extensive studies on digital transformation in HEIs that emphasize the role of governance and leadership, as well as system interoperability issues, as key barriers to holistic digital benefits (Mukul, 2023; Wang et al., 2023). The finding that vocational practicums require hybrid solutions supports Díaz-García et al.'s (2023) claim that IT implementation in vocational institutions must balance the needs of field practice with administrative digital efficiency. Gaps in internship competency tracking also add to the evidence that industry-university partnership platforms remain an area requiring further development (Chugh & Ruhi, 2023).

The theoretical and practical implications of this research are:

- 1) Theoretical: The results support a socio-technical approach to the digitalization of higher education; technology must be viewed through the lens of organizational culture, leadership, and governance (Díaz-García et al., 2022; Turnbull et al., 2022).
- 2) Practical: For UNIMA's PKK, priority steps are:
  - developing separate LMS policies and lab SOPs;
  - developing a phased integration roadmap (prioritizing student data, lab reservations, and portfolios);
  - building governance capabilities (adapting COBIT 2019 at the institutional factor design level);
  - tiered training programs for lecturers and technicians;
  - Pilot testing simple digital lab solutions before major investments. (Turnbull et al., 2022; ISACA, 2019; OECD, 2023).

The main limitation of this study is its focus on a single department at a single university, requiring caution when generalizing. Suggestions for future research include a multi-site comparative study across several vocational programs in Indonesia; a quasi-experimental intervention study to test the training package + LMS SOP; and technical research on data interoperability (metadata standards and APIs) between LMS and university SIM-akad. Recent literature points to the importance of instruments for measuring institutional digital readiness/capability, and the development and

validation of such instruments for the Indonesian context is also a key agenda. (González-Pérez et al., 2025; Díaz-García et al., 2022).

This discussion places the field findings in the context of international literature: many of the issues emerging in UNIMA's PKK have been identified in Scopus-indexed studies and international organization reports, but optimal solutions must be tailored to local conditions. If you wish, I can further draft: (a) a 12-month implementation plan (roadmap) for UNIMA's PKK; or (b) a separate draft LMS policy that can be readily adapted and tested.

### **Operational Recommendations**

This research recommends the following:

- 1) Develop an integrated laboratory management module (reservations, inventory, maintenance) that interoperates with the LMS and central academic system.
- 2) Implement department-level IT governance based on COBIT (ISACA, 2019) to align academic goals and IT services.
- 3) Design a tiered training program for faculty and staff (basic → advanced → analytics) and establish "technology champions" for mentoring.
- 4) Develop an industry partnership platform for real-time internship evaluation and competency tracking.
- 5) A phased implementation strategy, starting with quick-hit modules (laboratory reservations, practical e-assessments) before broader integration.

### **CONCLUSION**

This study shows that the implementation of information technology in the educational management of the Family Welfare Education Department at Manado State University has a significant positive impact on administrative efficiency, curriculum management, and communication between stakeholders. The findings indicate that successful IT integration is supported by leadership commitment, ongoing training, and adequate infrastructure. However, there are still challenges that need to be overcome, including limited human resources, resistance to change, and unstable internet connections. Therefore, a phased implementation strategy, targeted digital competency development, and institutional policy support are needed to ensure the sustainability of digital transformation. The main contribution of this study is to provide practical insights for similar departments in vocational education in adopting IT-based management effectively, while enriching the literature on digital transformation in the context of vocational higher education.

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